

# The barriers to female employment: Experimental evidence from Egypt

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ASSA Annual Meeting

January 4, 2026

- Less than half of world's women are employed, vs. two-thirds of world's men (International Labor Organization, 2023)
- Gender gaps particularly large in Middle East and North Africa (MENA) (Verick, 2018)
- Potential barriers: Gender norms or economic constraints?
  - Social norms limit women's employment (El-Feki et al., 2017; Gauri et al., 2019; Keo et al., 2023; Majbouri, 2023)
  - Economic constraints include limited labor demand, search frictions, and lack of childcare services (Assaad et al., 2019; Economic Research Forum and UN Women, 2020)
- Global evidence: Economic opportunities can increase women's employment even in conservative settings (Heath and Mobarak, 2015; Jensen, 2012)
- Gains in employment following major shifts in norms (Agte and Bernhardt, 2023; Bernhardt et al., 2018)

# Egyptian context and our experiment

- In Egypt, as of 2023, only 15 percent of women employed vs. 69 percent of men (Krafft et al., 2024)
- Conservative gender norms widespread
  - Example: 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)
- Randomized controlled trial: Experiment with economic interventions to increase married women’s employment in Egypt
  - Child care subsidies
  - Employment (job matching) services
  - Their combination

# Two cross-randomized interventions

- Childcare subsidies: mothers assigned to this intervention were eligible for a subsidy on the price of a local NGO nursery, for one year
  - Cover all children aged 0-5
  - 60 participating nurseries in Greater Cairo
  - Subsidies initially 25 percent or 75 percent of median fee (fixed amount)
  - Initial subsidy take-up low (only 2 percent at midline)
  - Raised subsidy to 100 percent, additional randomized interventions of (1/2) incentives to enroll within 30 days for mothers/fathers (3) nursery visit or (4) only 100 percent subsidy
  - Subsidies for approx. 12 months
- Employment services: mothers assigned to this intervention were connected to local employers providing formal jobs
  - Two job matching platforms (Forasna first and second rounds, Shaghiani third round)
  - Matched based on job criteria, offering three vacancies, repeatedly over three rounds

# Sample: Nurseries and Households

- Targeting low-income neighborhoods in Greater Cairo
- NGO nurseries registered with Ministry of Social Solidarity (MoSS) - formal nurseries
  - Worked with an umbrella NGO that supported nurseries (Kheir wa Barka)
  - Offered nurseries the opportunity to accept vouchers
  - Created catchment areas with a 2km radius around participating nurseries
- Random sample of households in nursery catchment area
  - Not yet a client of a nursery
  - At least one child aged 1-5
  - Baseline (N=5,047 households)
  - Midline 1 (approx. four months after baseline, N=4,287)
  - Midline 2 (approx. four months after midline 1, N=3,798)
  - Endline (One month after end of interventions, N=3,256)

- Nursery attendance data
  - Subsidy ever take-up: Ever used subsidy and registered any children in participating nursery
- Employment services take-up
  - If mothers interested in vacancies, create a profile, recorded job preferences, proposed vacancies
  - If mother interested in vacancies, applied on behalf of the mother
  - Rest of matching process between firm and mother, but employment services tracked information
  - Additional data by research team on random vacancies

# Empirical strategy

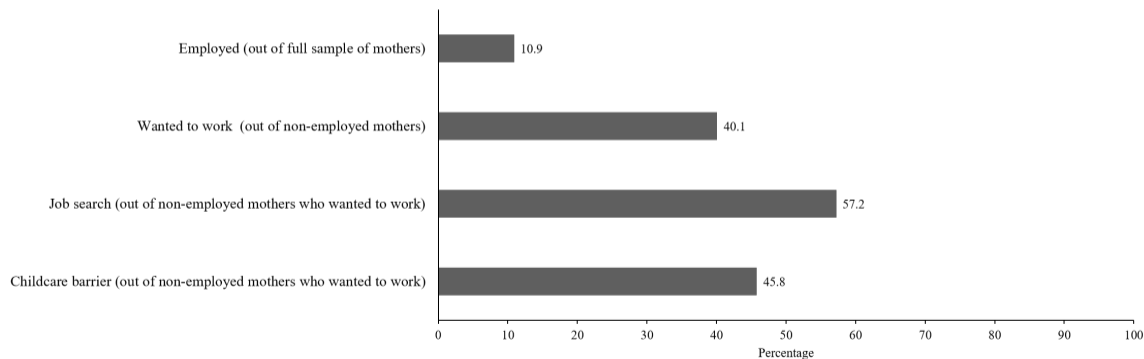
- Treatment variables based on random assignment
  - $V=1$  if household offered subsidy
  - $E=1$  if mother offered employment services
- Estimate intent-to-treat regression for outcome  $y$ ,  $S$  randomization strata dummies, household  $i$ ,

