# The barriers to female employment: Experimental evidence from Egypt

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**Abstract**

Can making jobs easier to find and keep raise female employment in societies where gender norms discourage women from working? We report the results of an experiment in Egypt — a country where social norms limiting female employment are widely held, but many women nevertheless look for work and identify lack of childcare as the key barrier to employment — designed to help women with young children obtain employment. The study cross-randomized job matching (making jobs easier to find) and child care subsidies (making jobs easier to keep). Take-up of the child care subsidies was low, and while nearly half of the women who were offered the opportunity signed up for the job-matching services, only some applied to jobs and very few obtained jobs through the services. Neither intervention led to appreciable changes in women's employment or the use of child care. We present evidence that a mismatch between desired non-pecuniary job attributes and the attributes of available jobs limited the impacts of the interventions. While this may be partly due to gender norms, we also document a mismatch between desired and existing job attributes for couples who do not report restrictive norms. Overall, our results demonstrate the limits of female employment interventions that do not address — by either tackling norms or strengthening job amenities — the mismatch between desired and available non-pecuniary job attributes.

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**JEL codes**: J22, J13

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# 1 Introduction

Less than half of the world's women are employed, compared to more than two-thirds of the world's men (International Labour Organization, 2023). Gender gaps are especially large in countries in the Middle East and North Africa (MENA) (Verick, 2018). Why do so few women work in these countries? One hypothesis is that female employment — and especially the employment of mothers with young children — is constrained by gender norms that consider it inappropriate for women to work, since their primary role is seen as that of caregivers. However, female employment may also be held back by structural economic barriers — limited demand for female labor, search frictions and insufficient provision of childcare services. In representative surveys from the region, men often express support for social norms that limit female employment (e.g., norms against working outside of the home or in male-dominated environments) (El-Feki et al., 2017; Gauri et al., 2019; Keo et al., 2022), while women point to economic constraints as being particularly important (National Council for Women et al., 2023). Which set of barriers is more binding remains unclear.

An influential view in the social sciences proposes that economic barriers are more fundamental than social constraints: given sufficient incentives, individuals will break norms. Evidence supporting this view shows that economic opportunities such as the boom of the garment sector in Bangladesh or the arrival of call centers in India caused women to join the labor force and delay marriage and childbirth (Heath and Mobarak, 2015; Jensen, 2012). Furthermore, even in highly conservative societies such as those in the MENA region, many women report searching for work (Assaad et al., 2020; Krafft et al., 2022) and attribute their unemployment to weak labor demand or limited childcare options (Assaad et al., 2019; Economic Research Forum and UN Women, 2020). This literature suggests that there may be a sizable group of women for whom gender role norms are not the primary obstacle to taking up employment.

An alternative view argues that gender norms are the most pressing constraint. According to this view, a large social cost of breaking gender norms motivates households to forgo lucrative employment opportunities (Majbouri, 2023). Norms are particularly likely to bind after marriage and childbirth, when they become highly restrictive and the largest gender employment gaps tend to develop (Assaad et al., 2022; Kleven et al., 2024). As a result, according this view, it would be difficult to make progress on female employment without changing gender norms first. This perspective is bolstered by literature showing major gains in female labor force participation following historical shifts in norms (Agte and Bernhardt, 2023; Bernhardt et al., 2018).

In this paper, we study whether the employment outcomes of Egyptian mothers can be improved by tackling two economic barriers that mothers themselves believe to be fundamental: the availability of affordable childcare and labor demand. Egypt is a society where conservative gender norms are widespread. For instance, 98 percent of men and 85 percent of women agreed that "changing diapers, giving baths to children, and feeding children should all be the mother's responsibility" (El-Feki et al., 2017). Also, female employment is severely limited. In Egypt as of 2023, only 15 percent of women were employed, compared to 69 percent of men (Krafft et al., 2024a). In our sample of married women with children aged 1-5 living in low-income areas of Greater Cairo, mothers report that the most important barrier to employment is the lack of childcare, while only about half of husbands believe that it is appropriate for a woman to work outside of the home.

In our experiment, we randomly offered child care subsidies (vouchers) and/or employment services (job matching). Vouchers for local nurseries were initially offered at different levels of subsidy (25 percent and 75 percent) and were then raised to 100 percent. Vouchers were valid for one year. This intervention was designed to reduce the opportunity cost of time for mothers, enabling them to consider jobs that they would normally avoid due to an inability to reconcile employment with childcare responsibilities. The employment

services intervention — which was fielded in collaboration with two job matching platforms — connected mothers to a minimum of three open vacancies that were suitable for their skills, repeatedly over three rounds of matching services. In a labor market with weak labor demand and strong search frictions, this intervention ensured that mothers would be connected to employment opportunities that reflected their skills. Childcare subsidies were cross-randomized with employment services to explore potential complementarities: mothers in the voucher-only group may be unable to find an employer due to weak labor demand and search frictions, while mothers in the employment services-only group may be unable to take up proposed jobs due to a lack of affordable child care options.

Our central finding is that neither childcare subsidies nor employment services (nor the combination of the two) appreciably changes mothers' labor market outcomes. The take-up of both interventions is limited. Around half of women offered employment services created a profile on the job-matching platform, but only around a fifth applied for at least one of the suggested jobs. When mothers were offered interviews or jobs they often declined. Only four mothers took a job that resulted from the matching services. Additionally, only 11 percent of households used the child care subsidy vouchers, even after raising subsidies to 100 percent.

Why is take-up limited despite mothers' interest in work and their statements that childcare and labor demand are pressing concerns? First, we provide evidence on the important role played by gender norms. We document that a large share of husbands agree with norms that limit female employment. For example, about half of the husbands do not think that working outside of the home is appropriate; three out of five husbands do not think it is appropriate for a woman to come back home from work after 5pm; and nine out ten husbands believe that men should be prioritized when jobs are scarce. Mothers, on the other hand, are much less likely to agree with most of these norms. Second, we split the sample by whether both husband and wife consider work outside the home appropriate, which is true for roughly half of our sample. We find that progressive couples (where female employment outside of the home is accepted by both partners) are almost 60 percent more likely to apply for a job through the employment intervention. On the other hand, conservative couples — i.e. couples where at least one partner, typically the man, opposes work outside of the home — respond to the employment services treatment by having more disagreements about the appropriateness of employment and, one year after treatment, women in these couples have become more pessimistic about their husbands' views on female employment. In sum, gender norms seem to be a key barrier for at least half of our sample.

Why do we not observe employment gains for the remaining mothers? We provide evidence of a strong mismatch between the non-pecuniary job attributes desired by mothers and the attributes of available jobs. In particular, while about 70 percent of mothers in the employment services intervention were suggested a job that matches their reservation wage, only 11 percent were suggested a job that matches at least three quarters of their desired non-pecuniary characteristics.[1] A regression of applications on job characteristics indicates that the most important predictors of an application are that the job offers social insurance and that the job is in a desired occupation, followed by wages. Crucially, when we recover mother job-attribute preferences using their job-application decisions, we confirm that there are very few jobs that would be acceptable to the mothers in our sample.

The results suggest that, in our context, the potential of economic interventions to raise female employment is curtailed by a combination of restrictive norms and by the scarcity of jobs that offer desired non-pecuniary job attributes. While it is highly plausible that norms influence mothers' views on the accept-

[1]This finding is not driven by the poor selection of job suggestions from employment services staff, since, for the average mother, only 6 percent of the jobs on the platform would offer the desired non-pecuniary attributes.

ability of different jobs, mothers in progressive couples where neither partner opposes female employment also find most available jobs unacceptable. These results suggest that raising the acceptability of available jobs is key to boost female employment. This could be done either through programs that raise the quality of available jobs (e.g., through subsidies or regulation as in Miller et al. (2022)), or through programs that tackle restrictive gender norms, although our results imply that a large change in norms — which surpasses what we observe among the most progressive couples in our sample — may be required to make a difference.

We make three distinct contributions to the literature on female employment in low and middle-income countries. First, we offer the first randomized evaluation of a child care subsidy intervention in a country with a very low female employment rate. A recent meta-analysis of 22 studies on the impacts child care policies on maternal employment in low- and middle-income countries fails to include any study from the MENA region or South Asia (Halim et al., 2023),[2] the two regions with the lowest female employment rates in the world (Verick, 2018). Importantly, while the studies reviewed in Halim et al. (2023) generally do find positive effects on maternal employment — e.g. an experiment randomizing vouchers to low-income mothers in Kenya raised employment by 17.3 percent (Clark et al., 2019) — we fail to find any appreciable employment gains from the same intervention, highlighting how the lessons from the earlier literature may not generalize to low-female-employment settings.

Second, we shed new light on the interaction between gender norms and labor market interventions. In particular, we show that for the most conservative couples, labor supply interventions can actually backfire, leading to more arguments and an entrenching of restrictive norms. This contributes to the recent literature on gender norms and their malleability (Dhar et al., 2022; Sharma, 2022), especially in the context of labor supply decisions (Bursztyn et al., 2020; Lowe and McKelway, 2021). Given that we find that agreement with conservative norms is stronger among husbands, our results are also consistent with discrete choice experiments in Egypt that demonstrate that men's preferences, more so than women's, limit the types of jobs that are acceptable for women to undertake (Majbouri, 2023). Our results on the possibility of backfire call for caution when designing intervention that try to challenge entrenched norms.

Third, we provide new evidence on the important role played by non-pecuniary job attributes in limiting female employment. A recent experimental study from India highlights the high value placed by female workers on attributes such as flexibility, the ability to work from home, and the ability to combine work with childcare (Ho et al., 2023). The preference for some of these attributes seems driven, at least in part, by gender norms (Jalota and Ho, 2023). Our paper adds to this literature — which is based on carefully designed experiments with a single employer — by documenting that, in a large labor market, job attributes that are highly value by mothers are in very short supply. These findings also relate to papers studying how preferences mismatch can contribute to unemployment. For example, Groh et al. (2015) show that a matching intervention for young university graduates in Jordan had no impacts on employment as most jobs on offer failed to meet young people's 'reservation prestige.'

## 2 Experimental Design

We evaluate the impacts of two cross-randomized interventions: (1) childcare subsidies: mothers assigned to this intervention were eligible for a subsidy on the price of a local NGO nursery, for one year and (2) employment services: mothers assigned to this intervention were connected to local employers providing

[2]The meta-analysis includes one study in India which investigates the impacts of child-care policies on absenteeism, not employment.

formal jobs. Mothers were informed at the end of the baseline survey visit: (1) whether and the level of subsidy they were randomized into and (2) whether they were randomized into employment services.

The subsequent sections offer a comprehensive explanation of the initial interventions that were designed and implemented at baseline, as well as the updated interventions introduced after the data collection of the first midline. These updated interventions were designed to address the low take-up rates at first midline (Caria et al., 2022).

## 2.1 Original Interventions

### 2.1.1 Original subsidies

Subsidies cover all children aged 0-5 in the household. The subsidy was fixed per child not per household. The households were within 2km of one of 60 participating nurseries, and at the baseline, the mothers were informed about the nearest nursery's name and the contact information for the nursery and its manager. The 60 nurseries were spread across 24 low-income informal areas (catchment areas) in Greater Cairo (Cairo and Qalyubia governorates, with governorates being the first level of administrative geography in Egypt). Mothers randomized into the subsidy treatment were offered either 25 percent or 75 percent subsidy levels. The subsidy was relative to the median fees across all the nurseries, so the subsidy was a fixed amount (the same fixed amount for all nurseries). The subsidy was 127.5 LE per month for the group assigned to the 75 percent subsidy level and 42.5 LE per month for the group assigned to the 25 percent subsidy level.

The mothers were informed at the end of the baseline household survey if they were randomized into the childcare subsidy intervention. If so, they were given a coupon (voucher) corresponding to the level of support (25 or 75 percent) they were entitled to. If families were interested in using their voucher at a participating nursery, the nursery asked them to fill out a subsidy confirmation form provided by J-PAL. This form included the unique voucher code, the mother's unique national ID, and the signature or fingerprint of the mother. As a way of monitoring the process, the nurseries called the partner umbrella NGO to confirm the names and the IDs of the mothers along with the level of support they were entitled to. The nurseries also took the children's attendance daily and reported this to the partner NGO during monthly visits to ensure that the children who had subsidies were attending regularly. The partner NGO transferred the subsidy funds to each nursery at the end of each month. The research team was involved in supervision throughout all these steps.

In August 2021, mothers who received the vouchers during the pilot (December 2020) and phase 1 (March-May 2021) were called for a quick follow up to remind them about the voucher and encourage them to use it. They were also reminded of the level of discount they were eligible for, the nearest nursery's name and its address, along with that coupon covers all children (aged from 0 to 5 years old) in the household. The households also were asked about their reasons for not sending their children to the nurseries, to increase the take-up (as only 2 percent of the eligible mothers sent their children to the nurseries at that point). In the period between October 2021 and March 2022, another round of quick follow up calls targeted all the eligible mothers, to remind them of all the previous information. For those who did not answer after three attempts, a SMS was sent stating the same information delivered during the call.

### 2.1.2 Original employment services

The initial employment services intervention was in collaboration with an active recruitment platform in Egypt, Forasna (BasharSoft), to offer two rounds of employment services to the mothers. The platform works

with companies that have available job vacancies. Their primary service involves posting these vacancies on their dedicated websites, social media accounts, and job fairs. Individuals seeking employment register on their platforms, attend job fairs, and can directly apply for vacancies through this platform.

The platform also offered more active job-matching services that connect job seekers with companies. This active matching was included in our intervention. The platform had a team of operators responsible for the matching process. To facilitate this matching, prior to randomization, all mothers were asked about their employment status and their preferences for potential jobs in terms of location, occupation, salary, and working hours. Accordingly, vacancies that were likely suitable based on the mother's preferences were selected.

For each mother randomly assigned to receive employment services, our partners searched the pool of vacancies to find suitable matches. In each round of offering employment services, the placement firm contacted the mothers and proposed a minimum of three vacancies that matched their criteria. The operators documented which of the three vacancies the women were interested in and offered to arrange interviews with the firms. The placement firms' operations teams regularly tracked the mothers' responses, interviews, and placements, and reported this data to the research team. The research team conducted checks with at least 5 percent of the mothers to verify the accuracy of the process. If mothers did not accept the job opportunities, the employment services firms proposed up to three other alternative job opportunities and followed up three times for each set of job opportunities.

## 2.2 Updated Interventions

### 2.2.1 Updated subsidies

In the period following the baseline, the research team was tracking subsidy take-up based on administrative data from our partner umbrella NGO. Take-up was low; just prior to the first midline survey (after four months), only 1.4 percent of those with a 25 percent discount had used the voucher and 4.2 percent of those with a 75 percent discount had used the voucher.

The low take-up rates led the research team to update the childcare subsidy intervention. The updated intervention entailed the following;

1. Raised the childcare subsidy level to 100 percent for both the 25 and 75 percent groups.
2. Additionally, the subsidy sample was randomized into the following subgroups:
   (a) 100 percent subsidy only without any additional intervention (25 percent of the mothers), to measure take up when the price is (near) zero.
   (b) 100 percent subsidy + offered a visit to the nearest nursery (25 percent of the mothers), to measure the boost in take-up from offering the option to verify the nursery's quality.
   (c) 100 percent subsidy + time-limited financial incentive to mothers (100 EGP of phone credit to mothers for early nursery enrollment, within 30 days) (25 percent of mothers), to measure the boost in take-up obtained by offering a time-limited financial incentive to join the nursery.
   (d) 100 percent subsidy + time-limited financial incentive to fathers (100 EGP of phone credit to fathers for early nursery enrollment, within 30 days) (25 percent of mothers), to measure whether giving fathers a financial stake in the decision is more effective than giving it to mothers.

The goal of the financial incentives for early sign up was to encourage families to try the nurseries, while recognizing the potential for different effects of incentives on mothers and fathers. The goal of the nursery visits was for parents to be able to assess the quality and safety of the nurseries.

At the end of the first midline survey, the mothers were informed that the coupons were for all children (0-5 years old), as this information was miscommunicated initially.[3] Mothers were also informed about the new 100 percent level of subsidy and any other additional incentives (100 EGP or visits). In this phase, the mothers were allowed to go to another nursery, if they visited the originally assigned one and were not satisfied with it.

#### 2.2.2 Updated employment services

As a consequence of the high inflation rates associated with the exchange rate deterioration in the Egyptian economy, the research team decided to offer a third round of the employment services intervention in March 2023. This third round was expected to have higher take-up rates relative to the previous two rounds, as the mothers would be more likely to accept job vacancies, in order to boost their family income in the face of rapid inflation. This third round was initiated in collaboration with another recruitment platform called Shaghalni. The third round followed the same previously mentioned protocol that was followed by Forasna (see section 2.1.2).

### 2.3 Sample frame and samples

#### 2.3.1 Nurseries

The experiment took place in low-income neighborhoods in Greater Cairo. Within these low-income neighborhoods, nurseries registered with the Ministry of Social Solidarity (MoSS) (and therefore formal nurseries) were identified. The nurseries were offered the opportunity to participate in our voucher experiment (to accept vouchers that subsidize part of the cost of care). The nurseries that agreed to participate were then surveyed to collect capacity data for our child care voucher experiment.[4]

#### 2.3.2 Households

To be eligible for the experiment, households had to have at least one child between the ages of 1 to 5 years old at baseline, be living in the catchment area of the nurseries included in the experiment, and not yet be a client of a nursery. The procedure to identify and recruit the households was the following:

- The catchment area was defined by a 2 km radius around each participating nursery (in cases where there were multiple nurseries with overlapping catchment areas we combined the catchment areas and summed the household sample targets).

- We used population projections (Facebook Connectivity Lab and Center for International Earth Science Information Network - CIESIN - Columbia University, 2020) to identify estimates of the GPS locations

[3] Mothers were initially informed that the vouchers were for only one child per household.

[4] Specifically, we identified nursery capacity in terms of number of slots, the number of occupied slots and then the supply of slots available. We paid specific attention to the COVID-19 health crisis and policy response, which affected the capacity of nurseries. For example, nurseries in early 2021 were only allowed to operate at 50 percent capacity. We defined a local target number as three-quarters of the number of slots locally available. This number was then multiplied by two to determine the entire sample around each catchment area. While only half of households were offered subsidies, and not all took up the coupon, households who did use the subsidies sometimes had multiple children, so registering households at a level below capacity ensured that nursery slots were available locally.

(a "pixel") where children aged 0 to 4 in 2020 lived and the number of such children.

- We randomly sampled from these pixels in each catchment area with a probability proportional to child population.
- The nearest residential building to the centroid of the sampled pixel was visited. If necessary, random sampling was applied to sample a unit within a multi-family building.
- Enumerators checked whether the household living in this unit met the eligibility conditions and if so, explained the study and sought the household's consent to participate. Only one household per building was registered into the study. If the enumerator could not find an eligible mother or the mother did not consent, the enumerator was directed to the second random apartment in the same building, and if not, the enumerator was directed to the second random building and so on.
- Registering households in the catchment area continued until reaching the target (see footnote 4.
- Nurseries and their catchment areas were added until approximately 5,000 eligible women and their households were identified.

#### 2.3.3 Randomization

We randomized both the subsidy and employment services interventions at the level of the individual mother (and thus, the household). We assigned one fourth of the sample to pure control (no subsidy and no employment services), one fourth of the sample to childcare subsidy but no employment services (evenly split between the two levels of the subsidy), one fourth to employment services but no subsidy, and one fourth to both subsidy and employment services (see the appendix, Figure A1).

Randomization of mothers happened according to a stratification rule. Within each catchment area we constructed blocks of 8 individuals who (i) had been interviewed consecutively, (ii) were identical along the following two dimensions: (a) age of youngest child (0-2 years old vs. 3-5 years old) and (b) ever having worked or not.

In the original design, the mothers were randomly assigned as follows;

1. Two individuals to the control group.
2. Two individuals to childcare subsidies (one 25 percent, one 75 percent subsidy) but not employment services.
3. Two individuals to employment services but not childcare subsidies.
4. Two individuals to both employment services and childcare subsidies (one 25 percent, one 75 percent subsidy).

This stratification helped ensure balance in terms of age of youngest child and ever worked, two key variables that potentially shape take up and outcomes.

The updated design focused on maximizing the take-up of the child care subsidies (see the appendix, Figure A2). Mothers assigned to the child care subsidies were offered 100 percent subsidies and were randomly assigned to the following four groups; i) no additional intervention, ii) nursery visit, iii) 100 EGP to mothers for nursery enrollment within 30 days, and iv) 100 EGP to fathers for nursery enrollment within 30 days.

This design enabled us to clearly measure the following;

1. Take up when price is zero
2. The boost in take up obtained by offering the option to verify nursery quality
3. The boost in take-up obtained by offering a time-limited financial incentive to join
4. Whether giving fathers a financial stake in the decision is more effective than giving it to mothers

What we ultimately found, as we demonstrate below, is that the four different subsidies groups did not have differential take-up. We therefore primarily present our results in terms of three treatment arms: (1) 100 percent subsidy only (2) employment services only and (3) 100 percent subsidy and employment services. We refer to this classification as the "general treatment arms."

# 3 Theoretical framework

We propose a stylized framework to describe expected impacts of the interventions. In this framework, a mother participates in the labor market over a single period of time. At the start of the period, the mother receives a job offer with probability $p$, and has to decide whether to accept the job or not. A job is a bundle of pecuniary and non-pecuniary characteristics. For simplicity, we will assume all pecuniary characteristics are summarised in a wage $w$, and all non-pecuniary characteristics are summarised in a job-quality indicator $q$. These characteristics are drawn from a joint distribution $F$. The mother has well-behaved preferences over $w$ and $q$ described by the function $v(w, q; \theta)$. $\theta$ is a vector of characteristics that can shift the mother's preferences, such as gender norms, access to child care, and other factors. If she accepts a job offering wage $w$ and quality $q$, her utility will be $v(w, q; \theta)$. If she does not accept the job, her utility will be equal to her outside option $b$. The mother will thus accept all job offers such that

$$v(w, q; \theta) \geq b \tag{1}$$

Figure 1 represents this simple rule graphically. The solid line captures all combinations of wage and quality that exactly satisfy the job-acceptance condition. Jobs that offer conditions in the north-eastern quadrant, above the acceptance line, will be accepted. Other jobs will be rejected.

