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Barriers to entry: Decomposing the gender gap in job search in urban Pakistan

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APPENDIX

Barriers to Entry: Decomposing the Gender Gap in Job Search in Urban Pakistan

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Appendix Tables

Table A.1: Jobseeker selection into use of Job Talash platform

Full sample		
Sample	LFS Lahore	HH Listing
	(1)	(2)
Female	0.493	0.496
	(0.500)	(0.500)
Age	34.0	33.2
Highest education level		
Primary Ed	0.692	0.708
Secondary Ed	0.141	0.121
Tertiary Ed	0.167	0.154
Employed	0.471	0.397
N	6,464	184,048
Women		
Sample	LFS Lahore	HH Listing
	(1)	(2)
Age	33.8	32.9
	(11.6)	(11.3)
Highest education level		
Primary Ed	0.678	0.702
Secondary Ed	0.149	0.126
Tertiary Ed	0.173	0.158
Employed	0.098	0.081
N	3,189	91,351
Men		
Sample	LFS Lahore	HH Listing
	(1)	(2)
Age	34.2	33.5
	(11.8)	(11.6)
Highest education level		
Primary Ed	0.705	0.715
Secondary Ed	0.135	0.117
Tertiary Ed	0.160	0.151
Employed	0.834	0.708
N	3,275	92,697

HH = household, LFS = Pakistan Labor Force Survey.

Notes: Table compares the sample of individuals surveyed in the household listing exercise of this study (column 2) to an external benchmark: the area of Lahore where the study takes place (column 1). Lahore statistics are calculated from the Lahore subsample of the Pakistan Labor Force Survey (LFS) 2018. Standard deviations are shown in parentheses for continuous variables.

Source: Job Talash platform.

Table A.2: Firm selection into use of Job Talash platform

Employees and gender composition					
	Did not post ad		Posted ad		Diff
	n	mean	n	mean	
Number of employees	1,548	2.98	309	20.46	17.472**
Number vacancies posted last year	1,634	0.73	322	6.55	5.819*
Firm has 0% female employees	1,535	0.92	311	0.79	-0.131***
Firm has 1-50% female employees	1,535	0.02	311	0.12	0.101***
Firm has 51-99% female employees	1,535	0.03	311	0.05	0.023*
Firm has 100% female employees	1,535	0.04	311	0.05	0.007
Missing gender composition	9,493	0.84	332	0.06	-0.775***
Firm infrastructure and space					
	Did not post ad		Posted ad		Diff
	n	mean	n	mean	
Separate toilet for women	996	0.20	178	0.44	0.242***
Separate prayer space for women	996	0.22	178	0.54	0.315***
Separate working space for women	851	0.03	150	0.10	0.072***
One room/shop	9,297	0.80	331	0.65	-0.151***
Several rooms/shops	9,297	0.13	331	0.22	0.087***
One or more buildings	9,297	0.07	331	0.13	0.065***
Industry classification					
	Did not post ad		Posted ad		Diff
	n	mean	n	mean	
Manufacturing	8,181	0.05	332	0.07	0.021
Electricity, gas	8,181	0.00	332	0.01	0.003
Water, sewerage, waste management	8,181	0.00	332	0.00	0.001
Construction	8,181	0.00	332	0.01	0.005
Wholesale, retail trade	8,181	0.50	332	0.36	-0.143***
Transportation, storage	8,181	0.01	332	0.02	0.006
Accommodation, food services	8,181	0.07	332	0.06	-0.003
Information, communication	8,181	0.01	332	0.02	0.011
Finance, insurance	8,181	0.01	332	0.02	0.007
Real estate	8,181	0.04	332	0.03	-0.005
Scientific, technical	8,181	0.02	332	0.05	0.034***
Admin, support service	8,181	0.00	332	0.00	0.001
Education	8,181	0.04	332	0.06	0.020
Human health, social work	8,181	0.03	332	0.03	-0.003
Arts & entertainment	8,181	0.01	332	0.00	-0.006*
Other service	8,181	0.21	332	0.26	0.052**

Notes: 9,825 total firms listed. Firms who participate in the survey respond to questions about their employees, vacancies, gender composition and infrastructure; missingness varies across variables due to drop-off during the survey. Information on firm space and industry classification was collected for almost all listed firms through enumerator observation. * $p < .1$, ** $p < .05$, *** $p < .01$.

