# Learning from Job Offers About Labor Supply Constraints

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## I. Introduction

Despite rising education levels and declining fertility rates, women's labor force participation remains low in regions including South Asia, the Middle East, and North Africa. Labor market surveys in these regions attempt to characterize women's job preferences and constraints, yet these assessments present a fundamental challenge: many women must evaluate their labor supply preferences without prior work experience.

For women with limited prior work experience, inaccurate beliefs about their labor supply constraints could create additional barriers to labor market entry. If women are overoptimistic, then they may search for jobs that they are later unable to do due to factors such as skill mismatch, time constraints, or the opposition of other household members. Conversely, women who are under optimistic may not search for jobs or forgo viable employment opportunities despite having the interest and skills to work. This paper examines how direct exposure to employment opportunities affects women's ability to accurately predict their labor supply behavior.

Women's beliefs about their own labor supply constraints likely interact with established drivers of low female labor force participation in countries such as India. For example, women may have inaccurate beliefs about other household members' preferences or their intrahousehold bargaining power. This may affect their labor supply if husbands and in-laws have a say in women's labor supply decisions, as is often the case, and because husbands frequently express lower support for women's employment than women themselves do (e.g. Bernhardt et al., 2018; Bursztyn et al., 2020; Field et al., 2021; Bursztyn et al., 2023; Lowe and McKelway, 2024).

In addition, survey data indicate that there is a significant mismatch between the types of jobs available and the types of jobs preferred by women who are out of the labor force (Fletcher et al., 2017). However, since these

women may have inaccurate beliefs about both what they want in a job and what prevents them from working, the true extent of this mismatch may be different from what surveys suggest. Without direct labor market experience to test these beliefs, it may be difficult for a potential worker to accurately assess her job preferences and constraints.

## II. Data and Study Design

### *A. Study Sample*

This analysis draws on data from two job preferences elicitations administered to 1,524 women in West Bengal, India. These women were out of the labor force and had limited prior work experience. Over two-thirds had never previously worked for pay. In between the job preferences elicitations, these women were enrolled in a randomized controlled trial that offered randomly selected women part-time, short-term data annotation jobs.

The study sample includes women from eight areas in and near Kolkata in a mix of urban, peri-urban, and rural areas. The women are thirty years old on average and three-quarters of them have a child under the age of eighteen. To be eligible for the study, women needed to be literate in either Hindi or Bangla and have access to a smartphone. These criteria were put in place so that any woman enrolled in the study would have the skills and resources to do the job if randomly assigned to receive an offer.

### *B. Job Preferences Elicitation*

*Pre-Intervention*.— We conducted an initial incentivized job preferences elicitation with 1,670 participants. Enumerators presented each participant with five data annotation positions, offered in collaboration with a smartphone-based tasks platform, and asked the respondent if she would accept the job if offered it. The jobs varied in flexibility along three dimensions: (i) time flexibility, (ii) flexibility to multitask work with childcare, and (iii) ability to work from home. To ensure incentive compatibility, the randomization and job offer procedure followed the strategy method. Participants were first randomly assigned to treatment or control groups, then treatment group participants were randomly assigned to one of the five positions. Job offers were extended only to treatment group participants who had expressed willingness to accept their assigned position during the elicitation.

*Post-Intervention.*— Following the work intervention, we administered a second incentivized elicitation incorporating explicit opportunity costs with 1,524 of the initial participants. Respondents made binary choices between job offers and a valuable household item (a pressure cooker) across seven job

configurations. The pressure cooker, valued at Rs 900 (~10 USD), represented 8% of average monthly household income and 22.5% of potential maximum job earnings, establishing meaningful stakes for each choice.

To maintain incentive compatibility, we again employed the strategy method. Each participant was randomly assigned to one of the seven scenarios with equal probability. Their stated preference for that scenario determined the outcome: those selecting the job offer received a call from the jobs team with the corresponding position, while those selecting the pressure cooker received the item via home delivery. This design means that stating a preference for employment over the pressure cooker, but subsequently declining the actual job offer, imposed a meaningful financial cost.

### *C. Description of Jobs*

The jobs in the both elicitations included five levels of job flexibility. In the pre-intervention elicitation, there were only digital jobs, while in the post-intervention elicitation, two non-digital jobs were added to assess if effects were digital-specific or applied to paid work more generally. The five work arrangements, in order of most to least flexible, were:

*(i) Most Flexible Job*.— this job allowed women to work from home, at any hours, and while multitasking work with childcare,

*(ii) Time-Inflexible Job*.— this job allowed working from home while multitasking with childcare, but only during a fixed time shift chosen at the time of accepting the job offer,

*(iii) Multitasking-with-Childcare-Inflexible Job*.— this job allowed working from home at any hours, but women were told they could not have children next to them while working,

*(iv) Time- and Multitasking-with-Childcare-Inflexible Job*.— this job allowed women to work from home but combined the constraints from jobs *(ii)* and *(iii),*

*(v) Office Job*.— this job required coming to a nearby office. The offices were open from 10am-6pm six days per week and included only female workers and supervisors.