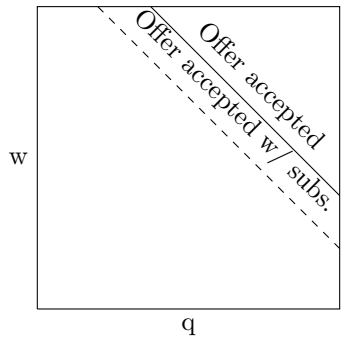
We can derive two key insights from this framework. The first insight clarifies the expected channels of impact of the interventions. In particular, childcare subsidies make it less expensive and more convenient to take-up employment (they act through $\theta$). The job-acceptance line thus moves down (see the dashed line in Figure 1), making it possible for mothers to accept a wider set of jobs. On the other hand, the employment service intervention increases the probability $p$ of a job offer, which makes it more likely that the mother will receive an offer she is willing to accept.

The second insight outlines the conditions under which the interventions increase employment. The key condition is that there is a sufficient number of jobs in the job-acceptance region. If only very few jobs are acceptable, then we would not expect employment services to have a meaningful impact on employment, since treated mothers will mostly be exposed to job offers that they will not accept. Similarly, if most jobs are unattractive (for reasons unrelated to child care), child care subsidies will have limited impacts, as the intervention will not meaningfully shift the job-acceptance line, and the new acceptance region will thus not include many new acceptable opportunities.

Why might most jobs be unattractive? One likely possibility is that gender norms impose a social penalty on working mothers, since taking up employment may generate tensions with one's partner or may

harm mothers' reputation in the community. However, certain non-pecuniary job attributes may also be undesirable for other reasons (Jalota and Ho, 2023). To provide evidence on this point, we (i) measure gender role norms directly by asking specific questions to both mothers and their partners, and (ii) study the heterogeneity of take-up and treatment effects by gender norms.

Figure 1: The decision to accept a job




# 4 Data and empirical strategy

Our study relies on two types of data: household survey data and administrative program data. Household data were collected at four points in time: at baseline (right before offering the interventions (started in December 2020)), first midline (targeted four months after end of baseline), second midline (targeted four months after the end of the first midline) and endline (just after the end of the interventions). Administrative data were received from our partners, Kheir wa Barka (the umbrella nurseries NGO) and the employment services, to track the take-up of our interventions.

## 4.1 Household data

The baseline surveys collected information about the mother, her husband, children, and household. The baseline surveys were implemented face-to-face for mothers and children aged 0-6 (whose development was measured using a variety of tools discussed below). If possible, the husband questionnaire was implemented face-to-face at the same time. However, phone surveys with husbands were used if necessary.

Data collected at baseline included demographics, maternal employment, reservation wages, actual earnings (of the mother and total household earnings), job quality, psychological well-being, and time use. Data also captured the husband's characteristics and employment, the child's development, and household dynamics (including gender norms questions asked of women and their husbands). The baseline data collection was finalized in March 2022 with 5,047 households.[5]

The first midline data were collected approximately four months after the baseline.[6] Data were collected

[5]The baseline data collection was conducted over four separate periods of time due to delays related to COVID-19 restrictions and renewals of security approvals. The pilot phase was implemented in December of 2020 (30 households), followed by a second wave of data collection between March and May of 2021 (624 households), then a third wave between August and October of 2021 (2,803 households) and lastly a fourth wave between mid-November 2021 to first week of March 2022 (1,590 households).

[6]The first midline surveys were gathered over two waves: the first one was over the phone between November and December of 2021, and followed by in person interviews in February 2022 (3,278 households), for those not reached over phone. Then a

primarily over the phone, but if mothers could not be reached via telephone, in-person visits were used. The first midline survey primarily measured the mothers' labor market outcomes, specifically job search behaviors. It also included questions from the baseline survey related to the current labor market outcomes and child care use. Questions covered the take-up of the both the child care subsidies and the employment services. In this round, 85 percent (4,287 households) of the targeted mothers consented, while 8 percent (416 households) were reached but did not consent and 7 percent (344 households) were not reached.

The second midline data were collected four months after the first midline. The second midline measures the same outcomes as in the first midline survey. These surveys were attempted for 4,724 households out of the whole sample (5,047 households). The 323 households dropped from the sample were those who did not have correct phone numbers, or had family problems in the first midline. Out of the targeted sample (4,724 households), the second midline ended up with a response rate of 80 percent (3,798 households), non-consent rate of 11 percent (543 households) and not-reached rate of 8 percent (383 households).[7]

The endline surveys were collected one month after the end of the interventions. The survey included the questions from the baseline, as well as first and second midlines. Additional questions captured dimensions related to household attitudes and bargaining power. Surveys were in person for the endline with mothers and children, as well as husbands when possible. Husbands, if not present at the time of survey, were also contacted by phone. The endline data collection was supposed to start in March 2023, but it was postponed to conduct a third round of employment services. Accordingly, the endline started in mid-May 2023 and ended in the beginning of September 2023. Mothers were only interviewed after ensuring that the third round of employment services were offered to all the entitled sample. This endline round targeted the 3,798 households who responded to the second midline, representing 75 percent of the whole sample (5,047 households). Out of the targeted sample (3,798 households), the endline ended up with a response rate of 86 percent (3,256 households), non-consent rate of 9 percent (348 households) and not-reached rate of 5 percent (194 households) (relative to the second midline).[8]

## 4.2 Administrative Data

### 4.2.1 Nurseries subsidies take-up administrative data

The nurseries subsidies take-up administrative data includes the attendance of the eligible children over time and for each enrolled nursery. The subsidy ever take-up variable is constructed as a dummy variable where one indicates that the eligible mother ever used the subsidy and registered any of her children in any participating nursery. In addition, after the first midline results and based on the low take-up of the childcare subsidies, we decided to collect observational surveys to assess the nurseries' quality. Kheir wa

second wave was gathered between mid-May 2022 and the second week of June 2022 (1,769 households), following up with the last batch of the baseline. The mothers were surveyed in the same chronological order followed in the baseline data collection.

[7]Similar to the first midline round, the second was conducted over two waves; the first wave was conducted over the phone between October and November of 2022 (3,676 households). This wave was followed by a second one in the field in December 2022 (1,048 households), trying to physically follow up with the households that could not be reached over the phone in the first wave. Enumerators were asked to interview those households in person and obtain their new contact information. The data collection over the phone and in the field was done in the same chronological order that was followed in the baseline, to ensure that the participants were surveyed while the treatment was still ongoing.

[8]Among those who attrited, 39 percent moved to different places, among whom 55 percent moved to outside Greater Cairo, therefore outside the project area. Another 35 percent of attritors were available over the phone but were not at their homes during the data collection period, while 21 percent were not reached over the phone nor in their addresses, and 5 percent had family problems that precluded participation. During endline monetary incentives given to the participants were raised, from 10 EGP to 100 EGP and then to 200 EGP in an effort to reduce attrition.

Barka collected these surveys through their monthly visits with 51 nurseries.[9]

#### 4.2.2 Employment services take-up data

The employment services take-up data include two types of information: administrative data gathered by the employment services and administrative data gathered by the research team. Participants assigned to the employment services intervention were contacted to check whether they were interested in applying to job vacancies. If they were potentially interested in vacancies, the employment services created them a profile, recorded their job preferences, and proposed several available vacancies suited to those preferences. If the mother was interested in applying to any of the proposed vacancies, the employment services recorded the vacancy and applied on behalf of the mother. The employment services did not intervene in the recruitment process after this initial application. The rest of the matching process was then a direct interaction between the firm with a vacancy and the mother. On a regular basis, the employment services firms' operations teams tracked the mothers and recorded information regarding the rest of the matching process: firm callback, interview invitation, interview attendance and ultimately any job placement.

The first two rounds of employment services were implemented with our partner Forasna and we call these rounds Forasna 1 and Forasna 2. The third round was implemented by our partner Shaghalni and we call this round Shaghalni 1. Among the rounds of employment services, the third round (Shaghalni 1) was the only one where information regarding the mother's decision on all the proposed vacancies was available. In the first two rounds only the proposed vacancies women applied to were coded, while the refused ones were not.

In addition, the research team collected another set of administrative data from the Forasna recruitment online website. We call this set of vacancies Forasna 3. The data included the characteristics of a random subset of the job vacancies posted daily, after restricting the search filter to Cairo only. A fixed percentage (35 percent) of vacancies was taken randomly, and the objective was to document over 500 job vacancies. The goal was to check to what extent the job characteristics in the labor market fit the mothers preferences reported at baseline. The characteristics of 707 job vacancies were gathered randomly across 38 days. The job characteristics include information about the employers, job address, occupation type, job sector, salary ranges, provision of medical and social insurance and required age, experience and skills.

### 4.3 Empirical strategy

Treatment is defined with household variables that we denote as follows:

- $V$ is equal to one for households who were initially offered a childcare subsidy voucher corresponding to 25 or 75 percent of the median fee, and who were therefore assigned to 100 percent subsidy after the first midline.[10]

- $E$ is equal to one for households who were offered employment services.

The main analysis is based on the estimation of the following intention-to-treat regression equation, in which $y$ denotes the outcome, $S$ denotes the set of randomization strata dummies, and $i$ denotes the household:

[9]Not all 60 nurseries as five nurseries were closed per Ministry of Social Solidarity instructions due to various violations, another two nurseries changed their economic activity, and the last two nurseries refused to continue participating in the project. The mothers who were assigned to these closed nurseries were redirected or reassigned to another nearby nurseries.

[10]We present results primarily for this "general treatment" specification

$$y_i = \alpha + \beta_1 E_i + \beta_2 V_i + \beta_3 E_i * V_i + \sum_l \beta_l X_i^l + \sum_k \delta_k S_i^k + \varepsilon_i$$

This model includes as $X_i^l$ a set of control variables chosen using the post double selection lasso (PDSlasso) method (Belloni et al., 2013) which has the advantage of automatically selecting the relevant subset of variables, avoiding specification search.[11]

Although our baseline sample must live within the eligible catchment areas, neither the sampling nor the assignment is clustered. Therefore, we do not cluster standard errors at the catchment area level (Abadie et al., 2017). We use the simple Eicker-Huber-White robust standard error. In models where we pool more than one wave, we cluster standard errors at the level of the individual respondent.

Hypotheses and methods were delineated in a pre-analysis plan registered with the AEA RCT registry as AEARCTR-0008241. The pre-analysis plan details key outcomes from during the interventions (midlines) and after (endline). The families of outcomes considered during the intervention are (1) aspects of mothers' participation in the labor market, (2) childcare, and (3) reservation wage and reservation job quality. The families of outcomes considered after the interventions include (4) aspects of mothers' participation in the labor market, (5) job quality, (6) well-being, (7) women's empowerment, (8) time use, and (9) children's development. Section D in the appendix details the pre-analysis plan and reports on its implementation. It details the estimation strategy, the hypotheses tested and the way we deal with multiple hypothesis testing. It also details the composition of the nine families of outcomes. All the related estimation results are presented in the appendix. We mainly focus in the paper on aspects of the mother's participation in the labor market during the intervention (family (1)).

## 4.4 Balance and attrition

Table C11 provides baseline descriptive statistics regarding the characteristics of our sample as well as F-tests for balance across treatment groups, using the general treatment assignment (100 percent subsidy). The characteristics across treatment groups confirm the effectiveness of the randomization process in establishing comparability at baseline. For the vast majority of baseline variables, the means exhibit negligible discrepancies across the different treatment groups. There are some small differences in variables, such as "prefers flexible working hours." Although the frequency of substantial differences is similar to what we would expect due to random chance across this many variables, these baseline differences should be kept in mind, particularly for this variable as it is one of our outcomes.

Similarly, in Table C12, for fathers in the study, a balance check was performed to validate the randomization process (for the general treatment arms). The examination of baseline characteristics revealed a very high degree of balance across the control group and the different treatment groups. This balance is, importantly, despite substantial non-response among fathers.

In our research, given that there was appreciable attrition between waves of data collection, a key question is whether attrition was random. Tables C13 (original treatment) and C14 (general treatment) present attrition data at midline 1, midline 2, and the endline for mothers. Across all the tables we do not see large

[11] The following variables were included in the first stage of the double-lasso procedure. First, the baseline value of all variables we consider as outcome in any of our tables. Second, a set of variables corresponding to the marital status, the presence of family members in the close neighborhood, the role of the mother in law in the household decision making, household assets and income, including labor income from the husband, remittances, government transfers, transfers from the family, as well as a set of dummy variables corresponding to the fact that the household $i$ is in the catchment area of nursery $c$.

differential attrition by treatment arm. Mothers who received the 75 percent subsidy were somewhat less likely to attrite, but this was not the case for 25 percent subsidy, and the interaction between 75 percent subsidy and employment services was a small increase in attrition. When using the general treatment arms there is not differential attrition.

# 5 Results

## 5.1 Baseline descriptives: demand for work, child care and gender norms

In this section, we report three key descriptive findings from our baseline survey to motivate our interventions. First, we show that there is substantial self-reported interest in work among mothers in our sample (Figure 2). Only 10.9 percent of mothers were employed at baseline. Among the non-employed mothers, however, 40.1 percent wished to work. Among those mothers who wished to work (the unemployed, broadly defined), 57.2 percent were searching for work. That is, 57.2 percent of those wanting to work had undertaken at least one search activity within the last three months. These responses would suggest that there is widespread interest in work among the unemployed mothers in our sample.

Second, we document that mothers identify lack of affordable childcare options as a important barrier to employment. Specifically, among the non-employed women who wanted to work, 45.8 percent of them reported that child care was the primary barrier to work (Figure 2). Further, mothers are in principle interested in subsidized nurseries. In Table A1 we report mothers' responses, at baseline, to a question as to whether they would send their children to nursery if given different treatments. At full price, 40 percent of mothers said they would send their children to nursery. In contrast, 88 percent of mothers reported that they would send their children if offered a 75 percent discount, suggesting demand for nurseries may be reasonably price sensitive.[12]

[12]These numbers should be interpreted with caution, as actual take-up of the nurseries is very limited and thus mothers' predictions of their own likelihood of sending their children to nurseries at different price points are heavily biased.

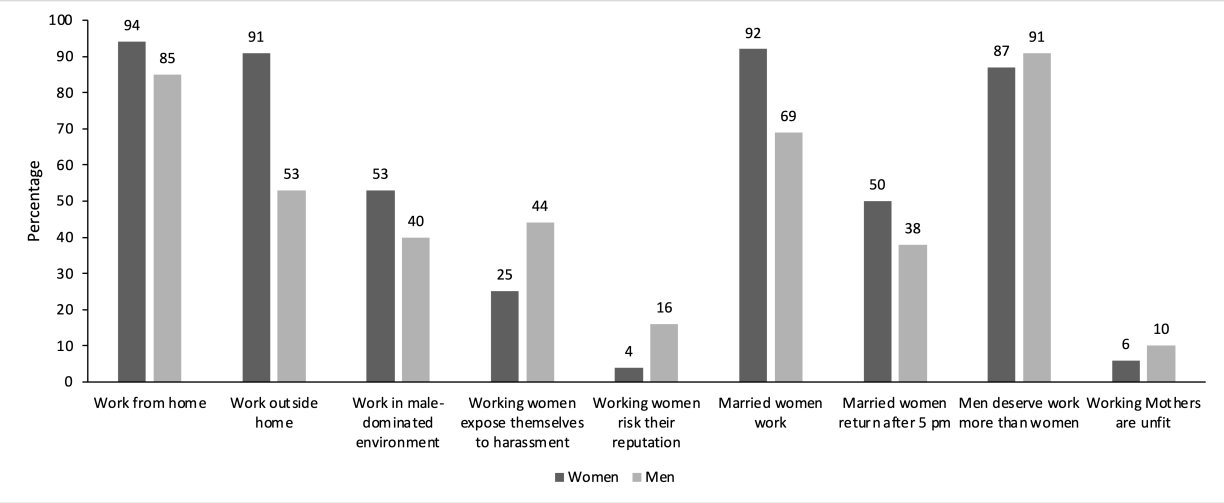
Figure 2: Baseline mother labor market characteristics: Employment rate (percentage), percentage of non-employed who wanted to work, percentage of those wanting to work who have searched for work, percentage of non-employed who wanted to work reporting child care as the primary barrier to work


Source: Authors' calculations based on women's responses (mother's survey) at baseline. Wanted to work question is asked only for non-employed mothers. "Childcare barrier" represents the percentage of non-employed mothers who wanted to work but were not employed due to childcare responsibilities. Job search is the percentage of mothers (among those who wanted to work) who used any of the following search methods during the previous three months: government employment office, private employment office, government assignment competition, filled a job application or sent a resume to an employer, inquired at a work location or contacted an employer, advertised employment inquiry in newspapers, looked at job advertisements in a newspaper or online, applied to a job advertised in newspapers or online, registered at an employment website, asked friends or relatives for help to find a job, contacted contractor, waited at gathering locations for daily workers, sought to start own project (by searching for land, equipment), or arranged to get finance for a private project.

Third, we find that gender norms that limit women's employment (Figure 3) and nursery use (Figure A4) are widespread.[13] However, we also find that many couples do not subscribe to these norms, suggesting that norms may not be a binding constraint for all mothers in our sample. More specifically, we find widespread support for women working from home (94 percent of women and 85 percent of men). Support for work, generally, decreases if the woman is married (92 percent of women and 69 percent of men), or if work is outside the home (91 percent of women and 53 percent of men). The conditions of work are particularly important to whether it is acceptable for women to work. Only 53 percent of men and 40 percent of women think it is acceptable for women to work in a male-dominated environment, and similar shares think it is acceptable for married women to work and return after 5pm. There is, moreover, a strong norm that men deserve work more than women when jobs are scarce (91 percent of men and 87 percent of women agreed or strongly agreed). Finally, we show that social norms may also limit the use of childcare (Figure A4). About a third (35 percent) of women and two-thirds (6 percent) of their husbands think it is not acceptable to leave a child at a nursery so a woman can work. In our sample, when spouses disagreed about whether to send children to nursery (12 percent disagreed), 94 percent of the time the wife was in favor of the nursery and the husband opposed (Table A7).

[13]Gender norms are the shared behavioral 'rules' for what men and women ought to do or believe (Bicchieri, 2006; Cislaghi and Heise, 2016). We measure these norms with a battery of questions at baseline, asked to both mothers and their partners.

Figure 3: Norms about women's work (percentage) at baseline, by respondent sex




Source: Authors' calculations based on women's responses (mother's survey) and men's responses (husband's survey) at baseline. Notes: Percentage responding "yes" to "Do you think it's acceptable for a woman to work from home?" or "Do you think it's acceptable for a woman to work outside home?" or "Is it okay for women to work in an environment with mostly men?" or "Do you think that working women are exposing themselves to harassment?" or "Do you believe that working women are risking their reputation by working?" or "Do you think it's acceptable for a married woman to work?" or "It is okay for a married working woman to return home after 5 PM?". "Men deserve work more than women" & "Working mothers are unfit" represent the percentages who strongly agree or agree with the following sentences: "When jobs are scarce, men should have more right to a job than women" & "A woman who works outside the home cannot be a good mother."

These findings reveal that gender norms are strikingly multi-faceted: the same individual may only find female work acceptable under specific conditions, and their opinion may differ from that of their spouse. To make the analysis of gender norms tractable, in what follows, we will focus on a simply dichotomous variable –"progressive couple" – which captures whether *both* the mother and her husband agree that work outside of the home is acceptable (though they may be uncomfortable with specific forms of work outside the home). About half of the couples in our sample are progressive under this definition.

## 5.2 Take-up

Did mothers take up the employment services and subsidies? Table 1 shows ever take-up of the interventions, based on the administrative data from the nurseries and employment services.[14] Few mothers ever took up the nursery services (11 percent for voucher only, 10 percent for the combination of voucher and employment services). Mothers did often create an account with one of the employment services platforms: 47 percent of mothers did so in the employment services treatment and 49 percent of mothers did so in the combined treatment. While this signals interest in seeking employment, fewer women actually submitted

[14]Table 1 groups together all individuals exposed to the child-care subsidy intervention. The take-up regressions for the different sub-treatments are presented in the Appendix (Table A2 and Table A3)). Table A2 demonstrates the low take-up, particularly of the vouchers, at the first midline, which motivated raising the subsidy to 100 percent. At the first midline, only 2 percent of the 25 percent discount only group had taken up the subsidy and only 4 percent of the 75 percent discount only group. Employment services take-up was moderate at the first midline, 36 percent of the employment services only mothers had created an account and 15 percent applied to a job, motivating additional rounds of employment services. As shown in Table A3, the additional nursery incentives (nursery visit; 100 EGP to mother; 100 EGP to father) did not affect take-up. In the following analysis, we thus group together all individuals in the child care subsidy arm (Table 1), and do not attempt to estimate the specific impacts of the different sub-treatments.

job applications: 21 percent in the employment services only arm and 23 percent in the combined arm. It is worth noting that, conditional on being assigned to the job-placement services group, being assigned to the child-care subsidy group has no impact on opening an account or applying for a job.