Source: Job Talash platform.

Table A.3: CV selection criteria and randomization components

Traits	Criteria
<i>Panel A: Selection Criteria for CV's</i>	
Education	Tertiary: Bachelors and above Secondary: Intermediate Primary: Matric and lower
Experience	High: >0 and up to 5 years Low: 0 years
<i>Panel B: CV Traits swapped</i>	
Gender	Male, Female
Secondary Grades	A, B, C, D or Grades not reported
Tertiary Institute ranking	High ranking: HEC ranking score ≥ 48.9 Medium ranking: HEC ranking score < 48.9 Low ranking: HEC ranking score = 0

CV = curriculum vitae.

Note: Tertiary institute ranking is based on the ranking scores of universities by the Higher Education Commission (HEC). 'High' ranking is assigned to all the universities that have a ranking score higher than the median score of 48.9 in our sample. 'Medium' for institutes lying between 0 and 48.9. 'Low' is for all those institutes that have not been assigned any score due to non-recognition by HEC.

Source: Authors.

Table A.4: Incentivized résumé rating: Balance of CV traits by gender

Variable	(1) Male	(2) Female	(3) P-values
Tertiary Education	0.209	0.209	1.000
Secondary education	0.326	0.349	0.611
Primary Education	0.465	0.442	0.629
Tertiary grades	3.051	3.093	0.784
Secondary grades	3.934	3.782	0.280
Public Tertiary Education	0.074	0.047	0.226
3-5 years experience	0.502	0.502	1.000
N	215	215	430

CV = curriculum vitae, HEC = Higher Education Commission.
 Note: Column 1 and 2 report average value of a CV trait for men and women. Column 3 reports p-values of the difference of means in column 1 and 2. 'Tertiary grades' range from 2-5 where 5 is A and 2 is D. 'Secondary grades' are coded the same as tertiary grades and apply to only those people who have higher than ten years of education. '3-5 years experience' is an indicator variable; years of experience for all CVs used in the IRR was less than five years. * $p < .1$, ** $p < .05$, *** $p < .01$.
 Source: Authors' estimates.

Table A.5: Firm selection into IRR

Employees and Gender composition					
	Did not participate in IRR		Participated in IRR		Diff
	n	mean	n	mean	
Firm has 0% female employees	582	0.89	87	0.77	-0.133***
Firm has 1-50% female employees	582	0.02	87	0.11	0.084**
Firm has 51-99% female employees	582	0.03	87	0.08	0.054*
Firm has 100% female employees	582	0.05	87	0.03	-0.005
Missing gender composition	6984	0.92	87	0.00	-0.890***
Firm infrastructure and space					
	Did not participate in IRR		Participated in IRR		Diff
	n	mean	n	mean	
Separate toilet for women	31	0.68	19	0.79	0.560***
Separate prayer space for women	31	0.84	19	0.79	0.526***
Separate working space for women	27	0.22	17	0.29	0.126
Industry Classification					
	Did not participate in IRR		Participated in IRR		Diff
	n	mean	n	mean	
Manufacturing	4,342	0.05	87	0.07	0.023
Electricity, gas	4,342	0.00	87	0.00	-0.004***
Water, sewerage, waste management	4,342	0.00	87	0.00	-0.002***
Construction	4,342	0.00	87	0.00	-0.002***
Wholesale, retail trade, repair vehicles	4,342	0.48	87	0.43	-0.076
Transportation, storage	4,342	0.02	87	0.02	0.008
Accommodation, food services	4,342	0.06	87	0.07	0.004
Information, communication	4,342	0.01	87	0.00	-0.008***
Finance, insurance	4,342	0.01	87	0.00	-0.008***
Real estate	4,342	0.05	87	0.06	0.020
Scientific, technical	4,342	0.02	87	0.06	0.040
Admin, support service	4,342	0.00	87	0.01	0.009
Public admin, defence	4,342	0.00	87	0.00	-0.000
Education	4,342	0.04	87	0.08	0.044
Human health, social work	4,342	0.04	87	0.00	-0.034***
Arts & entertainment	4,342	0.01	87	0.02	0.015

IRR = incentivized resume rating.