The two work domains included in the post-intervention elicitation were digital and non-digital jobs. The digital jobs spanned all five work arrangements, while the non-digital jobs included the most flexible arrangement and the office arrangement. The digital jobs consisted of data annotation tasks contributing to Hindi and Bangla speech datasets, while the non-digital jobs included mask sewing, bag folding, and jewelry making.

## III. Analysis

The main outcome variable in our analysis is an individual-level indicator for whether the study participant made a mistake in their choice

between job offer and gift. We say that the participant made a mistake if she left money (the gift) on the table: that is, she selected the job offer over the gift, but then when actually offered the job, she did not accept the job and start work. This is a costly decision because she forfeits the gift while also not gaining income from the job. We say that a participant predicted her labor supply correctly if she either (a) selects the job offer over the gift and then accepts and starts the job when offered it, or (b) selects the gift over the job offer.

Our main results come from a simple regression of the outcome variable on treatment assignment controlling for strata fixed effects. The randomization was stratified by area, access to an individual or shared smartphone, and having a child under eight.

## IV. Results

Job offer exposure improved women's ability to predict their own labor supply behavior. Treatment group participants were 5 percentage points more likely to make choices without leaving money on the table ($p = 0.03$). One quarter of the control group chose the job offer over the gift but then did not accept the job and start work, as compared to 20 percent in the treatment group (see Figure 1).

Job offers could improve women's ability to predict their future labor supply through two distinct channels. First, direct work experience might, conditional on choosing the job offer over the gift, increase the ability of women to start those jobs. Second, the mere process of receiving and evaluating a job offer might help women update their beliefs about labor supply constraints, even without actual employment. For example, they might receive a job offer and then, after discussing the offer with other family members, find out that they are not ultimately able to accept the job and start working. The first mechanism is explored in Ho et al. (2025). In this short paper, we focus on the second mechanism: how job offers can affect the accuracy of beliefs about labor supply preferences and constraints even in the absence of a direct employment channel.

This second mechanism is quantitatively important in our sample. Of the 1,250 women randomly assigned to the treatment group, 42% chose a job in the pre-intervention elicitation but then were unable to accept and start that job when offered it. 15% said that they were not interested in the job they were randomly assigned to, while 42% said they were interested in a job and then accepted and started work when offered it.

There are several reasons that women may not be able to accept jobs that they initially thought they wanted. Broadly, we classify potential barriers into two categories: internal

and external constraints. Internal constraints could include learning that she has less time to work than she initially imagined, or that the work is more difficult than she imagined. External constraints could include learning that her husband or in-laws are less supportive of her working than anticipated. To distinguish between these channels, we analyze heterogeneous treatment effects along five dimensions: agency over labor supply, prior work experience, smartphone ownership, education level, and whether she is predicting a job in the same domain as her previous job offer (digital) or a new domain (non-digital).

If learning about external constraints drives our results, we would expect stronger treatment effects among women who lack decision-making autonomy or prior work experience, as these women are more likely to face household opposition. In our study sample, only 36% of women report that they themselves would have the final say in their own labor supply decisions. Previous paid work experience similarly likely signals that a woman is not constrained by other family members' opinions about her labor supply, in that her family previously allowed her to do paid work.

The results of these heterogeneous treatment effect specifications are presented in Figure 2, Panels A and B. The coefficients on treatment are larger for women who do not have the final say in their own labor supply, and larger for women who have not had previous work experience, both what we would expect if women were learning about external constraints, but the differences in treatment effects between the groups is not significant.

Women with higher educational attainment or personal smartphones should face fewer internal constraints related to task capability or device access. If a woman is more highly educated and has her own smartphone, she is less likely to have learned that the job is harder than anticipated given that the only skill required for the tasks was basic literacy and smartphone usage. In our study sample, the median level of education is completing $10^{th}$ standard, which is approximately equivalent to completing $10^{th}$ grade in the United States.

We find that the treatment effects are entirely driven by women who do have their own smartphone and by women who are more educated than the median participant (Figure 2, Panels C and D). Although only suggestive, these results point against learning about internal constraints such as ability to do the tasks well as the mechanisms for improved prediction about own labor supply.

Finally, the treatment effect for predicting labor supply in non-digital jobs is the same as for digital jobs (Figure 2 Panel E). This suggests that learning from job offers occurs

about general labor supply constraints rather than job-specific capabilities.

## V. Discussion

This study demonstrates that direct exposure to employment opportunities enables women to make more accurate predictions about their future labor supply decisions. The process of evaluating job opportunities may provide valuable information about labor supply constraints independent of actual work experience.

Heterogeneous treatment effects provide insights into the mechanisms underlying this learning process. The concentration of effects on more educated women who have their own smartphones, and the similar effect size across job domains, suggests that learning primarily occurs about external constraints such as family members' preferences rather than internal constraints such as own capabilities.

The fact that women can learn about their own constraints without actual employment suggests that creating opportunities for women to seriously consider and evaluate job offers could help them better understand and navigate these constraints in a low-cost way. Further research could explore whether there are persistent discouragement effects from attempting to take a job and learning that it is not possible due to external constraints, as well as to explore whether learning from job offers could improve the efficacy of women's job search efforts.