Table 1: Ever take-up of interventions (general treatment arms)

| | (1) Take up nursery voucher | (2) Account creation | (3) Job application submission | (4) Joint take up |
|---|---|---|---|---|
| | b/se | b/se | b/se | b/se |
| Employment services | 0.000 | 0.474 | 0.212 | -0.000 |
| | (0.001) | (0.014) | (0.012) | (0.000) |
| 100% discount | 0.112 | -0.001 | -0.000 | -0.000 |
| | (0.009) | (0.001) | (0.001) | (0.000) |
| 100% discount*employment services | -0.010 | 0.018 | 0.014 | 0.026 |
| | (0.012) | (0.020) | (0.016) | (0.004) |
| Strata dummy variables | Yes | Yes | Yes | Yes |
| Mean of control group | 0.000 | 0.000 | 0.000 | 0.000 |
| H1 | 0.940 | 0.000 | 0.000 | 0.570 |
| H2 | 0.000 | 0.636 | 0.748 | 0.512 |
| H3 | 0.425 | 0.363 | 0.380 | 0.000 |
| N | 5047 | 5047 | 5047 | 5047 |

Notes: Column 1 is a binary variable that is equal to one if the mother ever used her voucher and registered her child(ren) in a participating nursery. Column 2 is a binary variable that is equal to one if the mother ever created a profile on the employment services website. Column 3 is a binary variable that is equal to one if the mother ever applied for a job on the employment services website, across the 3 rounds. Column 4 is the joint take up: the interaction term of the ever take up of the nursery voucher and ever applied for a job through the employment services, across the 3 rounds. "H1-H3" rows report the p-value of three hypotheses tests where H1: No impact of the employment services intervention in the absence of the childcare subsidies: $\beta_1$=0, H2: No impact of childcare subsidies in the absence of employment services: $\beta_2$=0, H3: No interaction between childcare subsidies and employment services: $\beta_3$=0. Standard errors (in parentheses) are Eicker-Huber-White standard errors.

## 5.3 Impacts on primary employment outcomes

Did the interventions improve maternal labor market outcomes? In Table 2 we present the impact of the interventions on our primary outcomes: employment, hours of work per week, and weekly labor income. These are based on the pooled midlines. The table also shows the combined employment index, for which we undertake our hypothesis tests, presenting sharpened q-values. Neither the employment services nor subsidies increased employment, hours of work, or the employment index.[15] Main effects are all small (between minus one to minus one half percentage point for employment), while the interaction is a small positive of one percentage point. The sharpened q-values fail to reject the null of no impacts.[16]

[15]There is an increase in monthly labor income with the employment services, but only for those not receiving subsidies, and this does not persist at endline (Table D17).

[16]We undertook heterogeneity analyses following our pre-analysis plan for sub-groups by income tertile (Table D25) and women's gender role attitude tertile (Table D26). No income tertile has appreciable employment of income effects, nor is there a clear pattern by baseline income. Employment services are associated with 4 hours more of work per week in the top income tertile, but given how few matches resulted directly from employment services, that we are undertaking multiple tests, and that there are not employment effects and labor income has a small negative change, this result may be spurious.

Table 2: Employment (primary outcome) effects (pooled midlines)

| | (1) Employment | (2) Hours of work (7 days) | (3) Monthly labor income | (4) Employment index |
|---|---|---|---|---|
| | b/se | b/se | b/se | b/se |
| Employment services | -0.0103 | -0.541 | 52.84 | -0.00381 |
| | (0.00970) | (0.401) | (52.85) | (0.0353) |
| 100% discount | -0.00520 | -0.156 | -20.68 | -0.0189 |
| | (0.0101) | (0.422) | (28.06) | (0.0292) |
| 100% discount*employment services | 0.0113 | 0.557 | -17.23 | 0.0204 |
| | (0.0140) | (0.583) | (62.99) | (0.0465) |
| Midline 2 dummy variable | Yes | Yes | Yes | Yes |
| Control variables | Yes | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes | Yes |
| Mean of control group | 0.102 | 3.757 | 152.896 | 0.000 |
| H1 (p-value) | 0.288 | 0.178 | 0.317 | 0.914 |
| H1 (sharpened q-value) | | | | 0.914 |
| H2 (p-value) | 0.606 | 0.711 | 0.461 | 0.519 |
| H2 (sharpened q-value) | | | | 0.854 |
| H3 (p-value) | 0.420 | 0.339 | 0.785 | 0.661 |
| H3 (sharpened q-value) | | | | 0.854 |
| N of Observations | 8085 | 8085 | 8085 | 8085 |
| N of Indviduals | 4455 | 4455 | 4455 | 4455 |

Notes: Robust standard errors are in parentheses and are adjusted for clusters (individuals). H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

In the appendix, we present further analyses of downstream outcomes planned in our pre-analysis plan. In Table D17 we show endline employment outcomes, where there were also no impacts of the interventions. In Table D18 we show the interventions do not appreciably change any particular type of employment. Furthermore, in Table D19, we demonstrate there are not appreciable changes in endline job quality or net labor income. Table D20 explores transportation costs, other work costs, and childcare costs. There are no impacts of the intervention on any of these cost outcomes.

We further explore any potential impact on welfare outcomes (Table D21), women's empowerment (Table D22), and women's time use (Table D23). There are not impacts on welfare (based on the food insecurity experience scale; WHO-5 wellbeing scale; or an indicator from the WHO-5 for low wellbeing). There are not impacts on empowerment (neither the mobility nor self-efficacy factors). Nor are there changes in time use (child care, leisure, or chore time).

In terms of children's development (Table D24), there is some suggestive evidence for the 100 percent discount, if anything, worsening development outcomes for younger children, based on the CREDI score (by 0.6 points relative to a control mean of 44). This result may, however, be spurious, as the interaction

A similar pattern as for income tertiles pertains for women's gender role attitude tertiles. There are no appreciable labor income or work activity effects nor clear patterns by tertile of gender role attitudes. For hours of work, an increase of 4 hours per week occurs with employment services for the lowest (most unequal) gender tertile, but there is not a clear increase in employment and labor income decreases, so this may, again, be spurious.

suggests this is only for the 100 percent only and not the combined treatment arm. There are not negative effects for the MODEL school readiness factor or the scale combining age groups.

### 5.4 Impacts on mediators

The childcare subsidy intervention was designed to expand the use of childcare services, lower reservation job quality and hence boost employment (see Section 3). The employment services intervention, on the other hand, could also raise reservation job quality, as people can afford to raise their standard in an expanded job search. We thus study whether the interventions impacted these two mediators at midline. Table D15 reports results on childcare, while Table D16 reports results on reservation wages and reservation job quality. As expected, we do not find appreciable changes in the total hours children aged 1-5 spent in different types of care as a result of any of the interventions. Informal and maternal care continued to predominate.

We find some modest changes in reservation job characteristics. In line with our framework, receiving the employment services intervention leads to higher reservation job quality (a two minute shorter maximum commuting time). However, contrary to our framework, the childcare subsidy increases by 3 percentage point the share of women who prefer flexible working hours and prefer jobs with the ability to take paid leave. This suggests that childcare availability may actually raise demand for other types of job amenities — perhaps due to complementarities that arise from the ability to take time off both childcare and employment. This complementarity might also be in line with the short working hours of nurseries (see Figure A3).

## 6 Discussion

In this discussion section, we explore why child care subsidies and employment services did not have their expected impacts. We proceed in three steps. First, we analyse the self-reported reasons behind low take up, and find evidence of gender norms and other factors reducing interest in work. Second, we present direct evidence on whether the existing jobs are acceptable to the mothers in our sample. We do this by (i) comparing the characteristics of jobs available in the job platforms with the desired job attributes reported by mothers, and (ii) by studying mothers' application decisions on the platform. Third, we study whether gender norms are the main driver of low-take up. We find clear evidence that these norms reduce take-up. We also find that there is a meaningful group of couples that do not subscribe to norms that limit employment. This group, however, also suffers from a large mismatched between desired and available job attributes, which ultimately limits the ability of the interventions to raise mothers' employment.

### 6.1 Reported reasons for low take-up

We first analyse mothers' self-reported reasons for low-take up of the employment service intervention, combining administrative and endline data (Table A4). First, we can rule out that low take-up was due to a failure to reach mothers assigned to this treatment: in the endline survey 74 percent of intended beneficiaries reported they received a call.[17] Second, we find evidence consistent with both norms and other constraints among the reasons given for not applying to a job.[18] In the administrative data, 51 percent of the time, declining to apply was due to the location being too far. Additionally, 32 percent were due to unmatched preferences (needing a part time or online job). A further 9 percent were unsuitable working days or hours.

[17] According to the administrative data, 87 percent of intended beneficiaries received a call.

[18] Out of all mothers assigned to the intervention, 22 percent (administrative data) or 30 percent (endline survey) report submitting at least one application.

From the survey responses, the most common reasons were does not want to work (20 percent), husband's refusal (18 percent), unmatched preferences (16 percent) and far location (14 percent). A further 7 percent noted child care was an issue. Third, among mothers who did apply for a job, we find that most job interviews were declined (48 percent according to the administrative data; 85 percent according to the endline data) and a very low the share of job offers were accepted.

We next analyze mothers' self-reported reasons for low-take up of the nursery subsidy intervention, based on endline survey responses (Table A5). The most common reason for not using the subsidy was the nursery being too far away (28 percent even though all were within 2km of an eligible nursery). The next most common reason was not having the coupon (15 percent, despite efforts at midlines to address any such issues). The third most common reason was the child is still too young (14 percent), even though to be eligible, the household included children who were aged 1-5 at baseline and thus 2+ by endline. A variety of other reasons were given, including some use of other school or nursery care. Nurseries being too expensive was not a common reason (3 percent). Some quality concerns were also raised.[19]

## 6.2 Available jobs do not meet mothers' preferences

In this section, we show clear evidence that the job attributes that mothers desire do not match the attributes of the jobs that are offered to them, nor those of the jobs that are generally available on the employment services' platforms. We do this in two ways. First, descriptively, by comparing desired job attributes to the attributes of proposed jobs. Second, by studying whether job attributes predict job application decisions, which allows us to trace out the job-acceptance line captured by equation 1 in our theoretical framework.

### 6.2.1 Comparing desired and available job attributes

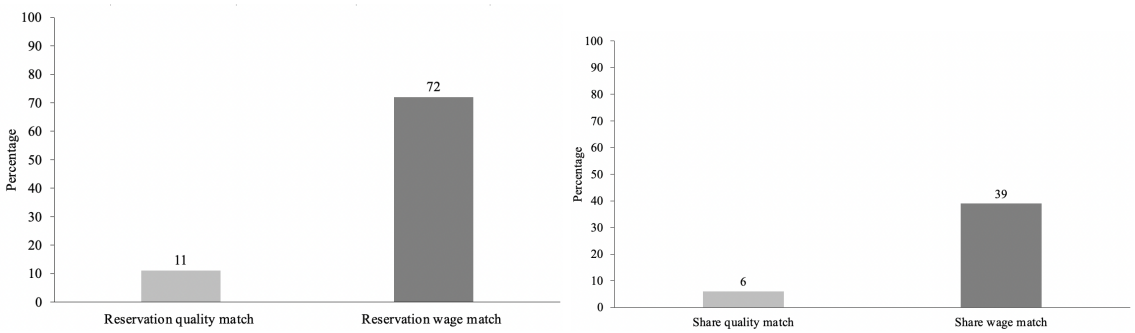
Only a limited fraction of the jobs that mothers were proposed in the employment services interventions matched the job attributes they desired (per the baseline survey). We show this in panel (a) of Figure 4, which reports the percentage of proposed jobs that had the desired pecuniary or non-pecuniary characteristics. Only 11 percent of mothers were proposed at least one job that had their desired non-pecuniary characteristics,[20] and 72 percent of mothers were proposed a job that paid the mother's reservation wage.[21] We find an even greater mismatch with the jobs that are available on the platform. When we consider a random sample of the available jobs on the platform (panel (b) of Figure 4), the average mother would find that only 6 percent of these jobs meet her desired non-pecuniary characteristics and only 39 percent meet her reservation wage.

[19] Table A6 presents nursery quality data and shows mixed patterns of quality. One further challenge with using nurseries to support employment may be whether nurseries' schedules allow for full-time employment. Figure A3 explores the standard start time, end time, and total working hours of nurseries (note that additional afternoon hours were sometimes available for a fee). Most nurseries started reasonably early, at 7am (22 percent) or 8am (78 percent). However, nurseries also closed quite early, ending at 1pm (12 percent), 2 pm (49 percent), or 3pm (37 percent). Only 2 percent had standard hours that went until 5pm. The duration of care was thus most commonly 6 hours (39 percent), followed by 7 hours (27 percent), 5 hours (22 percent), 8 hours (10 percent), and only for 2 percent was care 9 hours. These standard hours may be difficult to combine with full-time employment, especially if mothers are dropping off children and then commuting to and from work.

[20] We conservatively consider a job to meet a mother's non-pecuniary preferences if it satisfies at least three quarters of the mothers' preferred characteristics.

[21] We consider a job to pay a mother's reservation wage if it pays a wage that is at least 95 percent of the the mothers' reservation wage.

Figure 4: Percentage of (a) proposed and (b) available jobs matching mothers' reservation quality or reservation wage preferences




(a) Match with proposed jobs

(b) Match with available jobs

Source: Authors' calculations based on women's responses (mother's survey) at baseline and administrative data provided by the recruitment platforms. Note: This figure restricts the jobs proposed to the third round of proposed vacancies (306 proposed vacancies). Panel (a) reports the percentage of mothers that who at least one job proposal that matches her reservation quality or wage. The reservation quality match is if at least one job proposed meets 3/4 of the mother's reservation quality measures, while the reservation wage match variable is if the offered wage (average between the minimum and maximum salary) is least 95 percent of her reservation wage. The reservation quality measures include job sector, social insurance, commuting time, part time jobs and occupation. Panel (b) reports the percentage of jobs available on the platform that match a mothers' reservation quality or wage measures, averaged across all mothers.

The mismatch in non-pecuniary characteristics is driven by occupation, social insurance and the possibility of part time work. The occupation that mothers found most acceptable was public sector employment (71 percent per baseline survey), but the employment services only offered private sector jobs. The next most acceptable was administrative assistant (55 percent would accept per Table B8)), but only 14 percent of the random vacancies were in this category. The most common random vacancy occupation was services and sales workers (15 percent), which only 16 percent of women were willing to accept at baseline. Further, part-time work was preferred by 80 percent of mothers, but available in less than 1 percent of the jobs on the platform (Table B9). Finally, mothers also typically preferred jobs with social insurance (71 percent), and 80 percent of random vacancies had social insurance.

There is less mismatch in terms of desired wages. Mother's mean monthly reservation wage for private sector work was 2,627 EGP, and the mean wage of applied to and available positions was higher per month (Table B9). However, these averages mask substantial heterogeneity. Figure B5 shows that the reservation wage distribution is bimodal, with a sizable share of women with reservation wages towards the top of the salary ranges on offer, but also a large share of women with reservation wages compatible with the typical jobs on offer.

### 6.2.2 Application decisions and job attributes

We next show that the discrepancy between desired and available job attributes substantially reduces job applications. The stated preferences we analyzed in the previous section thus predict labor market behavior. Most importantly, our estimates suggest that most jobs are outside of the job-acceptance region.

In line with our theoretical framework in Section 3 and equation 1, we model the application decision as a function of the quality of the mother-job match. The decision to apply is determined by the following

equation:

$$A_{i,j} = \alpha + \beta_1 \left(log(w_{i,j}/w_{r,i})\right) + \beta_2 q_{i,j} + \gamma_i + \varepsilon_{i,j} \tag{2}$$

where $i$ indicates the mother, $j$ indicates the vacancy, and $A_{i,j}$ is a binary indicator of the decision of mother $i$ to apply to job $j$. The difference between the wage offered, $w_{i,j}$, and the reservation wage, $w_{r,i}$ captures the surplus of the match. $q_{ij}$ is an index of non-pecuniary match quality. This index is constructed as the sum of five binary indicators capturing whether (1) the job is in the desired occupation, (2) whether the job has the desired social insurance,[22] (3) whether the job has the desired ability to work part-time, (4) whether the job is in the desired sector (private/public), and (5) whether commuting time is lower than the maximum desired commuting time.[23]

We control for the possibility of unobserved heterogeneity at the level of the mother in two alternative ways. First, we introduce a mother fixed effect, $\gamma_i$. This specification fully controls for unobserved mother-level heterogeneity, but precludes us from including variables that do not vary within a mother, such as the treatment group or gender norms.[24] Alternatively (not shown in the equation), as in our main outcomes model, we introduce a set of control variables chosen by the PDSlasso method as well as strata and nursery dummy variables. Here, we can explore the role of covariates that do not vary within a mother, at the cost of more limited control of unobserved heterogeneity. An additional PDSlasso model includes a control for the nursery subsidy treatment.

We also estimate a regression model where we separately estimate the impact of each non-pecuniary job quality dimension:[25]

$$A_{i,j} = \alpha + \beta_1 \left(log(w_{i,j}/w_{r,i})\right) + \sum_{k=2}^{6} \beta_k q_{k,i,j} + \gamma_i + \varepsilon_{i,j} \tag{3}$$

We estimate these models on a sample that includes all three rounds of employment services. As we explain in section 4.2.2, mothers were offered jobs in three separate rounds (Forasna 1, Forasna 2, and Shalgani). For the Shalgani round, we have data on the characteristics of all the jobs proposed to mothers. 278 mothers opened an account with Shalgani and 163 mothers were proposed at least one vacancy. In total, these mothers were proposed 306 vacancies and they applied to 122 vacancies. We use all these 306 proposed vacancies in our analysis. For the Forasna 1 and 2 rounds, on the other hand, we were only able to collect the characteristics of the jobs that mothers applied to. We thus expand the sample by including, for each mother, three additional vacancies randomly drawn from the sample of vacancies to which at least one mother applied. While we are not sure that a given mother was exposed to these three particular vacancies, we expect that the the vacancies they were exposed to had characteristics that on average resembled those of the three randomly drawn vacancies. This enables us to reach an overall sample size of 602 mothers and 3,462 vacancies. We acknowledge that our strategy to include the Forasna 1 and 2 rounds has limitations and we are cautious about the interpretation of the results.

We present the results in Table 3. The first three columns of the table report results of the estimation of the quality index specification (equation 2), while the last three columns report results of the estimation

[22] This indicator takes the value 1 if the job $j$ offers social insurance and the mother $i$ is looking for a job with social insurance or if the job does not offer social insurance and the mother is not looking for a job offering such protection.

[23] For some offers $j$ the characteristic $k$ is missing. To alleviate this problem, we impute the average value of that characteristic among the other offers received by the same mother. More precisely, let $k_{,i,j}$ be the value of characteristic $k$ for job $j$ proposed to mother $i$. Suppose $k_{i,j}$ is missing. We then replace this missing value with $\overline{k}_i$: the average value of $k$ among all the jobs offered to mother $i$ for which $k$ is not missing. We add a control for imputed characteristics in the analysis.

[24] Another issue is that we cannot estimate the fixed effects for mothers who do not apply to any vacancy, or mothers that apply to all vacancies.

[25] The regression also includes dummy variables indicating when the $k$ component has been imputed, see note 23.

of the separate quality dimensions (equation 3). In each set of three columns we first consider a fixed effect regression, while the second and third columns include instead a set of explanatory variables chosen by the PDSlasso method (Belloni et al., 2013; Cilliers et al., 2024).

We find that both wages and non-pecuniary match quality determine the decision to apply for a job. All models report positive, significant, and similar estimates of the effect of wages (relative to reservation wages) on applications. Estimates are very stable, with coefficients on the log ratio of wages to reservation wages ranging from 0.0203 to 0.0289. The effect of the job quality index is also positive and significant in all specifications, ranging from 0.0256 to 0.0443. In line with the theoretical section 3, these estimates imply downward sloping indifference curves: mothers are willing to trade off lower wages for higher non-pecuniary amenities. For example, the estimates in column 1 imply the following indifference curves: Log (proposed salary/reservation wage) $= -0.0443/0.0269 \times$ job quality $+ C$, where $C$ is some constant.

We also find that the different characteristics of the non-pecuniary match quality index have considerable individual predictive power (columns 4 to 6 of Table 3). Almost all coefficients have the expected sign (the exception is commuting in some specifications) and most of them are significant. In the fixed effects model, matching on sector seems to be most predictive of applications (with a coefficient of 0.152), followed by matching on occupation (0.095) and matching on social insurance (0.039). These three effects are significantly different from zero. Occupation and social insurance remain significant and of similar magnitude in the PDSlasso models.

The nursery subsidy does not significantly change application decisions. Our theoretical framework suggested that the subsidy should enable mothers to consider a wider set of jobs. However, in Section 5.4, we were unable to find evidence that the treatment reduced preferences for non-pecuniary amenities (if anything, we found noisy evidence that it led mothers to demand a shorter commute). The results in this section are in line with those previous findings.