Notes: 9,825 total firms surveyed. Firms who participate in the longer survey respond to questions about their employees, vacancies, gender composition and infrastructure along with an Incentivised Resume Rating module. A total of 87 firms agreed to participate in the IRR. * $p < .1$, ** $p < .05$, *** $p < .01$.

Source: Authors' estimates.

Table A.6: Occupation lists provided to Jobseekers on Job Talash platform

Primary education	Secondary and tertiary education
Office Assistant Courier Childcare worker Cook Factory Worker Waiter Storekeeper/Inventory Manager Security Guard Housekeeping/Domestic Help Sweeper/Janitorial Staff Construction Worker Parlor employee Driver Electrician/Technician Plumber/Carpenter Other Skilled Labor (e.g. Brick Mason) Armed Forces—Police, Army, Firemen, etc	Sales/Marketing Manager/Assistant Manager Customer Service Officer / Enumerator Telemarketing Officer/Call Center Agent Data Entry Operator Teacher Research and Writing Jobs Accountant/Cashier Administration/Operations Officer/Clerk Computer Operator Receptionist/Front Desk Officer/Telephone Operator Supervisor/Controller Lab Assistant Software Developer/Graphic Designer/IT Doctors/Nurses Designer Engineer Lawyer Journalist/Media Officer Armed Forces—Police, Army, Firemen, etc,

Source: Authors.

Table A.7: Hypothetical analysis: Assuming full sign-up

	(1) Qualify educ	(2) Qualify gender	(3) Qualify gender
β_1 : Female _i	-0.013*** [0.001]	-0.446*** [0.029]	-0.618*** [0.028]
β_0 : Constant	0.614*** [0.013]	0.849*** [0.014]	0.892*** [0.013]
β_1/β_0	-0.02	-0.53	-0.69
Sample	Full Sample	Full Sample	Qualify educ
N	123,181,425	123,181,425	74,824,633

Notes: The unit of observation is a jobseeker-job dyad, assuming every individual surveyed signs up for the platform. We collect gender and education information for all individuals surveyed, and we use this to understand if these individuals would qualify for a given job along these two dimensions, had they signed up. The constant is the mean for males. Robust SEs in brackets, two-way clustered by jobseeker and vacancy.

* $p < .1$, ** $p < .05$, *** $p < .01$.

Source: Authors' estimates.

Table A.8: Firm-level gender segregation and opportunities open to women

	Qualify based on gender		
	(1)	(2)	(3)
β_1 : Female _i	-0.691*** [0.028]	-0.683*** [0.031]	-0.681*** [0.036]
β_2 : Female _i × Firm has < 50% female employees	0.564*** [0.064]	0.618*** [0.070]	0.619*** [0.080]
β_3 : Female _i × Firm has 51-99% female employees	1.029*** [0.143]	1.035*** [0.161]	1.125*** [0.136]
β_4 : Female _i × Firm has 100% female employees	1.612*** [0.061]	1.603*** [0.064]	1.625*** [0.055]
β_5 : Firm has < 50% female employees	-0.088** [0.034]	-0.106*** [0.040]	-0.099** [0.043]
β_6 : Firm has 51-99% female employees	-0.478*** [0.090]	-0.495*** [0.096]	-0.492*** [0.094]
β_7 : Firm has 100% female employees	-0.856*** [0.055]	-0.857*** [0.057]	-0.874*** [0.043]
β_0 : Constant	0.935*** [0.011]	0.937*** [0.012]	0.930*** [0.014]
P-value: $\beta_1+\beta_2=0$	0.03	0.30	0.38
P-value: $\beta_1+\beta_3=0$	0.02	0.03	0.00
P-value: $\beta_1+\beta_4=0$	0.00	0.00	0.00
Sample	Full Sample	Qualify educ+exp	Qualify educ+exp +select occp
N	3,330,146	2,185,452	791,681