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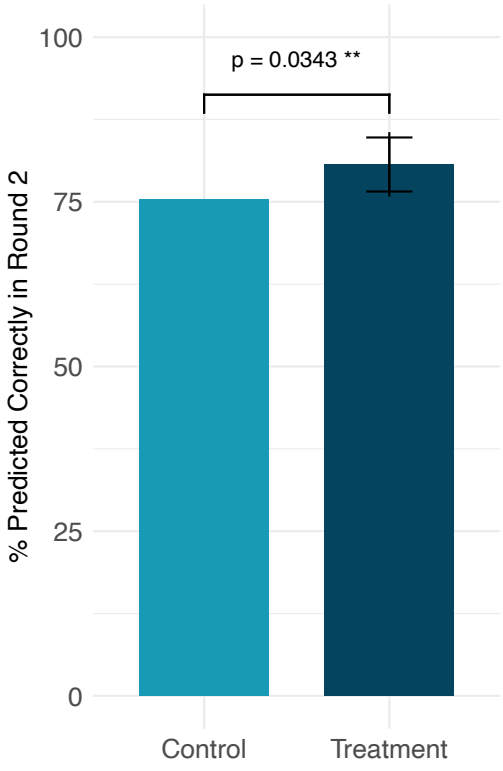
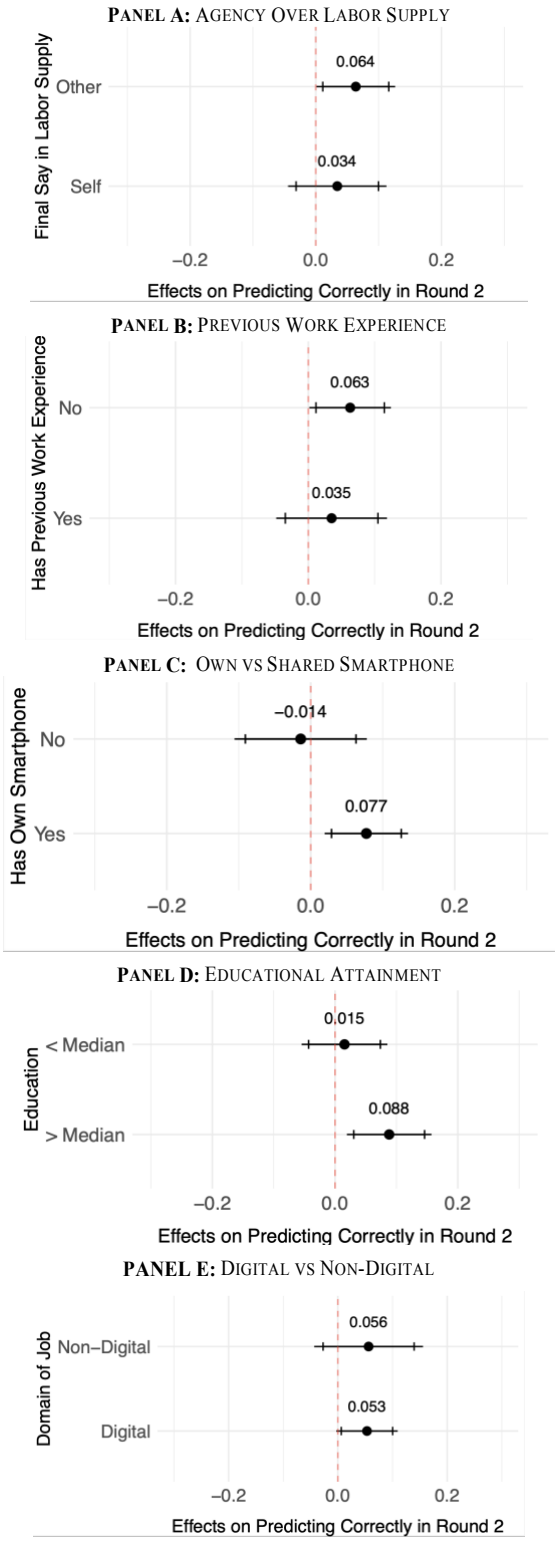
## Figures and Tables

FIGURE 1: EFFECT OF A JOB OFFER ON CORRECT PREDICTION ABOUT FUTURE LABOR SUPPLY




*Note:* This figure compares the share of women in the control group versus treatment group who correctly predict their labor supply during the incentivized job preferences elicitation. The confidence interval shows both 90% and 95% confidence intervals. The regression includes strata fixed effects and coefficients are estimated using heteroskedasticity-consistent standard errors.

FIGURE 2: HETEROGENEOUS TREATMENT EFFECTS




*Note:* This figure presents heterogeneous treatment effects by having the final say in own labor supply (Panel A), having previous paid work experience before the study (Panel B), having one's own smartphone rather than a shared device (Panel C), having above median educational attainment (Panel D), and whether the job is digital or non-digital (Panel E). 90% and 95% confidence intervals are shown.