Table 3: The impact of job quality and wages on mothers' decision to apply to a vacancy, PDSlasso and fixed effects models

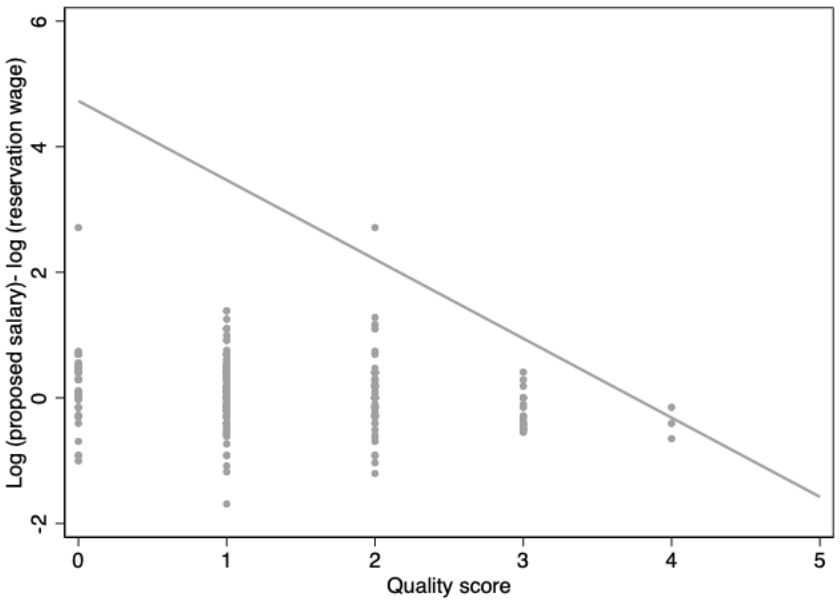
| | Decision to apply | | | | | |
|---|---|---|---|---|---|---|
| | Fixed Effects | Pdslasso | | Fixed Effects | Pdslasso | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Log (proposed salary/reservation wage) | 0.0269 | 0.0203 | 0.0205 | 0.0289 | 0.0218 | 0.0218 |
| | (0.0125) | (0.00955) | (0.00955) | (0.0125) | (0.00948) | (0.00947) |
| Job quality index | 0.0443 | 0.0256 | 0.0259 | | | |
| | (0.00812) | (0.00541) | (0.00541) | | | |
| Job sector | | | | 0.152 | 0.0219 | 0.0222 |
| | | | | (0.0543) | (0.0150) | (0.0150) |
| Social insurance | | | | 0.0392 | 0.0387 | 0.0385 |
| | | | | (0.0114) | (0.00755) | (0.00753) |
| Working hours | | | | 0.00552 | 0.0190 | 0.0189 |
| | | | | (0.0161) | (0.0156) | (0.0155) |
| Commuting duration | | | | 0.00449 | -0.0158 | -0.0152 |
| | | | | (0.0110) | (0.00749) | (0.00752) |
| Occupation | | | | 0.0945 | 0.0996 | 0.100 |
| | | | | (0.0183) | (0.0163) | (0.0163) |
| Nursery subsidy | | | -0.0119 | | | -0.0108 |
| | | | (0.00888) | | | (0.00879) |
| Control variables | | Yes | Yes | | Yes | Yes |
| Nursery dummy variables | | Yes | Yes | | Yes | Yes |
| Strata dummy variables | | Yes | Yes | | Yes | Yes |
| H | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| N | 3462 | 3462 | 3462 | 3462 | 3462 | 3462 |

Notes: The standard errors are clustered at the mother level. The job quality index is the total of a set of compatible job characteristics, which are equal to 1 if the baseline characteristic is matched with the proposed job characteristic, and 0 otherwise. This set includes 5 characteristics: (1) job sector, (2) social insurance, (3) commuting duration, (4) working hours, based on part time job, and (5) occupation, hence the matching score ranges from 0 to 5. "Decision to apply" is the mother's decision about each vacancy. The sample is restricted to the mothers who ever created profiles across all the employment service rounds. The number of observations reflects the number of proposed vacancies. "H" row reports the p-values of a hypothesis test for all the included covariates.

Finally, and most importantly, we show that most jobs lie below the job-acceptance line — the combination of wages and non-pecuniary amenities which individuals require to apply and thus consider a job opportunity. We focus on Shagalni round for this analysis due to data limitations. Figure 5 shows our estimate of the job-acceptance line, along a scatterplot of all available jobs.[26] Only a very small proportion of the proposed offers lie beyond the acceptance line (in the upper right corner). This suggests that the main reason for the low number of applications is the scarcity of jobs meeting the mothers' search criteria.

[26]To draw the acceptance line, we use the estimates in column (1) of Table 3. We model the decision to apply using a latent variable: $A^* = a + b.wage + c.score + u$ with $u$ distributed as a uniform distribution over the interval $[-\lambda, \lambda]$. The women decides to apply ($A = 1$) if $A^* > 0$. Thus $E(A|wage, score) = (\lambda + a + b.wage + c.score)/2\lambda = \alpha + \beta.wage + \gamma.score$. Thus the equation of the line we want to draw is $wage = -a/b - c/b.score = (0.5 - \alpha)/\beta - \gamma/\beta score$. Our model is identified using the data from the three rounds, which provides $\beta$ and $\gamma$. To estimate the intercept we need an estimate of $\alpha$, which is obtained as the average of $A - \widehat{\beta}.wage - \widehat{\gamma}.score$ over the round 3 sample.

Figure 5: Most jobs are outside of the job-acceptance region




Source: Authors' calculations based on women's responses (mother's survey) at baseline and employment services administrative data. Notes: The overall score is the total of a set of compatible job characteristics, which are equal to 1 if the baseline characteristic is matched with the proposed job characteristic, and 0 otherwise. This set includes 5 characteristics;job sector, social insurance, commuting time, part time jobs, and occupation, hence the matching score ranges from 0 to 5. The sample is restricted to the mothers who created profiles in the third round of employment services.

## 6.3 Norms and take-up

In the previous sections, we have shown that very few available jobs are acceptable for the mothers in our sample. In this section, we provide evidence suggesting that (i) gender norms are likely to be an important reason why very few jobs are acceptable (and hence take-up modest and the interventions failed to raise employment) but also that (ii) gender norms are unlikely to be the only reason why very few jobs are acceptable.

Our first piece of evidence on the role of norms shows that take-up is higher among couples with progressive norms about employment. In Table 4, we regress the take-up variables conditional on assignment to the relevant treatment on a set of covariates including gender norms about employment and about nursery use. Models also include whether an index of preference match with random jobs is above or below the median.[27] Column (1) is the take-up of nursery voucher conditional on assignment to the subsidy arm, column (2) is the decision to open an account and (3) making at least one application (2 and 3 are conditional on being offered employment services), and column (4) is joint take-up conditional on being offered the voucher and employment services. Gender norms are proxied by two different progressive couple dummies. "Progressive

[27]This matching index extends the score used in Table 3 to include a component linked to the adequacy of the salary offered relative to the reservation wage. It is thus a variable ranging from 0 to 6, instead of the former which ranged between 0 and 5. For each woman in our sample, we consider the average value of this index over all the offers available in the random sample. This average can therefore be interpreted as a measure of the match between the individual's preferences and the offers available on the market. We distinguish between women in the sample according to whether this average index is above or below the median of the average index for women in the sample.

couple: work outside" means the both agreed that women can work outside home and "Progressive couple: nursery" means that they both agree that it is okay for children to attend nursery so mothers can work.[28]

We find large differences in employment services take-up associated with "progressive couple: work outside." These employment progressive couples are 6.5 percentage points more likely to create an account for employment services (a 15.1 percent increase over a 43 percent sign-up rate for the reference category). In addition, progressive couples are 5.9 percentage points more likely to submit at least one job application (a 39.3 percent increase over the application rate of 15 percent for the reference category). For the group that receives both employment services and childcare subsidies, or the group that receives only the nursery voucher we observe a smaller, insignificant difference between employment progressive and non-progressive couples in terms of nursery voucher or joint take-up. We do not observe any meaningful difference associated with "progressive couple: nursery" and any of the outcomes. The fact that we do not observe any difference for for "progressive couples: nursery" suggests that norms around nurseries are unlikely to be key drivers of the use of nurseries or employment services. Similarly, being offered the nursery voucher did not have any impact on the take-up of employment services, suggesting a low connection between nurseries and labor supply.

Confirming our analysis in section 6.2.2, we observe that the "above matching score median" indicator of the distance between the market and the individual plays an important role in the take-up of employment services. Women with a score above the median are 12 percentage points more likely to create an account with our partner. This represents an increase of 28 percent compared to the reference category in the regression. Similarly, these women are more likely to apply for at least one job by 8.9 percentage points, representing an increase of 59 percent compared to the reference category in the regression. This indicator of proximity between the woman in question and the offers available on the market has no effect on the take-up of nursery vouchers.

[28] See the definition in section 5.1. We had initially planned impact heterogeneity analyses by an overall index of the woman's gender norms, which we present in the appendix. The role of husbands in constraining employment led us to this alternative specification.

Table 4: Heterogeneous impacts on take-up by gender norms

| | (1) Take up nursery voucher | (2) Account creation | (3) Job application submission | (4) Joint take up |
|---|---|---|---|---|
| Above matching score median | 0.0094 | 0.12 | 0.089 | 0.0075 |
| | (0.012) | (0.020) | (0.016) | (0.0091) |
| Progressive couple: work outside | 0.0062 | 0.065 | 0.059 | -0.018 |
| | (0.023) | (0.031) | (0.027) | (0.018) |
| Progressive couple: nursery | 0.0069 | 0.023 | 0.041 | 0.0016 |
| | (0.025) | (0.035) | (0.031) | (0.018) |
| Employment services | -0.011 | | | |
| | (0.012) | | | |
| Nursery subsidy | | 0.013 | 0.011 | |
| | | (0.020) | (0.016) | |
| Constant | 0.14 | 0.43 | 0.15 | 0.041 |
| | (0.018) | (0.026) | (0.021) | (0.013) |
| Strata dummy variables | Yes | Yes | Yes | Yes |
| N | 2530 | 2527 | 2527 | 1275 |

Notes: Column 1 is a binary variable that is equal to one if the mother ever used her voucher and registered her child(ren) in a participating nursery. The regression is performed on mothers assigned the nursery voucher treatment. Column 2 is a binary variable that is equal to one if the mother ever created a profile on the employment services website. Column 3 is a binary variable that is equal to one if the mother ever applied for a job on the employment services website, across the 3 rounds. The regressions in column (2) and (3) are performed on mothers assigned to the employment services treatment; Column 4 is the joint take up (the interaction term of the ever take up of the nursery voucher and ever applied for a job through the employment services), and is performed on mothers assigned to to be offered both the nursery voucher and employment services; The progressive couple variables are constructed using responses to the baseline survey for mothers and husbands. When it is not possible to construct this variable, it is set to zero. The regressions contain indicator variables identifying these observations. Standard errors (in parentheses) are Eicker-Huber-White standard errors.

Our second piece of evidence on the role of norms suggests that the employment service interventions increased intra-household conflict, in particular among non-employment-progressive couples (progressive here refers to agreeing women can work outside the home). Table 5 presents these results, focusing on a set of endline questions designed to capture discussions and disagreements between mothers and their partners. In the control group, discussions about childcare and employment are common (68-69 percent). About one control couple out of ten (8 percent) has a disagreement on childcare, and about one couple out of four (28 percent) has a disagreement on employment. We find that, among non-progressive couples, the employment service intervention increases discussions about employment by 8 percentage points, and disagreements by about 18 percentage points. Employment services treated mothers in non-progressive couples are also 11 percentage points less likely to expect their husbands attitudes towards female work to improve in the future, compared to control mothers in non-progressive couples.[29] Importantly, among progressive couples, treatment is not associated with discussions or disagreements about employments, nor pessimism about partner future attitudes. In sum these results suggest that the interventions generate a significant amount of discussion and conflict in non-progressive households, and that this backfires leading to a perceived worsening of husband's future attitudes.

[29]We further explore whether the interventions may have had any impact on these outcomes by progressive attitudes towards nursery in Table B10.

Table 5: Heterogeneous impacts on discussions and disagreements by employment-related gender norms

| | (1) Childcare discussion with husband | (2) Disagreement about using childcare | (3) Employment discussion with husband | (4) Disagreement about employment | (5) Husband support in future |
|---|---|---|---|---|---|
| | b/se | b/se | b/se | b/se | b/se |
| Employment services | -0.0531 | 0.0246 | 0.0795 | 0.178 | -0.106 |
| | (0.0418) | (0.0273) | (0.0427) | (0.0475) | (0.0455) |
| 100% discount | -0.0232 | 0.0315 | -0.0167 | 0.0955 | -0.0405 |
| | (0.0408) | (0.0273) | (0.0436) | (0.0470) | (0.0454) |
| 100% discount*empl serv | 0.0478 | -0.0121 | -0.00345 | -0.125 | 0.0338 |
| | (0.0599) | (0.0411) | (0.0605) | (0.0683) | (0.0638) |
| Progressive couple | -0.0514 | -0.00747 | 0.0753 | 0.000306 | 0.145 |
| | (0.0444) | (0.0278) | (0.0429) | (0.0466) | (0.0490) |
| Empl serv*prog couple | 0.0502 | -0.0287 | -0.0890 | -0.223 | 0.0906 |
| | (0.0612) | (0.0386) | (0.0583) | (0.0643) | (0.0664) |
| 100% disc*prog couple | 0.0130 | -0.0360 | 0.0256 | -0.0792 | -0.0745 |
| | (0.0618) | (0.0385) | (0.0598) | (0.0657) | (0.0689) |
| 100% disc*empl serv*prog couple | 0.0103 | 0.0233 | -0.0116 | 0.121 | 0.0843 |
| | (0.0869) | (0.0545) | (0.0836) | (0.0916) | (0.0946) |
| Control variables | Yes | Yes | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes | Yes | Yes |
| Mean of control group | 0.687 | 0.082 | 0.681 | 0.279 | 0.428 |
| Mean of control group (Progressive couple==1) | 0.744 | 0.067 | 0.810 | 0.282 | 0.579 |
| H1 | 0.203 | 0.367 | 0.063 | 0.000 | 0.020 |
| H2 | 0.570 | 0.247 | 0.702 | 0.042 | 0.372 |
| H3 | 0.425 | 0.769 | 0.955 | 0.066 | 0.596 |
| H4 | 0.248 | 0.788 | 0.079 | 0.995 | 0.003 |
| H5 | 0.412 | 0.457 | 0.127 | 0.001 | 0.172 |
| H6 | 0.833 | 0.351 | 0.668 | 0.228 | 0.280 |
| H7 | 0.906 | 0.669 | 0.890 | 0.187 | 0.373 |
| N | 1575 | 1575 | 1575 | 1575 | 1575 |

Notes: Eicker-Huber-White standard errors are in parentheses. "H1-H7" rows report the p-value of seven hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, H3: No interaction between childcare subsidies and employment services, H4: No impact of being a progressive couple in the absence of the interventions, H5: No interaction between being a progressive couple and having employment service intervention, H6: No interaction between being a progressive couple and having child care subsidy, and H7: No interaction between being a progressive couple and having child care subsidy along with employment service interventions. Questions for columns 1 & 3 were asked as follows; "Have you discussed the possibility of sending your kid to nursery with your husband?" or "Have you discussed the appropriateness of you taking a job outside of the house with your husband?" Questions in columns 2 & 4 were asked as follows; "If you discussed it, were you two in agreement?" Question in column 5 was asked as follows; "Do you feel your husband will become more supportive of you working outside of the home in the coming years?" Progressive couple means both the mother and her spouse agreed it is okay for women to work outside the house.

These two pieces of evidence suggest that gender norms are likely to be a key barrier for women in our sample. However, these findings also show that there is a large group of women in progressive couples that have high take-up and are not more conflicted or pessimistic about their partners' attitudes as a result of the intervention. For mothers in progressive couples, the discrepancy between desired and available job attributes is somewhat lower than for mothers in non-progressive couples (Figure B6). However, this discrepancy remains very large in absolute terms.

# 7 Conclusions

Only 15 percent of women in Egypt were employed in 2023, with particularly few women with young children employed (Krafft et al., 2024a). Globally, there are three men employed for every two women (International Labour Organization, 2023). Achieving gender equality requires closing these persistent gender gaps in employment. Care responsibilities are a key constraint on women's employment globally, including in MENA (Spierings et al., 2010). For instance, in Egypt, women do 12 hours of unpaid care work for every hour men do (Economic Research Forum and UN Women, 2020). The literature on the determinants of women's employment in MENA highlights the importance of household needs (including care responsibilities) (Spierings et al., 2010). Job opportunities and their suitability are also a crucial driver of women's employment in the region (Assaad et al., 2020; Spierings et al., 2010).

Our experiment attempted to address both child care and job opportunity constraints for married women with nursery-aged children in Egypt. The study randomized child care subsidy vouchers, employment services, and their combination. We examined the impact of these interventions on, primarily, women's employment outcomes, and secondarily, a host of maternal, child, and household outcomes.

Our interventions, however, did not raise the employment rates of treated mothers. Only 11 percent of households offered them ever used the child care subsidies, even after raising the subsidy rate to 100 percent. While around half of women offered employment services created profiles with the job matching service, only around a fifth ever applied to a job. Women often rejected interviews or rejected the jobs they were offered. Job applications only rarely led to hiring (only four hires resulted through the matches). Neither subsidies, employment services, nor their combination led to appreciable changes in women's employment outcomes. Nor were there impacts on secondary outcomes for women, children, or their households.

Gender norms likely reduced the ability of our interventions to raise female employment. Only two-thirds of women and one-third of men thought using nurseries so women can work was acceptable. Likewise, while most men and women were accepting of women working at home, work outside the house, and especially work in male-dominated environments or leading women to return after 5pm was less acceptable. Further, our heterogeneity analysis shows that gender norms limited take-up of employment services and constrained application decisions. However, our findings also indicate that the employment impacts of our interventions were similarly limited among couples that did not subscribe to gender norms that oppose female employment.

A mismatch between desired and available non-pecuniary job attributes further reduced the impacts of our interventions on mothers' employment. We document that mothers' application behavior is strongly influenced by the alignment between the characteristics of job offers and their preferences. The more a job offer meets the criteria defined by mothers, the more likely they are to apply. However, the overlap between the job offers available on the market and the types of jobs sought by mothers is limited. Consistent with this finding, interventions in other conservative contexts offering flexible and work from home jobs to women have proven more successful (Ho et al., 2023; Jalota and Ho, 2023). It is highly plausible that conservative norms

are responsible for some of the observed mismatch between desired and available job attributes, though we lack exogenous variation in norms to fully test this hypothesis. However, the fact that we observe a strong mismatch also among progressive couples suggests that other factors may also be at play.

Adequacy of childcare may pose a final constraint. Nurseries often offered only six hours of care per day, which may be insufficient to undertake full-time employment. While very few mothers in our sample thought this was a major hurdle, indicating that deeper barriers prevented our interventions from raising female employment, short hours of care have likely reduced maternal labor market outcomes in Algeria, Chile, or for primary school in Egypt (Krafft and Lassassi, 2024; Krafft and Li, 2024; Medrano, 2009). This suggests that, once other constraints have been addressed, short hours of care may be the last-mile barrier to delivering an effective child-care intervention in our context.

Our results strongly challenge the commonly-held presumption that childcare interventions can, in isolation, raise female employment in most contexts. This presumption is based on a large body of work using credible identification strategies, which shows positive employment impacts of childcare interventions in low- and middle-income countries (Halim et al., 2023). However, this research largely excludes those countries in the MENA region and in South Asia, which have the lowest rates of female employment. Our results suggest that in these environments, more comprehensive interventions may be needed, in the same way that multi-faceted programs have proven to be particularly effective at raising incomes among the ultra-poor (Banerjee et al., 2015). In particular, programs that simultaneously (i) provide women-friendly employment opportunities, (ii) tackle restrictive gender norms, and (iii) provide adequate, quality child care, may be particularly promising.

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# A Design and Take-Up

Figure A1: Experimental design (original interventions)

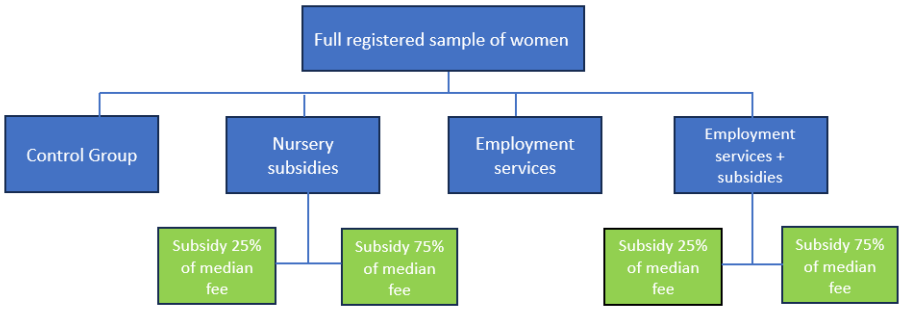



Figure A2: Updated experimental design (updated interventions)

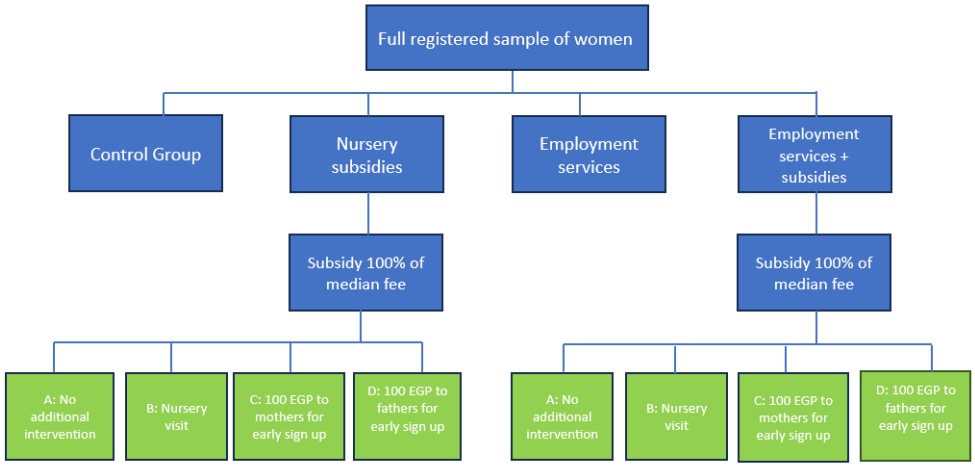



Table A1: Percentage of mothers who would send children to nursery if given different treatments

| | |
|---|---|
| Get a chance to find a job and a 25% discount | 80.3 |
| Get a chance to find a job and a 75% discount | 77.0 |
| 75% discount only | 87.6 |
| 25% discount only | 82.9 |
| At full price if gets a chance to find a job | 68.8 |
| At full price only | 39.9 |

Notes: Authors' calculations based on women's responses (mother's survey) at baseline. The percentages are calculated out of the full sample of 5,047 mothers. The question was asked as follows: "Would you send your child to a nursery if.... "

Table A2: Take-up of interventions before first midline (original treatment arms)

| | (1) Take up nursery voucher | (2) Account creation | (3) Job application submission | (4) Joint take up |
|---|---|---|---|---|
| | b/se | b/se | b/se | b/se |
| Employment services | -0.000 | 0.359 | 0.148 | -0.000 |
| | (0.000) | (0.014) | (0.010) | (0.000) |
| 75% discount | 0.039 | -0.000 | -0.000 | -0.000 |
| | (0.008) | (0.001) | (0.001) | (0.000) |
| 25% discount | 0.018 | -0.000 | -0.000 | 0.000 |
| | (0.005) | (0.001) | (0.001) | (0.000) |
| 75% discount*employment services | 0.005 | 0.039 | 0.017 | 0.013 |
| | (0.011) | (0.024) | (0.018) | (0.004) |
| 25% discount*employment services | -0.003 | -0.024 | 0.002 | 0.005 |
| | (0.007) | (0.023) | (0.017) | (0.003) |
| Strata dummy variables | Yes | Yes | Yes | Yes |
| Mean of control group | 0.000 | 0.000 | 0.000 | 0.000 |
| H1 | 0.812 | 0.000 | 0.000 | 0.771 |
| H2 | 0.000 | 0.969 | 0.957 | 0.735 |
| H3 | 0.020 | 0.944 | 0.918 | 0.444 |
| H4 | 0.819 | 0.059 | 0.614 | 0.004 |
| N | 5047 | 5047 | 5047 | 5047 |

Notes: Column 1 is a binary variable that is equal to one if the mother used her voucher and registered her child(ren) in a participating nursery before the first midline. Column 2 is a binary variable that is equal to one if the mother created a profile on the employment services website before the first midline. Column 3 is a binary variable that is equal to one if the mother applied for a job on the employment services website before the first midline. Column 4 is joint take up: the interaction term of the take up of the nursery voucher and job application submission before the first midline. "H1-H4" rows report the p-value of four hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, H3: No differential impact of childcare subsidies depending on the amount of the voucher, and H4: No interaction between childcare subsidies and employment services. Standard errors (in parentheses) are Eicker-Huber-White standard errors.