Notes: The unit of observation is a jobseeker-job dyad, for all jobseekers who sign up and all jobs posted on the platform, excluding the 41 vacancies for which the firm did not report gender composition. Zero female firm is the omitted category. Robust SEs in brackets, two-way clustered by jobseeker and vacancy. * $p < .1$, ** $p < .05$, *** $p < .01$.

Source: Authors' estimates.

Table A.9: Mechanisms—Index of female friendly physical workspace

	(1) Qualify gender	(2) Interview apply	(3) Qualify gender	(4) Interview apply
β_1 : Female _i	-0.377*** (0.037)	-0.007 (0.029)	-0.393*** (0.037)	0.022 (0.028)
β_2 : Female _i × Index	0.301*** (0.051)	0.094** (0.039)	0.289*** (0.051)	0.101** (0.042)
β_3 : Index	-0.116*** (0.025)	-0.024 (0.022)	-0.141*** (0.027)	-0.017 (0.025)
β_0 : Constant	0.831*** (0.019)	0.098*** (0.021)	0.835*** (0.017)	0.090*** (0.019)
FE	No FE	No FE	Occp+Ind FE	Occp+Ind FE
N	2,076,849	2,148	2,076,849	2,148

FE = fixed effects.

Notes: The unit of observation is a jobseeker-job dyad, for all jobseekers who sign up and all jobs posted on the platform. Index refers to female friendly workspace index. Index includes indicators for if the firm has separate toilets and prayer spaces for women, and an indicator for if women work in a separate space (separate room/hall). This index is only computed for firms who answer questions about their infrastructure (53.9% of the sample). Robust SEs in brackets, two-way clustered by jobseeker and vacancy. * $p < .1$, ** $p < .05$, *** $p < .01$.

Source: Authors' estimates.

Table A.10: Explanatory power of industry and occupation in predicting gender restrictions

	Ad open to women		
	(1)	(2)	(3)
N	757	756	698
R^2	0.20	0.34	0.39
FE	Ind FE	Occp FE	Ind+Occp FE

FE = fixed effects.

Notes: This table reports the explanatory power (R-squared) of industry and occupation in gender restrictions. We regress an indicator for whether an ad is open to women on indicators for industry (column 1), occupation (column 2), or both (column 3). Each analysis drops singletons, i.e., industries with only 1 ad (column 1), occupations with only one ad (column 2), industry-occupation combinations with only 1 ad (column 3); hence the sample size varies between columns. Results are robust to dropping industries, occupations, and industry-occupation combinations with fewer than 5 ads. Standard errors are clustered by firm. * $p < .1$, ** $p < .05$, *** $p < .01$.

Source: Authors' estimates.

Table A.11: Relative value of CV attributes estimated from IRR choices

	CV chosen	
	(1)	(2)
β_1 : CV assigned Female name	-0.115* (0.068)	-0.122* (0.069)
β_2 : Experience	-0.003 (0.003)	-0.008 (0.006)
β_3 : Secondary Ed	-0.039 (0.029)	-0.027 (0.046)
β_4 : Tertiary Ed	-0.016 (0.012)	-0.045 (0.081)
β_5 : Secondary grades not reported		-0.016 (0.058)
β_6 : Tertiary grades not reported		-0.131 (0.139)
β_7 : Tertiary institute ranking=Medium		0.332* (0.179)
β_8 : Tertiary institute ranking=High		0.017 (0.145)
N	430	430

CV = curriculum vitae, IRR = incentivized resume rating.