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

- $X_i^l$  a set of control variables chosen using the post double selection lasso (PDSlasso) method (Belloni et al., 2013)
- Heteroscedasticity robust standard errors
- When pooling more than one wave, cluster standard errors at individual level

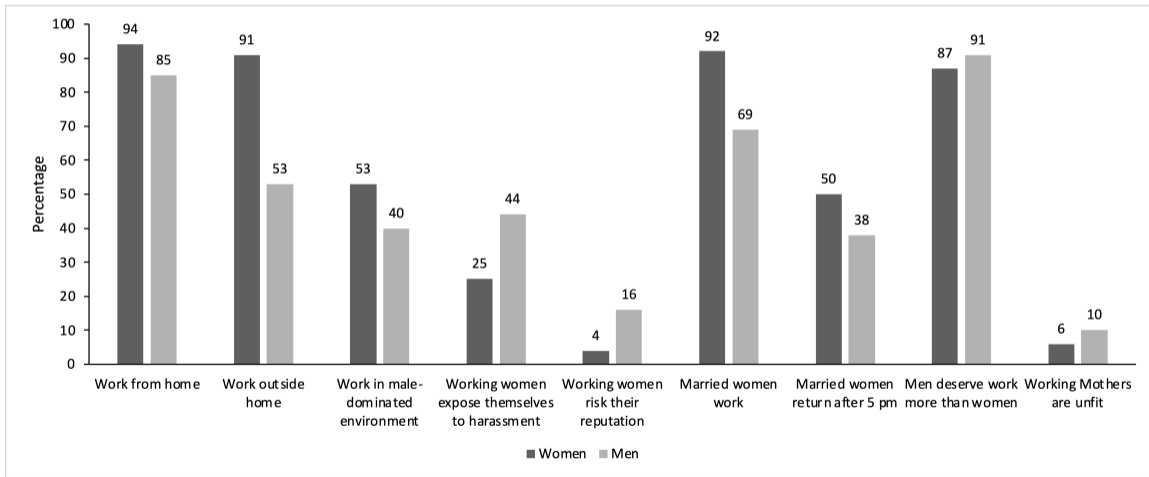
# Baseline labor market characteristics

**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**



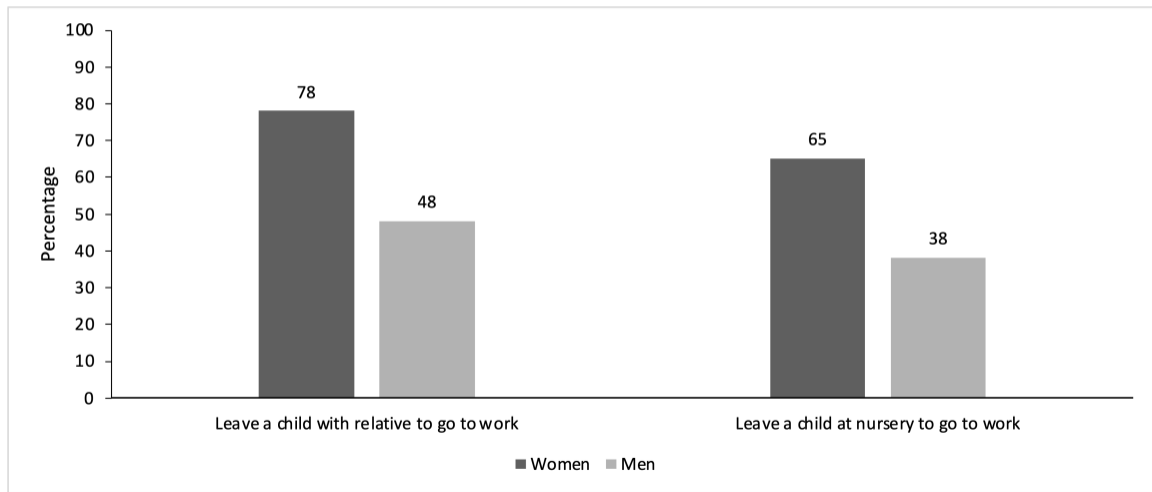
# Norms limit - but do not universally rule out - women's employment