Table A3: Ever take-up of interventions (new treatment arms)

| | (1) Take up nursery voucher | (2) Account creation | (3) Job application submission | (4) Joint take up |
|---|---|---|---|---|
| | b/se | b/se | b/se | b/se |
| 100% discount | 0.099 | -0.000 | -0.000 | 0.000 |
| | (0.017) | (0.002) | (0.001) | (0.000) |
| 100% discount+nursery visit | 0.118 | -0.001 | -0.000 | -0.000 |
| | (0.018) | (0.002) | (0.001) | (0.000) |
| 100% discount+100 EGP father's phone | 0.100 | -0.001 | -0.001 | -0.000 |
| | (0.017) | (0.002) | (0.001) | (0.000) |
| 100% discount+100 EGP mother's phone | 0.130 | -0.001 | 0.000 | -0.000 |
| | (0.019) | (0.002) | (0.001) | (0.000) |
| Employment services only | 0.000 | 0.474 | 0.212 | -0.000 |
| | (0.001) | (0.014) | (0.012) | (0.000) |
| 100% discount*employment services | 0.004 | 0.046 | 0.027 | 0.024 |
| | (0.024) | (0.031) | (0.026) | (0.009) |
| 100% discount+nursery visit*employment services | -0.015 | 0.022 | 0.021 | 0.030 |
| | (0.025) | (0.032) | (0.027) | (0.010) |
| 100% discount+100 EGP father's phone*employment services | 0.015 | 0.003 | 0.029 | 0.031 |
| | (0.025) | (0.031) | (0.027) | (0.010) |
| 100% discount+100 EGP mother's phone*employment services | -0.044 | 0.002 | -0.019 | 0.019 |
| | (0.025) | (0.031) | (0.025) | (0.007) |
| Strata dummy variables | Yes | Yes | Yes | Yes |
| Mean of the control group | 0.000 | 0.000 | 0.000 | 0.000 |
| H1: No differential impact between the incentives | 0.583 | 0.993 | 0.962 | 0.665 |
| N | 5047 | 5047 | 5047 | 5047 |

Notes: 100 percent discount, 100 percent discount + nursery visit, 100 percent discount + 100 EGP father's phone and 100 percent discount + 100 EGP mother's phone are mutually exclusive categories (not interactions). Column 1 is a binary variable that is equal to one if the mother ever used her voucher and registered her child(ren) in a participating nursery. Column 2 is a binary variable that is equal to one if the mother ever created a profile on the employment services website, across the three rounds. Column 3 is a binary variable that is equal to one if the mother ever applied for a job on the employment services website, across the three rounds. Column 4 is joint take up: the interaction term of the ever take up of the nursery voucher and ever submitted a job application through the employment services. H1 row reports the p-value of the hypotheses test where H1: No differential impact of the incentives (equal coefficients for 100 percent discount, 100 percent discount + nursery visit, 100 percent discount + 100 EGP father's phone and 100 percent discount + 100 EGP mother's phone). Eicker-Huber-White standard errors in parentheses.

Table A4: Details of employment services take-up based on administrative data and endline data (percentage)

| | **Administrative data** | **Endline data** |
|---|---|---|
| Received a call from emp. services (out of those assigned the intervention) | 86.8 | 73.5 |
| Profile creation rate (out of those assigned the intervention) | 48.3 | - |
| Profile creation rate (out of those who received a call) | 55.7 | - |
| Application submission rate (out of those assigned the intervention) | 22.0 | 29.9 |
| Application submission rate (out of those who received a call) | 25.3 | 40.7 |
| **Reasons for not creating a profile** | | |
| Existing account | 1.2 | - |
| Not looking for a job | 98.8 | - |
| **Reasons for not applying to any of the proposed vacancies (out of those who created a profile but did not apply to any of the proposed vacancies)** | | |
| Does not want to work | - | 20.3 |
| Husband refusal | - | 17.9 |
| Childcare | - | 6.8 |
| Found other job | - | 4.1 |
| Personal reasons | - | 5.5 |
| Employment firm did not offer vacancies and did not follow up | - | 11.6 |
| Far location | 50.7 | 14.1 |
| Unmatched preferences (need part-time job/online job) | 31.6 | 16.0 |
| Unsuitable working days/hours | 8.9 | 2.8 |
| Other reasons (unsuitable age, experience and education level) | 8.8 | 1.0 |
| **Application status (out of those who applied to proposed vacancies)** | | |
| Received a call for an interview | 24.6 | 18.7 |
| Not reached by employer | 40.3 | 81.4 |
| Application got rejected | 4.6 | - |
| Unreachable (recruitment platform couldn't reach applicant to ask about the status) | 30.5 | - |
| **Interview status (out of those who received a call for an interview)** | | |
| Attended and waiting for next steps/No response | 18.1 | 4.4 |
| Interview declined by the applicant | 47.5 | 84.6 |
| Interview pending | 13.8 | - |
| Got hired | 2.5 | 1.1 |
| Attended, position offered, offer declined by applicant | 5.0 | 7.7 |
| Rejected by the employer | 13.1 | 2.2 |

Source: Authors' calculations based on employment services administrative data and endline mothers' survey.

Notes: Other reasons include low salary, lower education level, unsuitable age, student and unsuitable experience. 2,527 mothers were assigned to employment services. Did not receive a call means that the employment services firm could not reach them over phone over the three rounds of the employment services intervention.

Table A5: Details of childcare subsidies take-up and mothers' attitudes towards subsidies (percentage)

| | |
|---|---|
| Used child care subsidy | 18.7 |
| **Reasons for not using child care subsidy (women who did not use subsidy)** | |
| Nursery is far away | 28.4 |
| Do not have the coupon | 14.8 |
| Child is still too young | 13.6 |
| Personal reasons | 5.7 |
| Do not want | 4.3 |
| Child went to school | 4.2 |
| Went to another nursery | 4.2 |
| Child went to school nursery | 3.5 |
| Do not know the address | 3.2 |
| Nurseries fees are expensive | 3.1 |
| Child illness | 3.0 |
| Environment is not safe or clean | 2.5 |
| Nursery refused | 2.0 |
| Husband refused | 1.8 |
| Home address changed | 1.7 |
| The child can catch a disease (Corona) from other kids | 1.2 |
| Other reasons | 2.7 |

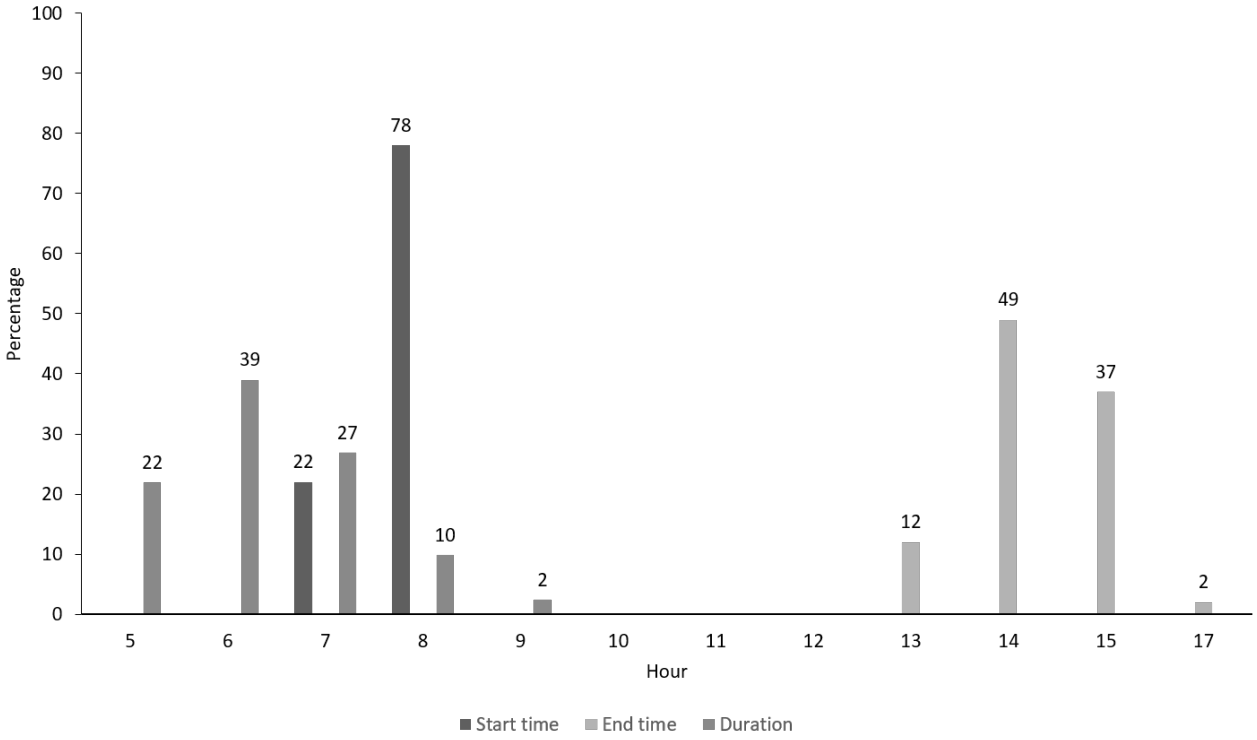
Source: Authors' calculations based on women's responses (mother's survey) at endline.

Table A6: Nursery quality indicators (percentages of nurseries)

| | |
|---|---|
| **Administrative aspects** | |
| Developed nursery | 69 |
| Nursery provides additional afternoon hours | 61 |
| | |
| **Nursery hygiene** | |
| Existence of soap & running water | 100 |
| Children wash their hands after toileting | 83 |
| Separate toilets for children from teachers | 73 |
| Existence of clean running water | 100 |
| Existence of sex-segregated sanitary toilets | 5 |
| Teachers wash their hands after changing diapers | 92 |
| Existence of space for changing diapers | 68 |
| | |
| **Nursery safety** | |
| Safe activity spaces outside the hall but within the nursery | 47 |
| Adequate yard space for play | 54 |
| Broken or uneven floors | 10 |
| Broken tables or chairs | 15 |
| Leaking roof, holes in ceiling | 20 |
| Broken windows or doors | 7 |
| Inadequate ventilation | 17 |
| Door which cannot be locked | 7 |
| Other conditions likely to cause injury to children | 5 |
| Packed/stored objects on the nursery ground | 0 |
| Open pit/holes | 12 |
| Rocky/littered playgrounds | 12 |
| No wall around nursery/nursery near main roads | 7 |
| Secure windows and doors | 95 |
| | |
| **Class characteristics** | |
| Adequate lighting in classes | 86 |
| Safe seats | 88 |
| Safe desks | 79 |
| Risky toys | 2 |
| Teachers work individually with children | 88 |
| Sufficient space for all present children | 83 |
| Sufficient space for all enrolled children | 88 |
| Motor activities | 76 |
| Brush teeth sessions | 41 |
| Activities schedule | 67 |
| Unified uniform | 10 |

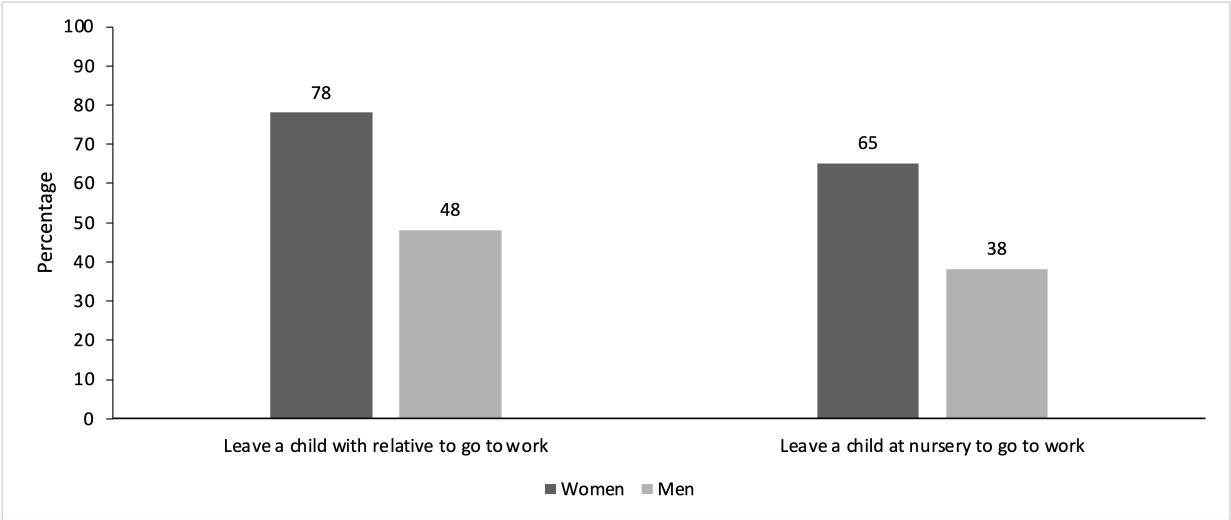
Source: Authors' calculations based on observational tools surveys filled by Kheir wa Barka NGO. Developed nursery refers to the set of nurseries developed under the "Early Childhood Development Program in Egypt," which entails developing nurseries' infrastructure to provide children with a suitable learning environment.

Figure A3: Standard start time, end time and total working hours of nurseries (percentage of nurseries)




Source: Authors' calculations based on nurseries administrative data. Notes: The start and end time and the duration represent the standard times of the nurseries without taking into consideration if the nurseries provide extra nursery hours.

Figure A4: Norms about child care (percentage) by respondent sex at baseline




Source: Authors' calculations based on women's responses (mother's survey) and men's responses (husband's survey) at baseline. Notes: "Leave a child with relative to go to work" & "Leave a child at nursery to go to work" represent the percentages who respond yes to each of the following questions: "Is it okay to leave child under 5 years old with relative to go to work?" or "Is it okay to leave child under 5 years old at nursery to go to work?"

Table A7: Social norms regarding sending children to nursery (percentage)

| | |
|---|---|
| **Husband** | |
| Discussed the possibility of sending the kid to nursery | 72.7 |
| | |
| In agreement (out of those who discussed) | 88.0 |
| *Both were in favor of this idea (out of those who were in agreement)* | 98.8 |
| *Both were not in favor of this idea (out of those who were in agreement)* | 1.2 |
| | |
| In disagreement (out of those who discussed) | 12.0 |
| *Only the wife was in favor of this idea (out of those who were in disagreement)* | 94.4 |
| *Only the husband was in favor of this idea (out of those who were in disagreement)* | 5.6 |
| | |
| **Extended family** | |
| Discussed the possibility of sending the kid to nursery | 36.3 |
| | |
| In agreement | 92.6 |
| *Both were in favor of this idea (out of those who were in agreement)* | 99.5 |
| *Both were not in favor of this idea (out of those who were in agreement)* | 0.5 |
| | |
| In disagreement | 7.4 |
| *Only the wife was in favor of this idea (out of those who were in disagreement)* | 86.2 |
| *Only the extended family was in favor of this idea (out of those who were in disagreement)* | 13.8 |
| | |
| **Friends** | |
| Discussed the appropriateness of sending the kid to nursery | 27.6 |
| Friends were not in favor of the idea (out of those who discussed) | 5.0 |

Source: Authors' calculations based on women's responses (mother's survey) at endline.

# B Mismatch

Table B8: The percentage of mothers willing to accept occupations at baseline ((total sample, progressive couples only, and mother ever created an account), the distribution of occupations proposed to the mothers who ever created account across the three rounds of the employment services (percentage) (total sample or progressive couples only) and the distribution of random vacancies (percentage)

| | Mothers' reservation characteristics | | | Vacancies mothers applied to | | Rand. vac. |
|---|---|---|---|---|---|---|
| **Occupations** | **All sample** | **Progressive couples** | **Ever created accounts** | **All vacancies** | **Progressive couples** | **Random vacancies** |
| Admin assistant | 54.8 | 62.8 | 64.5 | 12.7 | 13.6 | 13.5 |
| Data entry | 47.9 | 62.8 | 56.9 | 1.9 | 2.0 | 0.9 |
| Teacher | 46.2 | 63.4 | 56.9 | 0.3 | 0.7 | 0.4 |
| Customer service | 40.4 | 46.5 | 50.0 | 2.9 | 1.1 | 4.8 |
| Indoor sales | 20.2 | 24.6 | 23.5 | 13.0 | 11.8 | 9.5 |
| Outdoor sales | 4.2 | 4.9 | 4.9 | 1.6 | 0.9 | 11.2 |
| Telemarketing | 33.7 | 39.5 | 40.5 | 2.6 | 2.4 | 5.7 |
| Services & sales workers | 15.5 | 18.2 | 19.7 | 49.3 | 50.0 | 14.7 |
| Industrial worker | 12.0 | 15.2 | 14.7 | 8.5 | 8.1 | 11.5 |
| Human resource personnel | 50.5 | 67.9 | 62.3 | 0.1 | 0 | 1.1 |
| Clerical support workers | 33.0 | 42.4 | 41.7 | 1.9 | 2.6 | 7.4 |
| Agricultural worker | 4.6 | 5.8 | 5.3 | 0 | 0 | 0 |
| Delivery worker | 2.1 | 2.8 | 2.3 | 0 | 0 | 2.6 |
| Driver | 0.6 | 0.5 | 0.3 | 0.1 | 0 | 4.8 |
| Professionals | 0 | 0 | 0 | 2.6 | 3.7 | 8.4 |
| Others | 0 | 0 | 0 | 2.6 | 3.1 | 3.7 |

Source: Authors' calculations based on women's responses (mother's survey) at baseline and administrative data from the employment services. Progressive couples refers to couples where both agree it is okay for women to work outside the house. The mothers' reservation characteristics represent the percentage of the mothers who are willing to accept these occupations. The question was asked: "Would you accept a job as...?". The others category includes painting technicians, translators, debt collectors, pharmacists, and lawyers. The professionals category includes engineers, nurses, doctors and supervisors. The clerical support workers category includes bank tellers, finance and accountant workers. The services and sales workers category includes waiters, chefs, cleaning and housekeeping, cashiers and elder care. These divisions are according to the The International Classification of Occupations (ISCO) of the ILO. The first three columns represent the percentage of mothers willing to accept occupations at baseline ((total sample (5,047 mothers), progressive couples only (1,056 mothers) and mother ever created accounts (1,221 mothers)). The 4th (1,523 jobs) and 5th (459 jobs, progressive couples only) columns represent the percentages of the vacancies that mothers applied to across all the employment service rounds. Finally, the sixth column represents random job vacancies (707 jobs).