## Norms about women's work (percentage) at baseline, by respondent sex



# Norms also constrain use of child care

## Norms about child care (percentage) at baseline, by respondent sex



**Table:** Ever take-up of interventions

	Take up nursery voucher	Account creation	Job application submission	Joint take up
Employment services	0.000 (0.001)	0.474 (0.014)	0.212 (0.012)	-0.000 (0.000)
100% discount	0.112 (0.009)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.000)
100% discount*employment services	-0.010 (0.012)	0.018 (0.020)	0.014 (0.016)	0.026 (0.004)

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. Includes strata dummy variables. Robust standard errors (in parentheses).

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

	Work activity	Hours of work (7 days)	Monthly labor income	Employment index
Employment services	-0.0103 (0.00970)	-0.541 (0.401)	52.84 (52.85)	-0.00381 (0.0353)
100% discount	-0.00520 (0.0101)	-0.156 (0.422)	-20.68 (28.06)	-0.0189 (0.0292)
100% discount*employment services	0.0113 (0.0140)	0.557 (0.583)	-17.23 (62.99)	0.0204 (0.0465)
Mean of control group	0.102	3.757	152.896	0.000
N of observations	8085	8085	8085	8085
N of individuals	4455	4455	4455	4455

Notes: Control variables and midline 2, strata, and nursery dummy variables included. Control variables and nursery dummy variables are subject to selection by pdlasso. Robust standard errors are in parentheses and are adjusted for clusters (individuals). Standardized employment index combines other outcomes, used for hypothesis testing.

# Impacts on downstream outcomes

- **Employment and cost outcomes:** No significant impacts across endline employment outcomes, including overall employment, specific types of employment, job quality, or net labor income. No effect on transportation, work, or childcare costs
- **Welfare and empowerment:** No impacts on welfare measures (Food Insecurity Experience Scale, WHO-5 wellbeing) or women's empowerment (mobility or self-efficacy factors)
- **Time use:** No changes in women's time use, specifically for childcare, leisure, or chore time
- **Children's development:** 100% discount treatment arm (but not the combined arm) might slightly worsen development outcomes for younger children, measured by the CREDI score (a 0.6 point reduction from a mean of 44). No negative effects for the MODEL school readiness factor for older children or the combined age-group scale

- **Childcare:** No significant impacts on hours of formal (NGO nursery) care or any other types of care (pooled midlines)
  - Suggests subsidy did not change care arrangements, just paid for arrangements would have used anyways
- **Reservation job quality:**
  - Employment services led to slightly higher reservation job quality (2 min shorter commute)
  - Subsidy led to 3 p.p. higher preference for flexible working hours, paid leaves
    - Flexibility and leaves complement formal child care

**Table:** Results of applications to vacancies

	<b>Administrative data</b>	<b>Endline data</b>
<b>Application status (among proposed vacancies)</b>		
Received a call for an interview	24.7	18.7
Not reached by employer	40.2	81.4
Application got rejected	4.6	-
Unreachable (recruitment platform couldn't reach applicant to ask about the status)	30.4	-
<b>Interview status (among vacancies that received a call for an interview)</b>		
Attended and waiting for next steps/No response	18.0	4.4
Interview declined by the applicant	47.8	84.6
Interview pending	13.6	-
Got hired	2.5	1.1
Attended, position offered, offer declined by applicant	5.0	7.7
Rejected by the employer	13.0	2.2

# Mismatch with available jobs (Mothers more likely to apply if match)

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

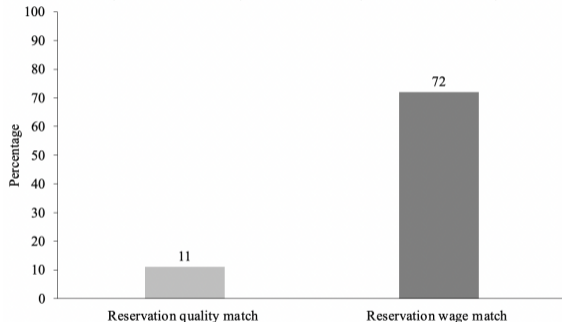


Figure: (a) Proposed

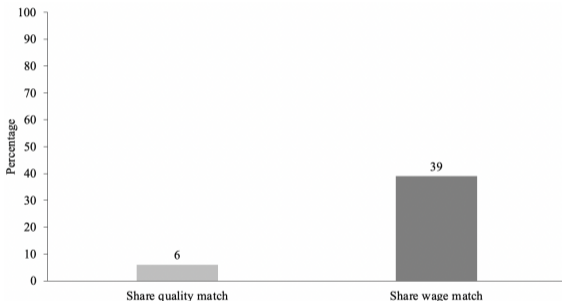


Figure: (b) Available

Source: 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 at 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

**Table:** Heterogeneous impacts on take-up by match and gender norms

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

Notes: Includes strata dummies. Limited to sample offered each service. Progressive couple: work outside is when both the woman and her spouse agree it is acceptable for a woman to work outside the home. Progressive couple: nursery is when both the woman and her husband agree it is acceptable to use nursery services. Above matching score median is whether the average matching score between all random jobs and a woman's preferences is above the median.

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

	Childcare discussion with husband	Disagreement about using childcare	Employment discussion with husband	Disagreement about employment	Husband support in future
	b/se	b/se	b/se	b/se	b/se
Employment services	-0.0531 (0.0418)	0.0246 (0.0273)	0.0795 (0.0427)	0.178 (0.0475)	-0.106 (0.0455)
100% discount	-0.0232 (0.0408)	0.0315 (0.0273)	-0.0167 (0.0436)	0.0955 (0.0470)	-0.0405 (0.0454)
100% discount*empl serv	0.0478 (0.0599)	-0.0121 (0.0411)	-0.00345 (0.0605)	-0.125 (0.0683)	0.0338 (0.0638)
Progressive couple	-0.0514 (0.0444)	-0.00747 (0.0278)	0.0753 (0.0429)	0.000306 (0.0466)	0.145 (0.0490)
Empl serv*prog couple	0.0502 (0.0612)	-0.0287 (0.0386)	-0.0890 (0.0583)	-0.223 (0.0643)	0.0906 (0.0664)
100% disc*prog couple	0.0130 (0.0618)	-0.0360 (0.0385)	0.0256 (0.0598)	-0.0792 (0.0657)	-0.0745 (0.0689)
100% disc*empl serv*prog couple	0.0103 (0.0869)	0.0233 (0.0545)	-0.0116 (0.0836)	0.121 (0.0916)	0.0843 (0.0946)
Mean of control group	0.687	0.082	0.681	0.279	0.428

Notes: Includes control, nursery, and strata dummy variables. Endline sample with both mothers and husbands responding (questions only asked at endline, N=1,575). Control variables and nursery dummy variables are subject to selection by pdslasso. Robust standard errors (in parentheses). Progressive couple means both the mother and her spouse agreed it is okay for women to work outside the house.

# Summary

- Addressing economic constraints: child care and search/labor demand
- Limited take-up of interventions
  - Only 11 percent took up the subsidy - despite many women wanting to work and saying childcare was a key constraint
  - Half of women created a profile for employment services, a fifth applied for jobs, but very few (four) matches
- No significant impact on women's employment
- Gender norms limited whether and what work was acceptable, acceptability of nursery care
- Interventions increased conversations about, disagreements about, and pessimism about employment in non-progressive couples
- Gender norms limited employment services take-up, but still no intervention impacts among couples with progressive norms
- Mismatch between available jobs and women's preferences

- In 21/22 studies in LMICs, child care had **positive** effects on women's labor market outcomes (Halim, Perova, Reynolds 2023)
  - Studies from higher participation contexts (ave. 54%, min. 28%) - not MENA or South Asia
- Pre-primary in Algeria and primary in Egypt **did not increase maternal employment** (Krafft and Lassassi, 2024; Krafft and Li, 2024), possibly due to short days of care
- In contexts with low rates of women's employment, **more comprehensive interventions** may be needed, providing women-friendly employment, adequate child care, and tackling restrictive gender norms
  - Interventions in other conservative contexts offering flexible and work from home jobs to women more successful (Ho et al., 2023; Jalota and Ho, 2023)
- Future research: Other child care projects: Are different designs, targeting, contexts more effective in promoting women's employment and children's development?

# Thank you!

The authors appreciate the research assistantship of Amira El-Mashad, Hala ElBehairy, and Noha Fadlalmawla, as well as the replication check of Kenji Komeda.

The authors acknowledge the funding support of the World Bank - Middle East and North Africa Gender Impact Lab and G2LM — LIC. Stefano Caria also acknowledges support from the Leverhulme Trust through a Philip Leverhulme Prize.