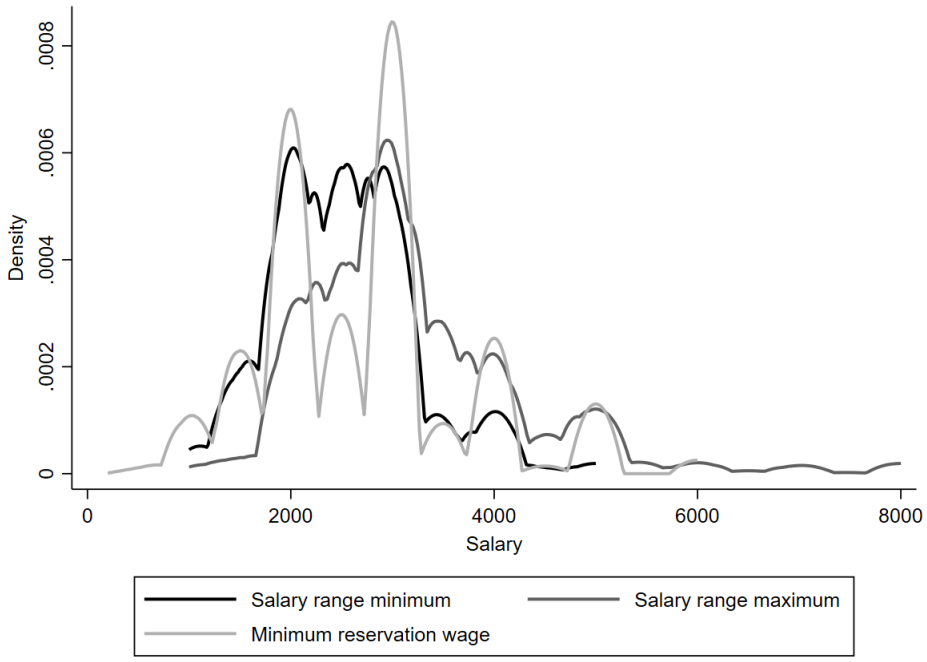
Table B9: Desired working conditions of mothers at baseline compared to characteristics of the occupations proposed to the mothers who ever created account across the three rounds of the employment services (total sample vs. progressive couples only) and the characteristics of random vacancies

| | Mothers' reservation characteristics | | | Vacancies mothers applied to | | | Compatibility | | |
|---|---|---|---|---|---|---|---|---|---|
| | All sample | Progressive couples | Ever created accounts | All sample | Progressive couples | Random vacancies | All sample | Progressive couples | Random vacancies |
| | % | % | % | % | % | % | % | % | % |
| Public job | 85.7 | 90.3 | 87.1 | 0.0 | 0.0 | 0.1 | 12.2 | 8.9 | 13.2 |
| Private job | 14.3 | 9.7 | 12.9 | 99.6 | 99.8 | 99.9 | | | |
| Social insurance (offered) | 70.9 | 75.4 | 71.1 | 69.4 | 73.4 | 79.9 | 49.2 | 53.9 | 70.8 |
| Social insurance (missing) | | | | 1.7 | 0.9 | 19.9 | | | |
| Part-time work | 80.2 | 85.2 | 82.2 | 2.3 | 2.0 | 0.9 | 2.1 | 2.0 | 0.6 |
| | Mean | Mean | Mean | Mean | Mean | Mean | % | % | % |
| Minimum wage in formal private sector | 2,627 | 2,669 | 2,625 | 2,933 | 2,894 | 4,504 | 72.3 | 73.2 | 86.8 |
| Occupation | NA | NA | NA | NA | NA | NA | 37.6 | 35.1 | 24.2 |
| Commute time in minutes | 31.1 | 30.4 | 31.7 | 31.3 | 31.8 | NA | 64.2 | 59.3 | NA |
| Average total score | NA | NA | NA | NA | NA | NA | 2.5 | 2.3 | 1.3 |

Source: Authors' calculations based on women's responses (mother's survey) at baseline, administrative data provided by the recruitment platforms and random job characteristics from Forasna website.

Note: Progressive couples are those where both partners agree that it is okay for women to work outside the house. The first three columns represent the baseline reservations characteristics of mothers ((total sample (5,047 mothers), progressive couples only (1,056 mothers) and mothers who ever created accounts (1,221 mothers)). The 4th (1,523 jobs) and 5th (459 jobs, progressive couples only) columns represent the characteristics of the vacancies that mothers applied to across all the employment service rounds. The sixth column represents random job vacancies in the fourth round (707 jobs). The 7th, 8th and 9th columns represent the compatibility (percentage matched) across the baseline characteristics with either the proposed job vacancies or the random vacancies. Commute time for mothers' preferred jobs reflects the maximum commute time that the mother is willing to travel to go to work. The mean wage of the proposed vacancies is calculated as average wage (average between minimum and maximum salary) and the compatibility is calculated as average wage being at least 95 percent of the reservation wage.

Figure B5: Distribution of minimum and maximum of salary ranges of occupations from employment services and minimum reservation wages for the formal private sector of mothers at baseline



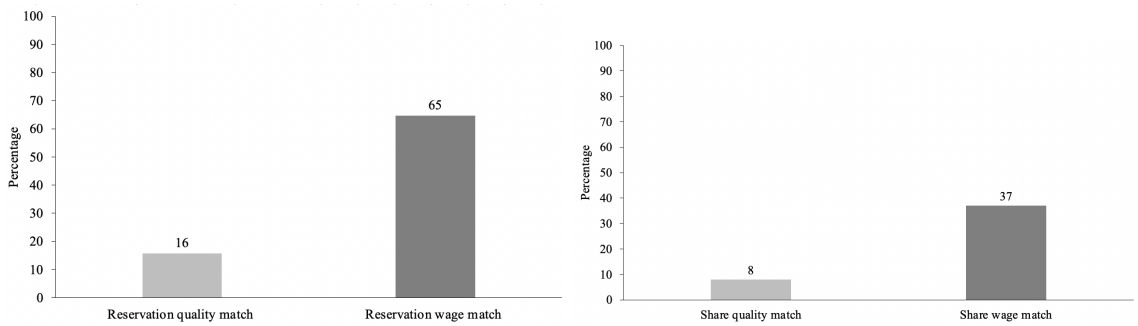

Source: Authors' calculations based on women's responses (mother's survey) at baseline and administrative data provided by the employment services across the 3 rounds. Notes: This figure presents the Epanechnikov kernel densities of the minimum reservation wage for the formal private sector of mothers at baseline, the minimum and the maximum salaries of the proposed vacancies from the employment services.

Table B10: Impact of interventions on childcare and employment discussions with husbands, interactions with couple agreed it was okay for a woman to use nurseries to work

| | (1) Childcare discussion with husband | (2) Disagreement about using childcare | (3) Employment discussion with husband | (4) Disagreement about employment | (5) Husband support in future |
|---|---|---|---|---|---|
| | b/se | b/se | b/se | b/se | b/se |
| Employment services | -0.0561 | 0.000253 | 0.0434 | 0.0749 | -0.0684 |
| | (0.0368) | (0.0226) | (0.0358) | (0.0406) | (0.0396) |
| 100% discount | -0.0429 | 0.00122 | -0.0142 | 0.0707 | -0.0675 |
| | (0.0364) | (0.0233) | (0.0365) | (0.0411) | (0.0403) |
| 100% discount*employment services | 0.0950 | 0.00842 | -0.0169 | -0.123 | 0.0979 |
| | (0.0516) | (0.0332) | (0.0512) | (0.0577) | (0.0563) |
| Agreed to use nurseries | -0.0452 | -0.0369 | 0.0349 | -0.0890 | 0.150 |
| | (0.0528) | (0.0271) | (0.0460) | (0.0505) | (0.0558) |
| Employment services*agreed to use nurseries | 0.0855 | 0.0194 | -0.0687 | -0.0813 | 0.00767 |
| | (0.0736) | (0.0384) | (0.0650) | (0.0707) | (0.0768) |
| 100% discount*agreed to use nurseries | 0.122 | 0.0344 | 0.0161 | -0.0725 | -0.0388 |
| | (0.0726) | (0.0416) | (0.0661) | (0.0704) | (0.0799) |
| 100% discount*employment services*agreed to use nurseries | -0.140 | -0.0200 | 0.0810 | 0.224 | -0.0560 |
| | (0.101) | (0.0586) | (0.0908) | (0.0994) | (0.111) |
| Control variables | Yes | Yes | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes | Yes | Yes |
| Mean of control group | 0.687 | 0.082 | 0.681 | 0.279 | 0.428 |
| Mean of control group (agreed to use nurseries==1) | 0.731 | 0.043 | 0.817 | 0.226 | 0.634 |
| H1 | 0.128 | 0.991 | 0.226 | 0.065 | 0.084 |
| H2 | 0.238 | 0.958 | 0.697 | 0.085 | 0.094 |
| H3 | 0.066 | 0.800 | 0.742 | 0.033 | 0.082 |
| H4 | 0.392 | 0.175 | 0.449 | 0.078 | 0.007 |
| H5 | 0.246 | 0.614 | 0.290 | 0.250 | 0.921 |
| H6 | 0.093 | 0.408 | 0.808 | 0.303 | 0.627 |
| H7 | 0.164 | 0.733 | 0.373 | 0.024 | 0.613 |
| N | 1493 | 1493 | 1493 | 1493 | 1493 |

Notes: Eicker-Huber-White standard errors are in parentheses. "H1-H7" rows report the p-value of seven hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, H3: No interaction between childcare subsidies and employment services, H4: No impact of being a couple that agreed it is acceptable to use nurseries in the absence of the interventions, H5: No interaction between being a couple that agreed it is acceptable to use nurseries and the employment services intervention, H6: No interaction between being a couple that agreed it is acceptable to use nurseries and having child care subsidy, and H7: No interaction between being a couple that agreed it is acceptable to use nurseries and having child care subsidy along with employment service interventions. Questions for columns 1 & 3 were asked as follows; "Have you discussed the possibility of sending your kid to nursery with your husband?" or "Have you discussed the appropriateness of you taking a job outside of the house with your husband?" Questions in columns 2 & 4 were asked as follows; "If you discussed it, were you two in agreement?" Question in column 5 was asked as follows; "Do you feel your husband will become more supportive of you working outside of the home in the coming years?"

Figure B6: Percentage of (a) proposed and (b) available jobs matching mothers' reservation quality or reservation wage preferences, progressive couples only




(a) Match with proposed jobs

(b) Match with available jobs

Source: Authors' calculations based on women's responses (mother's survey) at baseline and administrative data provided by the recruitment platforms. Note: Progressive couple defined as both agree it is acceptable for women to work outside the home. This figure restricts the jobs proposed to the third round of proposed vacancies (93 proposed vacancies for the progressive couples). Panel (a) reports the share of mothers that had at least one job proposal that matches her reservation quality and wage measure. The reservation quality match variable takes 1 if at least one job proposed meets 3/4 of the mother's reservation quality measures, while the reservation wage match variable takes 1 if the offered wage (average between the minimum and maximum salary) is least 95 percent of the reservation wage. The reservation quality measures include job sector, social insurance, commuting time, part time jobs and occupation. Panel (b) reports the percentage of jobs available on the platform that match a mothers' reservation quality and wage measures, averaged across all mothers.

# C Balance at baseline and subsequent attrition

Table C11: Baseline balance test - Mothers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| Married | 0.898 | 0.910 | 0.915 | 0.906 | 0.726 |
| | (0.009) | (0.008) | (0.008) | (0.008) | 0.536 |
| Age | 30.972 | 31.073 | 30.971 | 31.114 | 0.142 |
| | (0.205) | (0.200) | (0.204) | (0.202) | 0.935 |
| Husband absent | 0.138 | 0.121 | 0.117 | 0.131 | 1.056 |
| | (0.010) | (0.009) | (0.009) | (0.009) | 0.366 |
| Presence of family members in the close neighborhood | 0.789 | 0.752 | 0.766 | 0.761 | 1.782 |
| | (0.011) | (0.012) | (0.012) | (0.012) | 0.148 |
| Ever worked | 0.291 | 0.298 | 0.300 | 0.296 | 0.260 |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.854 |
| Less than seconadary | 0.289 | 0.297 | 0.335 | 0.298 | 2.493* |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.058 |
| Secondary | 0.349 | 0.343 | 0.322 | 0.346 | 0.840 |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.472 |
| Post secondary | 0.044 | 0.050 | 0.049 | 0.058 | 0.838 |
| | (0.006) | (0.006) | (0.006) | (0.007) | 0.473 |
| University and above | 0.126 | 0.102 | 0.124 | 0.118 | 1.522 |
| | (0.009) | (0.009) | (0.009) | (0.009) | 0.207 |
| Wage worker | 0.080 | 0.077 | 0.093 | 0.071 | 1.628 |
| | (0.008) | (0.008) | (0.008) | (0.007) | 0.181 |
| Employer | 0.006 | 0.005 | 0.004 | 0.003 | 0.477 |
| | (0.002) | (0.002) | (0.002) | (0.002) | 0.698 |
| Self-employed | 0.020 | 0.027 | 0.018 | 0.024 | 1.012 |
| | (0.004) | (0.005) | (0.004) | (0.004) | 0.386 |
| Unemployed | 0.209 | 0.211 | 0.195 | 0.220 | 0.828 |
| | (0.011) | (0.012) | (0.011) | (0.012) | 0.478 |
| Out of labor force | 0.684 | 0.677 | 0.688 | 0.680 | 0.105 |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.957 |
| Nuclear family | 0.898 | 0.908 | 0.893 | 0.880 | 1.831 |

Table C11: Baseline balance test - Mothers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| | (0.009) | (0.008) | (0.009) | (0.009) | 0.139 |
| Household size | 4.694 | 4.732 | 4.769 | 4.710 | 0.746 |
| | (0.037) | (0.038) | (0.038) | (0.037) | 0.524 |
| Children age 0 | 0.157 | 0.146 | 0.158 | 0.148 | 0.352 |
| | (0.011) | (0.010) | (0.010) | (0.010) | 0.787 |
| Children age 1 | 0.209 | 0.208 | 0.196 | 0.227 | 1.224 |
| | (0.012) | (0.012) | (0.012) | (0.012) | 0.299 |
| Children age 2 | 0.240 | 0.243 | 0.249 | 0.228 | 0.532 |
| | (0.012) | (0.012) | (0.013) | (0.012) | 0.660 |
| Children age 3 | 0.236 | 0.235 | 0.241 | 0.231 | 0.113 |
| | (0.012) | (0.012) | (0.012) | (0.012) | 0.953 |
| Children age 4 | 0.279 | 0.277 | 0.270 | 0.251 | 1.035 |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.376 |
| Children age 5 | 0.241 | 0.237 | 0.233 | 0.271 | 1.841 |
| | (0.013) | (0.012) | (0.012) | (0.013) | 0.137 |
| Children age 6-17 | 1.188 | 1.239 | 1.240 | 1.165 | 1.332 |
| | (0.031) | (0.033) | (0.033) | (0.032) | 0.262 |
| Has assets | 0.069 | 0.087 | 0.085 | 0.069 | 1.758 |
| | (0.007) | (0.008) | (0.008) | (0.007) | 0.153 |
| Pre-COVID household income below poverty line | 0.443 | 0.462 | 0.456 | 0.445 | 0.377 |
| | (0.014) | (0.014) | (0.014) | (0.014) | 0.769 |
| Post-COVID household income below poverty line | 0.483 | 0.501 | 0.511 | 0.485 | 0.892 |
| | (0.014) | (0.014) | (0.014) | (0.014) | 0.444 |
| Household income per month in EGP | 1583.731 | 1587.652 | 1610.702 | 1638.902 | 0.443 |
| | (38.158) | (39.373) | (38.814) | (38.645) | 0.722 |
| Has savings | 0.036 | 0.049 | 0.049 | 0.045 | 1.103 |
| | (0.005) | (0.006) | (0.006) | (0.006) | 0.347 |
| Took formal loan | 0.104 | 0.135 | 0.132 | 0.118 | 2.578* |
| | (0.009) | (0.010) | (0.010) | (0.009) | 0.052 |
| Borrowed from family | 0.474 | 0.462 | 0.470 | 0.461 | 0.180 |

Table C11: Baseline balance test - Mothers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| | (0.014) | (0.014) | (0.014) | (0.014) | 0.910 |
| Participated in ROSCA | 0.315 | 0.319 | 0.318 | 0.302 | 0.374 |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.772 |
| Regularly uses child care | 0.179 | 0.176 | 0.188 | 0.168 | 0.609 |
| | (0.011) | (0.011) | (0.011) | (0.010) | 0.609 |
| Regular child care provider: Mother | 0.120 | 0.120 | 0.122 | 0.118 | 0.038 |
| | (0.009) | (0.009) | (0.009) | (0.009) | 0.990 |
| Regular child care provider: mother-in-law | 0.023 | 0.020 | 0.026 | 0.021 | 0.411 |
| | (0.004) | (0.004) | (0.005) | (0.004) | 0.745 |
| Work activity over the past week | 0.092 | 0.101 | 0.106 | 0.086 | 1.256 |
| | (0.008) | (0.009) | (0.009) | (0.008) | 0.288 |
| Hours of work over the past week | 2.779 | 3.256 | 3.575 | 2.649 | 2.010 |
| | (0.291) | (0.319) | (0.338) | (0.288) | 0.110 |
| Is okay that woman works from home | 0.934 | 0.938 | 0.943 | 0.945 | 0.634 |
| | (0.007) | (0.007) | (0.007) | (0.006) | 0.593 |
| Is okay that woman works outside home | 0.916 | 0.911 | 0.904 | 0.896 | 1.074 |
| | (0.008) | (0.008) | (0.008) | (0.009) | 0.359 |
| Is okay that woman works in male-dominated environment | 0.524 | 0.518 | 0.523 | 0.549 | 1.003 |
| | (0.014) | (0.014) | (0.014) | (0.014) | 0.390 |
| Agree that working women expose themselves to harassment | 0.248 | 0.246 | 0.249 | 0.249 | 0.010 |
| | (0.012) | (0.012) | (0.012) | (0.012) | 0.999 |

Table C11: Baseline balance test - Mothers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| Agree that working women risk their reputation | 0.035 | 0.035 | 0.034 | 0.042 | 0.392 |
| | (0.005) | (0.005) | (0.005) | (0.006) | 0.759 |
| It's acceptable for a married woman to work | 0.911 | 0.918 | 0.918 | 0.918 | 0.187 |
| | (0.008) | (0.008) | (0.008) | (0.008) | 0.905 |
| It is okay for a married woman return after 5PM | 0.474 | 0.514 | 0.483 | 0.492 | 1.470 |
| | (0.014) | (0.014) | (0.014) | (0.014) | 0.220 |
| Agree that mothers working outside home are unfit | 0.064 | 0.058 | 0.067 | 0.064 | 0.332 |
| | (0.007) | (0.007) | (0.007) | (0.007) | 0.802 |
| Agree that when jobs are scarce, men should have more right to a job than women | 0.862 | 0.869 | 0.872 | 0.874 | 0.295 |
| | (0.010) | (0.010) | (0.009) | (0.009) | 0.829 |
| Agree that husband should help in raising children | 0.931 | 0.923 | 0.940 | 0.924 | 1.280 |
| | (0.007) | (0.008) | (0.007) | (0.007) | 0.280 |
| Agree that husband should help with household chores | 0.517 | 0.537 | 0.479 | 0.510 | 2.869** |
| | (0.014) | (0.014) | (0.014) | (0.014) | 0.035 |
| Agree that girls should go to school to prepare for jobs | 0.956 | 0.951 | 0.947 | 0.952 | 0.320 |
| | (0.006) | (0.006) | (0.006) | (0.006) | 0.811 |
| Agree that women should work to be financially independent | 0.751 | 0.750 | 0.754 | 0.732 | 0.658 |

Table C11: Baseline balance test - Mothers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| | (0.012) | (0.012) | (0.012) | (0.012) | 0.578 |
| Agree that married working women are unfit wives | 0.178 | 0.181 | 0.216 | 0.180 | 2.536* |
| | (0.011) | (0.011) | (0.012) | (0.011) | 0.055 |
| Agree that women should have leadership positions | 0.888 | 0.887 | 0.886 | 0.867 | 1.067 |
| | (0.009) | (0.009) | (0.009) | (0.010) | 0.362 |
| Agree that boys and girl should get same schooling | 0.960 | 0.953 | 0.960 | 0.951 | 0.695 |
| | (0.006) | (0.006) | (0.006) | (0.006) | 0.555 |
| Agree that boys and girls should be treated equally | 0.825 | 0.804 | 0.819 | 0.826 | 0.844 |
| | (0.011) | (0.011) | (0.011) | (0.011) | 0.470 |
| Agree that harassment is justified if women are dressed provocatively | 0.674 | 0.689 | 0.671 | 0.649 | 1.621 |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.182 |
| Is it okay to leave a child at nursery to go to work | 0.647 | 0.669 | 0.646 | 0.628 | 1.553 |
| | (0.013) | (0.013) | (0.014) | (0.014) | 0.199 |
| Is it okay to leave a child with relative to go to work | 0.780 | 0.769 | 0.790 | 0.777 | 0.578 |
| | (0.012) | (0.012) | (0.011) | (0.012) | 0.629 |
| Monthly reservation wage in EGP for private sector job | 2643.526 | 2547.843 | 2621.920 | 2567.804 | 1.897 |
| | (34.242) | (32.151) | (31.655) | (31.309) | 0.128 |
| Maximum commuting time in minutes | 31.062 | 30.358 | 31.806 | 30.498 | 1.621 |
| | (0.522) | (0.525) | (0.519) | (0.514) | 0.182 |
| Prefers flexible working hours | 0.115 | 0.084 | 0.099 | 0.111 | 2.860** |
| | (0.009) | (0.008) | (0.008) | (0.009) | 0.036 |

Table C11: Baseline balance test - Mothers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| Prefers ability to take paid leaves | 0.691 | 0.687 | 0.703 | 0.701 | 0.369 |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.775 |
| Prefers childcare facility | 0.697 | 0.691 | 0.708 | 0.722 | 1.116 |
| | (0.013) | (0.013) | (0.013) | (0.013) | 0.341 |
| Prefers part-time work | 0.802 | 0.800 | 0.799 | 0.808 | 0.131 |
| | (0.011) | (0.011) | (0.011) | (0.011) | 0.942 |
| Targeted occupation is a white-collar occupation | 0.510 | 0.522 | 0.509 | 0.515 | 0.156 |
| | (0.014) | (0.014) | (0.014) | (0.014) | 0.926 |
| Number of targeted occupations | 2.836 | 2.891 | 2.857 | 2.931 | 0.380 |
| | (0.070) | (0.071) | (0.070) | (0.070) | 0.768 |

Notes: This table presents the means and standard errors (in parentheses) of the baseline characteristics of the mothers, across all general treatment groups. The sample size is 5,047 households. The 5th column reports the p-value of the F-test for joint orthogonality test. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level. The covariate variable strata is included in all estimation regressions. Amounts are winsorized at the 99th percentile. The standard errors are robust standard errors.

Table C12: Baseline balance test - Fathers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| Age | 36.927 | 37.058 | 36.857 | 36.859 | 0.088 |
| | (0.350) | (0.323) | (0.341) | (0.336) | 0.967 |
| Ever worked | 0.901 | 0.889 | 0.881 | 0.882 | 0.434 |
| | (0.013) | (0.013) | (0.014) | (0.014) | 0.729 |
| Wage worker | 0.642 | 0.653 | 0.642 | 0.645 | 0.066 |
| | (0.021) | (0.020) | (0.021) | (0.020) | 0.978 |
| Employer | 0.058 | 0.056 | 0.048 | 0.061 | 0.341 |
| | (0.010) | (0.010) | (0.009) | (0.010) | 0.796 |
| Self-employed | 0.064 | 0.069 | 0.063 | 0.059 | 0.162 |
| | (0.011) | (0.011) | (0.011) | (0.010) | 0.922 |
| Unemployed | 0.171 | 0.160 | 0.194 | 0.176 | 0.712 |
| | (0.016) | (0.016) | (0.017) | (0.016) | 0.545 |
| Out of labor force | 0.051 | 0.058 | 0.048 | 0.052 | 0.187 |
| | (0.010) | (0.010) | (0.009) | (0.009) | 0.906 |
| Took formal loan | 0.098 | 0.102 | 0.119 | 0.137 | 1.738 |
| | (0.013) | (0.013) | (0.014) | (0.015) | 0.157 |
| Borrowed from family | 0.642 | 0.680 | 0.682 | 0.663 | 0.858 |
| | (0.021) | (0.020) | (0.020) | (0.020) | 0.462 |
| Participated in ROSCA | 0.240 | 0.276 | 0.276 | 0.239 | 1.295 |
| | (0.019) | (0.019) | (0.019) | (0.018) | 0.275 |
| Work activity over the past week | 0.666 | 0.691 | 0.676 | 0.665 | 0.384 |
| | (0.020) | (0.020) | (0.020) | (0.020) | 0.764 |
| Hours of work over the past week | 30.071 | 30.727 | 29.244 | 29.957 | 0.261 |
| | (1.183) | (1.162) | (1.148) | (1.160) | 0.854 |
| Is okay that woman works from home | 0.824 | 0.827 | 0.812 | 0.850 | 1.025 |
| | (0.017) | (0.016) | (0.017) | (0.015) | 0.381 |
| Is okay that woman works outside home | 0.514 | 0.498 | 0.492 | 0.556 | 1.790 |
| | (0.022) | (0.021) | (0.022) | (0.021) | 0.147 |

Table C12: Baseline balance test - Fathers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| Is okay that woman works in male-dominated environment | 0.383 | 0.420 | 0.382 | 0.358 | 1.543 |
| | (0.021) | (0.021) | (0.021) | (0.020) | 0.201 |
| Agree that working women expose themselves to harassment | 0.418 | 0.400 | 0.441 | 0.403 | 0.762 |
| | (0.021) | (0.021) | (0.021) | (0.021) | 0.515 |
| Agree that working women risk their reputation | 0.141 | 0.153 | 0.177 | 0.143 | 1.027 |
| | (0.015) | (0.015) | (0.016) | (0.015) | 0.380 |
| It's acceptable for a married woman to work | 0.651 | 0.645 | 0.644 | 0.717 | 3.192** |
| | (0.021) | (0.020) | (0.021) | (0.019) | 0.023 |
| It is okay for a married woman return after 5PM | 0.349 | 0.349 | 0.367 | 0.408 | 1.841 |
| | (0.021) | (0.020) | (0.021) | (0.021) | 0.138 |
| Agree that mothers working outside home are unfit | 0.075 | 0.105 | 0.114 | 0.094 | 1.838 |
| | (0.011) | (0.013) | (0.014) | (0.012) | 0.138 |
| Agree that when jobs are scarce, men should have more right to a job than women | 0.884 | 0.907 | 0.886 | 0.877 | 1.034 |
| | (0.014) | (0.012) | (0.014) | (0.014) | 0.376 |
| Agree that husband should help in raising children | 0.902 | 0.911 | 0.912 | 0.911 | 0.128 |
| | (0.013) | (0.012) | (0.012) | (0.012) | 0.944 |
| Agree that husband should help with household chores | 0.670 | 0.695 | 0.687 | 0.697 | 0.385 |

Table C12: Baseline balance test - Fathers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| | (0.020) | (0.020) | (0.020) | (0.019) | 0.764 |
| Agree that girls should go to school to prepare for jobs | 0.865 | 0.893 | 0.862 | 0.879 | 1.024 |
| | (0.015) | (0.013) | (0.015) | (0.014) | 0.381 |
| Agree that women should work to be financially independent | 0.274 | 0.262 | 0.236 | 0.257 | 0.682 |
| | (0.019) | (0.019) | (0.018) | (0.018) | 0.563 |
| Agree that married working women are unfit wives | 0.250 | 0.307 | 0.279 | 0.269 | 1.450 |
| | (0.019) | (0.020) | (0.019) | (0.019) | 0.226 |
| Agree that women should have leadership positions | 0.732 | 0.753 | 0.750 | 0.749 | 0.306 |
| | (0.019) | (0.018) | (0.019) | (0.018) | 0.821 |
| Agree that boys and girl should get same schooling | 0.919 | 0.945 | 0.929 | 0.930 | 1.041 |
| | (0.012) | (0.010) | (0.011) | (0.011) | 0.373 |
| Agree that boys and girls should be treated equally | 0.685 | 0.715 | 0.709 | 0.713 | 0.530 |
| | (0.020) | (0.019) | (0.020) | (0.019) | 0.662 |
| Agree that harassment is justified if women are dressed provocatively | 0.672 | 0.655 | 0.693 | 0.677 | 0.585 |
| | (0.020) | (0.020) | (0.020) | (0.020) | 0.625 |
| Is it okay to leave a child at nursery to go to work | 0.326 | 0.373 | 0.359 | 0.403 | 2.477* |
| | (0.020) | (0.021) | (0.021) | (0.021) | 0.060 |
| Is it okay to leave a child with relative to go to work | 0.467 | 0.444 | 0.449 | 0.467 | 0.287 |
| | (0.022) | (0.021) | (0.021) | (0.021) | 0.835 |

Table C12: Baseline balance test - Fathers (general treatment)

| | (1) Control group Mean/(SE) | (2) Employment services Mean/(SE) | (3) 100% discount Mean/(SE) | (4) 100% discount + emp. services Mean/(SE) | F-test for balance across all groups F-stat/P-value |
|---|---|---|---|---|---|
| Monthly reservation wage in EGP for private sector job | 3074.859 | 3076.000 | 3143.777 | 2965.597 | 0.575 |
| | (96.433) | (90.469) | (98.205) | (95.025) | 0.632 |
| Maximum commuting time in minutes | 46.450 | 46.467 | 50.659 | 46.784 | 1.592 |
| | (1.599) | (1.589) | (1.660) | (1.612) | 0.189 |
| Prefers flexible working hours | 0.066 | 0.044 | 0.058 | 0.062 | 1.090 |
| | (0.011) | (0.009) | (0.010) | (0.010) | 0.352 |
| Prefers ability to take paid leaves | 0.195 | 0.191 | 0.218 | 0.230 | 1.137 |
| | (0.017) | (0.017) | (0.018) | (0.018) | 0.333 |
| Prefers childcare facility | 0.101 | 0.109 | 0.108 | 0.123 | 0.458 |
| | (0.013) | (0.013) | (0.013) | (0.014) | 0.712 |
| Prefers part-time work | 0.109 | 0.149 | 0.142 | 0.123 | 1.570 |
| | (0.014) | (0.015) | (0.015) | (0.014) | 0.195 |

Notes: This table presents the means and standard errors (in parentheses) of the baseline characteristics of the fathers, across all general treatment groups. The sample size is 2,181 fathers. The 5th column reports the p-value of the F-test for joint orthogonality test. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level. The covariate variable strata is included in all estimation regressions. Amounts are winsorized at the 99th percentile. The standard errors are robust standard errors.

Table C13: Mother attrition at first midline, second midline, and endline (original treatment)

| | (1) Attrition at midline 1 | (2) Attrition at midline 2 | (3) Attrition at endline |
|---|---|---|---|
| | b/se | b/se | b/se |
| Employment services | -0.005 | 0.001 | 0.000 |
| | (0.014) | (0.017) | (0.019) |
| 75% discount | -0.027 | -0.047 | -0.043 |
| | (0.017) | (0.018) | (0.024) |
| 25% discount | 0.013 | -0.011 | 0.016 |
| | (0.018) | (0.021) | (0.024) |
| 75% discount*employment services | 0.011 | 0.021 | 0.017 |
| | (0.024) | (0.029) | (0.033) |
| 25% discount*employment services | 0.010 | -0.010 | -0.023 |
| | (0.025) | (0.030) | (0.033) |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group | 0.155 | 0.261 | 0.363 |
| N | 5047 | 5047 | 5047 |

Notes: Columns 1, 2, and 3 are binary variables that are equal to 1 if the mother attrited at first midline, second midline, or endline respectively. Coefficients come from an ordinary least squares regression that predicts mothers' attrition using treatment arms. Eicker-Huber-White standard errors are in parentheses.

Table C14: Mother attrition at first midline, second midline, and endline (general treatment)

| | (1) Attrition at midline 1 | (2) Attrition at midline 2 | (3) Attrition at endline |
|---|---|---|---|
| | b/se | b/se | b/se |
| Employment services | -0.005 | 0.001 | 0.000 |
| | (0.014) | (0.017) | (0.019) |
| 100% discount | -0.007 | -0.029 | -0.013 |
| | (0.014) | (0.017) | (0.019) |
| 100% discount*employment services | 0.011 | 0.006 | -0.003 |
| | (0.020) | (0.024) | (0.018) |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group | 0.155 | 0.261 | 0.363 |
| N | 5047 | 5047 | 5047 |

Notes: Column 1, 2, and 3 are binary variables that are equal to 1 if the mother attrited at first midline, second midline, or endline respectively. Coefficients come from an ordinary least squares regression that predicts mothers' attrition using treatment arms. Standard errors are Eicker-Huber-White standard errors.

# D Our pre-analysis plan and its implementation

Hypotheses and methods were delineated in a pre-analysis plan registered with the AEA RCT registry as AEARCTR-0008241. We defined several nine family of outcomes and the way the corresponding variables are measured. The key outcomes from during the interventions (at midline) are (1) mothers' participation in the labor market, (2) childcare, and (3) reservation wage and reservation job quality. Endline outcomes (after the interventions) we examine are (4) mothers' participation in the labor market, (5) job quality, (6) well-being, (7) women's empowerment, (8) time use, and (9) children's development. There are several hypotheses we test with equation 2 :

H1: No impact of the employment services intervention in the absence of the childcare subsidies: $\beta_1 = 0$.

H2: No impact of childcare subsidies in the absence of employment services: $\beta_2 = 0$.

H3: No interaction between childcare subsidies and employment services: $\beta_3 = 0$.

Our analysis is performed over many different outcome variables (discussed below) and our basic specifications also involve several treatments. Multiple hypothesis testing is therefore an important issue. To deal with it we have (i) specified a primary set of hypotheses (H1-H3 above) and outcomes (below), and (ii) we offer corrections for multiple comparisons. We have created an index variable for our primary family of outcomes (Family 1, see below). We run three tests on this index (H1, H2, H3). For each test, we report both standard p-values and sharpened q-values that account for the false-discovery rate. For all other families and outcomes we report coefficients, standard errors and the results of hypothesis tests.

## D.1 Primary outcomes: Mothers

Our main hypothesis is that both childcare subsidies and employment services improve mothers' labor market outcomes.

$H_a$ The subsidies, employment services and their combination will increase mothers' employment rates, hours, and (unconditional) earnings.

To study this hypothesis, we investigate impacts on the following outcomes:

1. Work activity: Dummy variable for the mother spending at least one hour on remunerated work in the past 7 days. Work can include formal wage employment (with social insurance), informal wage employment (without social insurance), or self-employment.
2. Hours of work: Total number of hours of remunerated work over the past 7 days that the mother spent on work.
3. Labor income: Monthly total income earned by the mother.

⇒ **Family 1** Our first family of primary hypotheses comprises outcomes (1)-(3). We measure each outcome at each midline interview, and we pool both midline observations in the same regression (see Table 2).

## D.2 Mechanisms

### D.2.1 Childcare

Our next family of hypotheses concerns the mechanisms behind the interventions. In particular, we hypothesize that, when offered childcare subsidies, households adjust the organization of childcare, using more nursery care and less family care.

$H_b$ Treated households will use more nursery care and less family care

We test this hypothesis by studying impacts on the following outcomes:

1. Total hours children aged 1-5 spend in NGO nursery
2. Total hours children aged 1-5 spend in other formal care
3. Total hours children aged 1-5 spend in informal care (home nursery, neighbor, close family member etc.)
4. Total hours children aged 1-5 spend under father's care
5. Total hours children aged 1-5 spend under mother's care

$\Rightarrow$ **Family 2** Our second family of hypothesis comprises outcomes (1)-(5). These outcomes are measured at both midlines. We pool observations from both midlines in the regressions (see Table D15)

Table D15: Child care outcomes (pooled midlines)

| | Total hours children aged 1-5 spend per week in | | | | |
|---|---|---|---|---|---|
| | (1) NGO nursery | (2) Other formal care | (3) Informal care | (4) Father's care | (5) Mother's care |
| | b/se | b/se | b/se | b/se | b/se |
| Employment services | -0.133 | 0.457 | -1.436 | -0.0937 | -1.575 |
| | (0.189) | (0.263) | (0.887) | (0.197) | (0.947) |
| 100% discount | -0.164 | 0.380 | 0.651 | 0.112 | -1.052 |
| | (0.187) | (0.258) | (1.119) | (0.197) | (0.976) |
| 100% discount*employment services | 0.336 | -0.753 | -0.858 | 0.204 | 1.664 |
| | (0.274) | (0.367) | (1.344) | (0.294) | (1.318) |
| Midline 2 Dummy Variable | Yes | Yes | Yes | Yes | Yes |
| Control variables | Yes | Yes | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes | Yes | Yes |
| Mean of control group | 1.375 | 2.093 | 8.650 | 0.781 | 6.852 |
| H1 | 0.482 | 0.082 | 0.105 | 0.634 | 0.096 |
| H2 | 0.381 | 0.141 | 0.561 | 0.571 | 0.281 |
| H3 | 0.220 | 0.040 | 0.523 | 0.488 | 0.207 |
| N of Observations | 8085 | 8085 | 8085 | 8085 | 3798 |
| N of Indviduals | 4455 | 4455 | 4455 | 4455 | 3798 |

Notes: Robust standard errors are in parentheses and are adjusted for clusters. "H1-H3" rows report the p-value of hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services. The total hours children aged between 1 and 5 years spend under mother's care variable was only asked in the second midline.

### D.2.2 Reservation wages and reservation job quality

Our next family of hypotheses focuses on a second set of mechanisms related to the types of jobs that treated mothers will accept.

$H_c$ Childcare subsidies, employment services, and their combination will lead mothers to change reservation job quality and reservation wages.

We study this hypothesis by estimating impacts on the following outcomes

1. Reservation wage for private sector job
2. Reservation job quality 1: maximum commuting time
3. Reservation job quality 2: prefers flexible working hours
4. Reservation job quality 3: prefers ability to take time off work at short notice (paid leaves)
5. Reservation job quality 4: prefers childcare facility at place of work
6. Reservation job quality 5: prefers part-time work

7. Targeted occupation is a white-collar occupation[30]

8. Number of targeted occupations[31]

⇒ **Family 3** Our third family of hypotheses comprises outcomes (1)-(8). These outcomes are measured only at the first midline interview (see Table D16)

Table D16: Reservation wages and job quality (midline 1)

| | (1) Private sector job reservation wage | (2) Max. commuting time | (3) Preferred flexible working hours | (4) Preferred ability to take paid leaves | (5) Preferred child-care facility | (6) Preferred part-time work | (7) Targeted white-collar occupation | (8) Number of targeted occupations |
|---|---|---|---|---|---|---|---|---|
| | b/se | b/se | b/se | b/se | b/se | b/se | b/se | b/se |
| Employment services | -14.16 | -2.161 | 0.00659 | -0.00974 | -0.00384 | 0.00530 | -0.0383 | -0.143 |
| | (49.68) | (0.829) | (0.0110) | (0.0183) | (0.0188) | (0.0179) | (0.0204) | (0.129) |
| 100% discount | 28.49 | -0.337 | 0.0304 | 0.0411 | 0.00932 | -0.000298 | -0.0479 | 0.0367 |
| | (52.51) | (0.867) | (0.0116) | (0.0180) | (0.0187) | (0.0177) | (0.0204) | (0.128) |
| 100% discount*employment services | 89.10 | 1.858 | -0.0176 | -0.00453 | -0.00573 | -0.0308 | 0.0432 | -0.0903 |
| | (72.53) | (1.174) | (0.0165) | (0.0257) | (0.0267) | (0.0256) | (0.0288) | (0.184) |
| Control variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Mean of control group | 2751.282 | 33.769 | 0.068 | 0.575 | 0.594 | 0.706 | 0.475 | 4.501 |
| H1 | 0.776 | 0.009 | 0.548 | 0.595 | 0.838 | 0.768 | 0.061 | 0.268 |
| H2 | 0.587 | 0.698 | 0.009 | 0.022 | 0.618 | 0.987 | 0.019 | 0.775 |
| H3 | 0.219 | 0.114 | 0.286 | 0.860 | 0.830 | 0.229 | 0.133 | 0.623 |
| N | 4287 | 4287 | 4287 | 4287 | 4287 | 4287 | 4287 | 4287 |

Notes: Eicker-Huber-White standard errors in parentheses."H1-H3" rows report the p-value of hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

### D.2.3 Job search effort

Our next family of hypotheses focused on a third and final set of mechanisms related to job search effort.

$H_d$ Childcare subsidies, employment services, and their combination will lead mothers to increase their job search effort.

We planned to study this hypothesis based on job search activity at the first midline, examining search since the previous interview, number of applications, and number of interviews invited to as well as attended.

[30]This variable is a dummy variable that takes 1 if the mother chooses any of these occupations; human resources personnel, public sector employee, admin assistant, data entry, bank teller, teacher, customer service, indoor sales and telemarketing.

[31]This variable presents the total number of occupations that the mother is willing to accept.

However, the questionnaire skip patterns were not implemented correctly and so very few women were asked these questions. We therefore do not attempt to analyze these outcomes.

## D.3 Downstream outcomes

We then have a set of hypotheses about the downstream effects of the interventions.

### D.3.1 Endline employment

First, we hypothesize that the employment effects will persist after the end of the interventions:

$H_e$ The subsidies, employment services and their combination will increase mothers' employment rates, hours, and (unconditional) wage earnings for mothers at endline.

1. Work activity Dummy variable for at least one hour of remunerated work over the past 7 days.
2. Hours of work Total number of hours of remunerated work over the past 7 days.
3. Labor income Monthly total income earned by the mother.

⇒ **Family 4** This family includes outcomes (1)-(3), measured at endline (see Table D17).

Table D17: Endline employment outcomes

| | (1) Employment b/se | (2) Hours of work (7 Days) b/se | (3) Monthly labor income b/se |
|---|---|---|---|
| Employment services | -0.00123 | 1.354 | -85.77 |
| | (0.0175) | (0.770) | (81.36) |
| 100% discount | 0.00648 | 0.705 | -122.2 |
| | (0.0180) | (0.779) | (78.95) |
| 100% discount*employment services | 0.0128 | -0.0755 | 176.6 |
| | (0.0252) | (1.144) | (107.8) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group | 0.179 | 5.326 | 408.878 |
| H1 | 0.944 | 0.079 | 0.292 |
| H2 | 0.720 | 0.366 | 0.122 |
| H3 | 0.611 | 0.947 | 0.101 |
| N | 3256 | 3256 | 3256 |

Notes: Eicker-Huber-White standard errors in parentheses."H1-H3" rows report the p-value of hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

Note that we also provide separate regressions to break down these impacts on remunerated work in their three underlying component: formal work, informal work, and self-employment. In this analysis, we also include non-remunerated family work (Table D18).

Table D18: Detailed endline employment outcomes

| | (1) Formal work | (2) Informal work | (3) Self employment | (4) Non remunerated family work |
|---|---|---|---|---|
| | b/se | b/se | b/se | b/se |
| Employment services | -0.00804 | 0.000444 | -0.00000554 | 0.000762 |
| | (0.00691) | (0.0154) | (0.0109) | (0.00323) |
| 100% discount | -0.00609 | 0.00594 | 0.00607 | 0.00108 |
| | (0.00756) | (0.0156) | (0.0114) | (0.00322) |
| 100% discount*employment services | 0.0213 | 0.00198 | -0.000656 | -0.00586 |
| | (0.0103) | (0.0222) | (0.0156) | (0.00398) |
| Control variables | Yes | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes | Yes |
| Mean of control group | 0.027 | 0.115 | 0.051 | 0.004 |
| H1 | 0.245 | 0.977 | 1.000 | 0.813 |
| H2 | 0.421 | 0.703 | 0.596 | 0.738 |
| H3 | 0.039 | 0.929 | 0.966 | 0.141 |
| N | 3256 | 3256 | 3256 | 3256 |

Notes: Eicker-Huber-White standard errors in parentheses. "H1-H3" rows report the p-value of hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

### D.3.2 Endline job quality and net labor income

$H_f$ Childcare subsidies, employment services and their combination will change job quality and net labor income.

We investigate this hypothesis by computing the following outcomes:

1. Commuting time higher than control median.[32]
2. Has flexible working hours
3. Ability to take time off work at short notice (paid leaves)
4. Childcare available with employer
5. Labor income net of transport costs, meal expenses for work lunch, and childcare costs

$\Rightarrow$ **Family 5** This family includes outcomes (1)-(5), measured at endline (see Table D19).

[32]For outcomes 1-4, if a respondent does not have a job, the variable takes a value of 0

Table D19: Endline job quality and net labor income

| | (1) Commute time higher than control median | (2) Has flexible working hours | (3) Able to take paid leaves | (4) Has childcare facility at work | (5) Monthly net labor income |
|---|---|---|---|---|---|
| | b/se | b/se | b/se | b/se | b/se |
| Employment services | 0.00289 | -0.0179 | -0.0117 | -0.00492 | -30.52 |
| | (0.0111) | (0.0169) | (0.00991) | (0.00517) | (78.75) |
| 100% discount | -0.00389 | -0.0238 | -0.0234 | -0.00130 | -112.2 |
| | (0.0113) | (0.0172) | (0.00954) | (0.00547) | (84.29) |
| 100% discount*employment services | 0.0106 | 0.0368 | 0.0340 | 0.00947 | 152.0 |
| | (0.0156) | (0.0240) | (0.0135) | (0.00774) | (109.4) |
| Control variables | Yes | Yes | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes | Yes | Yes |
| Mean of control group | 0.056 | 0.167 | 0.051 | 0.014 | 274.042 |
| H1 | 0.794 | 0.290 | 0.239 | 0.341 | 0.698 |
| H2 | 0.730 | 0.166 | 0.014 | 0.812 | 0.183 |
| H3 | 0.498 | 0.125 | 0.012 | 0.221 | 0.165 |
| N | 3256 | 3256 | 3256 | 3256 | 3256 |

Notes: Eicker-Huber-White standard errors in parentheses."H1-H3" rows report the p-value of hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services. "Commute time higher than control median" is a dummy variable that takes 1 if the commute time is higher than the control median, and the commute time is a categorical variable with following categories (1 (5-10 minutes) 2 (10-20 minutes) 3 (20-30 minutes) 4 (30 -40 minutes) 5 (40-60 minutes) 6 (more than one hour)), so the median is calculated based on the mean of the minutes in each category.

Note that we also report separate regressions reporting changes in each specific cost category: (i) transportation undertaken for work purpose during the past 7 days, (ii) other work costs, (iii) childcare costs, for each childcare type category reported in family 2 (see Table D20).

Table D20: Employment cost categories (endline)

| | (1) Transportation costs | (2) Other work costs | (3) Childcare costs |
|---|---|---|---|
| | b/se | b/se | b/se |
| Employment services | -2.711 | -9.612 | -15.03 |
| | (16.52) | (43.59) | (26.62) |
| 100% discount | -14.83 | 41.22 | 3.581 |
| | (15.21) | (64.42) | (33.57) |
| 100% discount*employment services | 2.952 | -36.99 | 19.20 |
| | (19.78) | (68.30) | (41.42) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group | 56.521 | 55.483 | 162.450 |
| H1 | 0.870 | 0.825 | 0.572 |
| H2 | 0.330 | 0.522 | 0.915 |
| H3 | 0.881 | 0.588 | 0.643 |
| N | 3256 | 3256 | 3256 |

Notes: Eicker-Huber-White standard errors in parentheses."H1-H3" rows report the p-value of hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services. The "child care costs" variable represents all the women, not only employed women.

### D.3.3 Welfare

Next, we investigate impacts on mothers' welfare.

$H_g$ Childcare subsidies, employment services and their combination will improve mother's welfare.

We measure **welfare** with these two outcomes:

- (1) Mothers' perceived food insecurity: The questionnaire includes a series of questions intended to detect food security as well as the impact of COVID-19 on food security.[33]
- Mother psychological well-being: While employment services and child care subsidies may decrease maternal depression, it is also possible that additional employment creates stress and difficulties combining employment and domestic responsibilities could actually increase maternal depression. We use the WHO-5 well-being index, both (2) overall and (3) based on a score less than 50 to screen for maternal depression (Topp et al., 2015). This is one of the most widely used measures of subjective well-being.[34]

[33]The questions ask: In the past 7 days, have you or any household member experienced any of the following? (select all that apply) (1) Difficulties in going to food markets due to mobility restrictions imposed by government/closures (2) Unable to buy the amount of food we usually buy because of shortages of food in markets (3) Unable to buy the amount of food we usually buy because the price of food increased (4) Unable to buy the amount of food we usually buy because our household income has dropped (5) Had to reduce the number of meals and/or the portion of each meal we would usually eat. While (1) and (2) are about the availability of food, (3), (4), and (5) could be affected by changes in employment and income brought about by our intervention. We therefore test for changes in each of these secondary outcomes.

[34]The WHO-5 scale asks "Over the past two weeks..." for five questions such as "I have felt cheerful and in good spirits" with responses of (5) All of the time (4) Most of the time (3) More than half the time (2) Less than half the time (1) Some of

⇒ **Family 6** includes outcomes (1)-(3), measured at endline (see Table D21).

Table D21: Welfare outcomes (endline)

| | (1) Food insecurity experience scale | (2) Well-being (WHO-5: 0-100) | (3) Well-being (dummy variable for depression: WHO-5 less than 50) |
|---|---|---|---|
| | b/se | b/se | b/se |
| Employment services | 0.0654 | 0.488 | 0.00115 |
| | (0.135) | (1.072) | (0.0228) |
| 100% discount | 0.0509 | 0.859 | -0.00802 |
| | (0.136) | (1.038) | (0.0225) |
| 100% discount*employment services | -0.0543 | -0.999 | 0.0128 |
| | (0.189) | (1.494) | (0.0319) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group | 3.088 | 39.127 | 0.692 |
| H1 | 0.627 | 0.649 | 0.960 |
| H2 | 0.709 | 0.407 | 0.721 |
| H3 | 0.774 | 0.504 | 0.688 |
| N | 3226 | 3256 | 3256 |

Notes: Food Insecurity Experience Scale (FIES) is experience-based measures of household or individual food security. FIES data are analysed by applying the Rasch model. The well-being in column 2 is the WHO-5 overall raw score and multiplied by four to scale from 0 (worst possible well-being) to 100 (best possible well-being). The well-being variable in column 3 is a dummy variable that takes 1 if well-being is lower or equal than 50 and 0 if well-being is higher than 50. Eicker-Huber-White standard errors in parentheses. "H1-H3" rows report the p-value of 3 hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

### D.3.4 Empowerment

Next, we investigate impacts on mother's empowerment. This is a complex and contested concept (Ballon and Yalonetzky, 2018; Glennerster et al., 2018). We use the common measures of mobility and self-efficacy as our two metrics of empowerment.

- (1) Mobility The mobility measures are a series of questions on "If you need to go to any of the following places, can you go on your own without permission or do you need to inform someone or get permission or you just can't go?" We undertake exploratory factor analysis to create a standardized factor from four variables for different destinations (the local market; going to the doctor for treatment; bringing

the time (0) at no time. The WHO-5 is summed for an overall raw score and multiplied by four to scale from 0 (worst possible well-being) to 100 (best possible well-being). A cut-off score of 50 is commonly used to screen for depression (Topp et al., 2015). We use both the overall raw score, as a potentially more sensitive measure of maternal well-being, as well as a binary measure of maternal depression, as a particularly important secondary outcome.

children to the doctor; visiting home of relatives, friends, or neighbors) with the responses (4) Go alone without permission (3) Go alone after informing them (2) Go alone, but must be granted permission first and (1) Cannot go alone. Higher scores indicate higher levels of mobility.

- (2) Self-efficacy The self-efficacy questions are the ten-question generalized self-efficacy scale, asking "How often do you feel..." for a variety of statements, such as "I can usually handle whatever comes my way." Responses range from from (1) No (2) Scarcely (3) Often (4) Always. Higher scores indicate higher levels of self-efficacy. We undertake exploratory factor analysis to create a standardized factor from these variables.

⇒ **Family 7** includes outcomes (1) and (2), measured at endline (see Table D22).

Table D22: Empowerment outcomes (endline)

| | (1) Mobility factor | (2) Self-efficacy |
|---|---|---|
| | b/se | b/se |
| Employment services | -0.0300 | -0.0354 |
| | (0.0426) | (0.0445) |
| 100% discount | 0.0370 | -0.0140 |
| | (0.0430) | (0.0442) |
| 100% discount*employment services | 0.00530 | -0.0180 |
| | (0.0602) | (0.0633) |
| Control variables | Yes | Yes |
| Nursery dummy variables | Yes | Yes |
| Strata dummy variables | Yes | Yes |
| Mean of control group | -0.001 | 0.030 |
| H1 | 0.481 | 0.427 |
| H2 | 0.389 | 0.752 |
| H3 | 0.930 | 0.776 |
| N | 3256 | 3256 |

Notes: Eicker-Huber-White standard errors in parentheses."H1-H3" rows report the p-value of 3 hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

### D.3.5 Time use at endline

Nurturing care is critically important to early childhood development Britto et al. (2017). Changes in maternal employment or use of nurseries may change the amount of time children receive nurturing care at home. We examine maternal time use as an outcome for mothers and key mechanism for effects on children's development. We focus on mothers, since men provide effectively nil caregiving even when their wives work in the context of Egypt (Economic Research Forum and UN Women, 2020; Krafft and Li, 2024).

$H_h$ Childcare subsidies and employment services will change the amount of time women spend on childcare, chores, and leisure.

We have a 24 hour time use history for mothers in the baseline and endline questionnaires. The time use module includes both primary and secondary activities, which are critical for capturing caregiving. We use hours engaged in specifically "childcare and instruction" as a primary or secondary activity (the sum of the two) as our outcome. We also contextualize any changes in caregiving time with corresponding changes in time spent in nursery or other care, since the two may be substitutes, albeit of potentially varying quality.

⇒ **Family 8** includes 1) hours per day of child care 2) hours per day of leisure 3) hours per day of chores (see Table D23).

Table D23: Time use outcomes (endline)

| | (1) Hours per day of child care | (2) Hours per day of leisure | (3) Hours per day of chores |
|---|---|---|---|
| | b/se | b/se | b/se |
| Employment services | -0.0460 | -0.00110 | -0.152 |
| | (0.152) | (0.202) | (0.279) |
| 100% discount | 0.0135 | -0.00718 | -0.468 |
| | (0.158) | (0.193) | (0.252) |
| 100% discount*employment services | 0.166 | -0.0365 | 0.423 |
| | (0.211) | (0.269) | (0.414) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group | 1.831 | 2.604 | 5.669 |
| H1 | 0.762 | 0.996 | 0.584 |
| H2 | 0.932 | 0.970 | 0.063 |
| H3 | 0.433 | 0.892 | 0.306 |
| N | 3256 | 3256 | 3256 |

Notes: Eicker-Huber-White standard errors in parentheses."H1-H3" rows report the p-value of 3 hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

## D.4 Primary outcomes: Children

An important question about using child care subsidies to increase women's employment is whether increases in nursery care are beneficial, harmful, or neutral in their effects on children. We hypothesize:

$H_i$ Increased usage of child care services will result in development gains for children.

The tools we use to measure children's development depend on their age at the time of each wave. For children aged 0-35 months we use the Caregiver-Reported Early Development Instruments (CREDI). For children aged 36-83 months we use the Measure of Development and Early Learning (MODEL) direct assessment and parent/caregiver report tools.

### D.4.1 Children's development ages 0-35 months

The CREDI short form is designed to measure ECD across five dimensions for ages 0-35 months. Dimensions include motor, cognitive, language, socio-emotional, and mental health skills. The CREDI short form has been validated with results from 8,022 children across 17 low-, middle- and high-income countries, including in Arabic in Jordan and Lebanon (McCoy et al., 2018b). Caregivers are asked 20 yes/no questions about children's development within age-specific six-month bands (e.g. 12-17 months). The results of the CREDI provide a single score across all domains (McCoy et al., 2018b). As per the scoring manual (McCoy et al., 2018a), a raw scaled score (percentage of age-specific 20 items that are a yes) are used as the child development outcome for children aged 0-35 months.

### D.4.2 Children's development ages 36-83 months

The Measuring Early Learning Outcomes and Quality (MELQO) tools include the MODEL measures of ECD for children aged 3-8 years (pre-primary aged children, globally) (UNESCO, 2017). We use these tools for children aged 36 months to 83 months (children would enter primary school in Egypt once aged six). There are specifically instruments for child direct assessment and parent/caregiver reports of development. Both instruments cover dimensions of: executive function, socio-emotional skills, and pre-academic skills (literacy and math).

The MODEL instruments have been validated across low- and middle- income contexts and used in more than 13 countries (Raikes, 2018). The measures are designed to be summarized through factor analysis. Previous analyses indicated all developmental dimensions loaded on to a single factor of "school readiness" (Raikes, 2018). We therefore undertake exploratory factor analysis to confirm this structure and factor scores are used as the primary developmental outcome for ages 36-83 months. The MODEL tools had previously been adapted to the Egyptian context for a study of learning in pre-primary (Krafft et al., 2023, 2024b), and the adapted tools were used for this study.

### D.4.3 Children's development ages 0-83 months

In order to estimate the impact of the interventions on children aged 0-83 months overall, we also calculate the percentage of items correct (for the direct assessment) or yes (for the parent/child report) and create a raw scaled score combining the CREDI and MODEL measures.

⇒ **Family 9** includes 1) CREDI raw scaled score 2) MODEL standardized score 3) combined raw scaled score. All of these are measured at endline (see Table D24).

Table D24: Children's development outcomes (endline)

| | (1) CREDI raw scaled score | (2) MODEL standardized score | (3) Combined raw scaled score |
|---|---|---|---|
| | b/se | b/se | b/se |
| Employment services | -0.410 | 0.0326 | -0.0360 |
| | (0.298) | (0.0690) | (0.787) |
| 100% discount | -0.593 | 0.0240 | -0.104 |
| | (0.292) | (0.0668) | (0.776) |
| 100% discount*employment services | 0.765 | 0.0409 | 0.0855 |
| | (0.424) | (0.0959) | (1.100) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group | 44.114 | -0.027 | 32.254 |
| H1 | 0.168 | 0.636 | 0.963 |
| H2 | 0.043 | 0.719 | 0.894 |
| H3 | 0.071 | 0.670 | 0.938 |
| N | 919 | 1584 | 2524 |

Notes: Eicker-Huber-White standard errors in parentheses."H1-H3" rows report the p-value of 3 hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

## D.5 Treatment effect heterogeneity

There are two key dimensions of treatment effect heterogeneity we explore for our main outcomes:

- Household income:[35] We examine treatment effect heterogeneity by baseline income tertiles (see Table D25).

- Gender role attitudes (as measured by 11 questions in the baseline questionnaire):[36] We examine treatment effect heterogeneity by baseline gender role attitude index tertiles (see Table D26).

[35]Household income is from the baseline questionnaire,specifically the question: Last month, what was your household's total monthly income (from all sources).

[36]The baseline questionnaire asks whether respondents strongly disagree (1), disagree (2), neutral (3), agree (4), or strongly agree (5) for each of the following: (1) The husband should help his working wife raise their children. (2) The husband should help his working wife with household chores. (3) Girls should go to school to prepare for jobs, not just to make them good mothers and house-wives. (4) A woman who works outside the home cannot be a good mother. (5) For a woman's financial autonomy, she must work and have earnings. (6) A woman's work interferes with her ability to keep a good relationship with her husband. (7) Women should continue to obtain leadership positions in society. (8) Boys and girls should get the same amount of schooling. (9) Boys and girls should be treated equally. (10) When jobs are scarce, men should have more right to a job than women. (11) Girls/women who are harassed deserve it if they are dressed provocatively. We reverse code (4), (6) and (11) so that all measures indicate more gender equitable values consistently and use factor analysis on these measures to create a continuous index.

Table D25: Employment effect (at endline) heterogeneity by baseline income tertiles

| | (1) Work activity | (2) Hours of work (7 days) | (3) Monthly labor income |
|---|---|---|---|
| | b/se | b/se | b/se |
| Panel A: Income tertile 1 | | | |
| Employment services | 0.008 | 0.970 | 89.591 |
| | (0.029) | (1.281) | (114.809) |
| 100% discount | 0.031 | 1.191 | 34.706 |
| | (0.031) | (1.384) | (102.518) |
| 100% discount*employment services | -0.016 | 0.773 | -48.603 |
| | (0.043) | (1.931) | (169.620) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group in income tertile 1 | 0.203 | 6.412 | 377.602 |
| H1 | 0.776 | 0.449 | 0.435 |
| H2 | 0.309 | 0.390 | 0.735 |
| H3 | 0.712 | 0.689 | 0.774 |
| N | 1273 | 1273 | 1273 |
| Panel B : Income tertile 2 | | | |
| Employment services | -0.021 | -1.437 | -226.261 |
| | (0.030) | (1.262) | (170.230) |
| 100% discount | 0.002 | -0.304 | -329.340 |
| | (0.031) | (1.467) | (181.092) |
| 100% discount*employment services | 0.033 | 1.194 | 476.945 |
| | (0.043) | (1.864) | (222.123) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group in income tertile 2 | 0.167 | 5.376 | 482.111 |
| H1 | 0.475 | 0.255 | 0.184 |
| H2 | 0.960 | 0.836 | 0.069 |
| H3 | 0.448 | 0.522 | 0.032 |
| N | 1013 | 1013 | 1013 |
| Panel C: Income tertile 3 | | | |
| Employment services | 0.004 | 3.972 | -148.772 |
| | (0.032) | (1.439) | (165.962) |
| 100% discount | 0.002 | 1.228 | -52.354 |
| | (0.033) | (1.228) | (174.320) |
| 100% discount*employment services | 0.027 | -1.606 | 140.883 |
| | (0.045) | (1.971) | (195.299) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group in income tertile 3 | 0.157 | 3.709 | 367.390 |
| H1 | 0.897 | 0.006 | 0.370 |
| H2 | 0.944 | 0.317 | 0.764 |
| H3 | 0.541 | 0.415 | 0.471 |
| N | 970 | 970 | 970 |

Notes: Eicker-Huber-White standard errors in parentheses. The 3 panels present the results of the regressions for different income tertiles, form poorest (1) to richest (3). "H1-H3" rows report the p-value of three hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.

Table D26: Employment effect (at endline) heterogeneity by baseline female gender role attitude index tertiles

| | (1) Work activity | (2) Hours of work (7 days) | (3) Monthly labor Income |
|---|---|---|---|
| | b/se | b/se | b/se |
| Panel A: Gender tertile 1 | | | |
| Employment services | 0.042 | 3.878 | -127.992 |
| | (0.030) | (1.365) | (187.214) |
| 100% discount | 0.057 | 2.452 | -186.059 |
| | (0.033) | (1.344) | (221.346) |
| 100% discount*employment services | -0.054 | -2.033 | 243.989 |
| | (0.045) | (2.113) | (252.151) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group in gender tertile 1 | 0.165 | 4.133 | 550.365 |
| H1 | 0.153 | 0.004 | 0.494 |
| H2 | 0.079 | 0.068 | 0.401 |
| H3 | 0.228 | 0.336 | 0.333 |
| N | 1068 | 1068 | 1068 |
| Panel B : Gender tertile 2 | | | |
| Employment services | -0.045 | -1.107 | -55.504 |
| | (0.031) | (1.352) | (112.913) |
| 100% discount | -0.021 | 0.073 | -115.336 |
| | (0.032) | (1.442) | (103.291) |
| 100% discount*employment services | 0.026 | 0.495 | 104.235 |
| | (0.045) | (2.061) | (191.642) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group in gender tertile 2 | 0.209 | 6.861 | 352.368 |
| H1 | 0.146 | 0.413 | 0.623 |
| H2 | 0.506 | 0.960 | 0.264 |
| H3 | 0.563 | 0.810 | 0.587 |
| N | 1085 | 1085 | 1085 |
| Panel C: Gender tertile 3 | | | |
| Employment services | 0.013 | 1.666 | -24.942 |
| | (0.030) | (1.255) | (104.456) |
| 100% discount | 0.005 | 0.505 | -112.975 |
| | (0.029) | (1.248) | (104.252) |
| 100% discount*employment services | 0.026 | -0.662 | 85.257 |
| | (0.041) | (1.777) | (131.256) |
| Control variables | Yes | Yes | Yes |
| Nursery dummy variables | Yes | Yes | Yes |
| Strata dummy variables | Yes | Yes | Yes |
| Mean of control group in gender tertile 3 | 0.162 | 4.914 | 334.590 |
| H1 | 0.671 | 0.184 | 0.811 |
| H2 | 0.863 | 0.685 | 0.279 |
| H3 | 0.526 | 0.709 | 0.516 |
| N | 1097 | 1097 | 1097 |

Notes: Eicker-Huber-White standard errors in parentheses. The 3 panels present the results of the regressions for each gender role attitude tertile, where (1) is most conservative and (3) most progressive. "H1-H3" rows report the p-value of three hypotheses tests where H1: no impact of the employment services intervention in the absence of the childcare subsidies, H2: No impact of childcare subsidies in the absence of employment services, and H3: No interaction between childcare subsidies and employment services.