Note: This table displays results from an OLS regression of 'CV Chosen' (a binary indicator equal to 1 if CV was chosen) on different CV attributes. The unit of observation is a CV. The table includes CVs with at least a secondary education. The omitted category is primary education. 'Experience' is a dummy. It is 0 for no experience at all and 1 for any experience greater than zero and up to five years. Robust standard errors in parentheses clustered by CV pairs. Tertiary institute ranking is based on the ranking scores of universities by the Higher Education Commission. 'High' ranking is assigned to all the universities that have a ranking score higher than the median score of 48.7 in our sample. 'Medium' for universities lying between 0 and 48.9. 'Low' is the omitted category for all those universities that have not been assigned any score due to non-recognition by HEC. Regressions in Col 1 and 4 are run on mixed gender pair CVs, Col 2 and 5 on single gender pairs and Col 3 and 6 on all the CV pairs. * $p < .1$, ** $p < .05$, *** $p < .01$.

Source: Authors' estimates.

Figure A.1: Text Message Screenshot (translation of Urdu text)

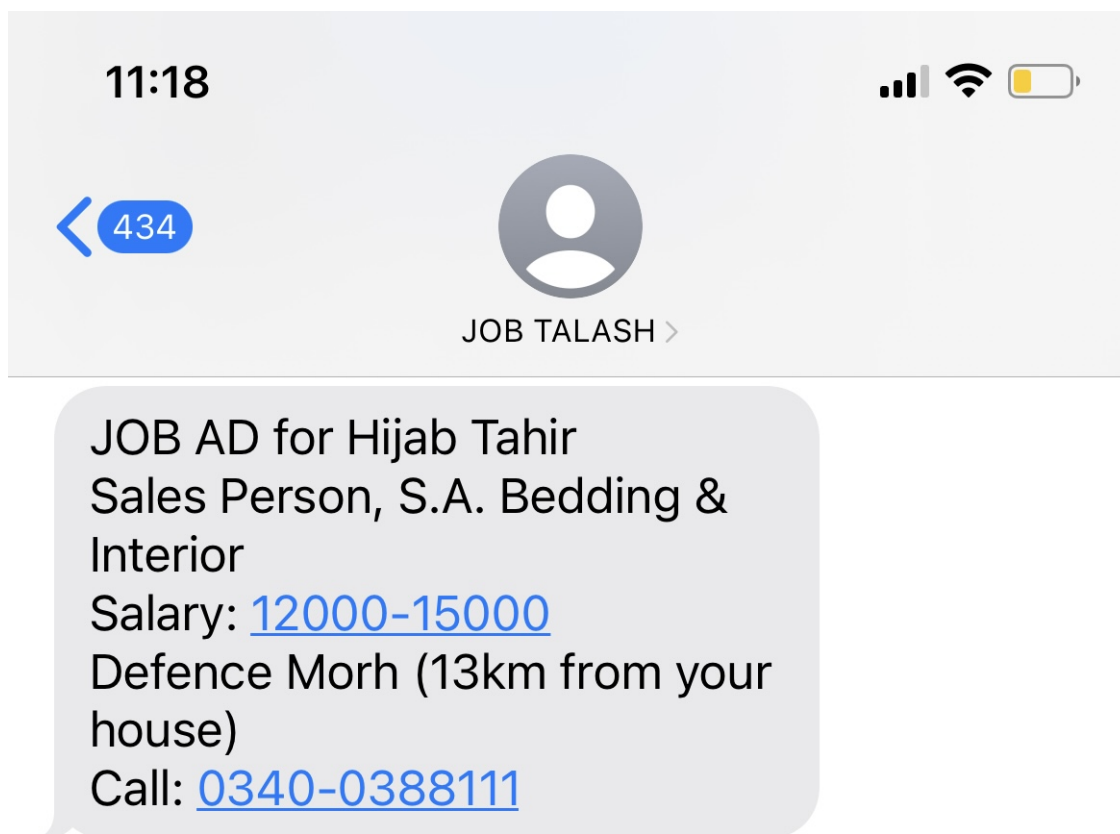
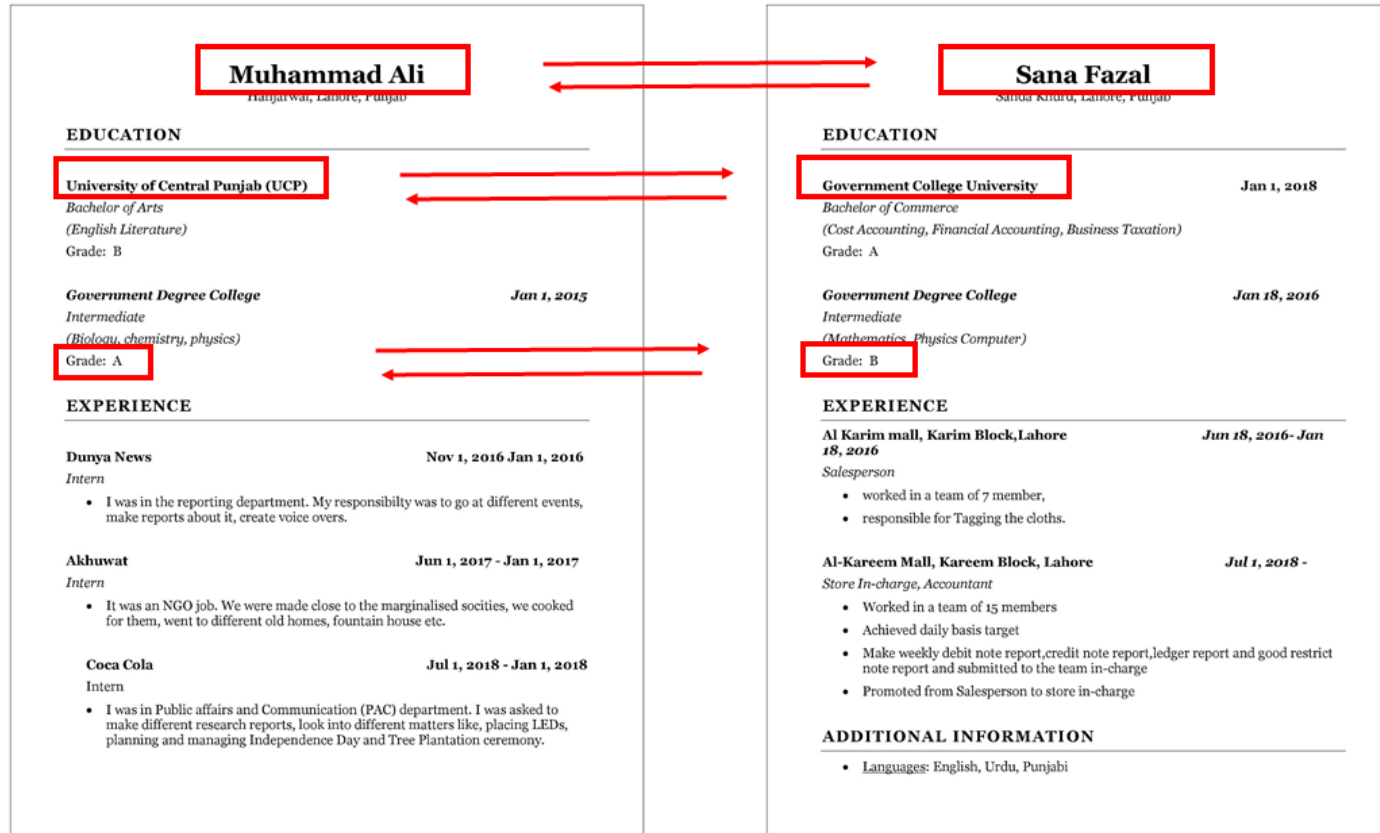


Figure A.2: Design of IRR: Randomized swapping of traits on CV



CV = curriculum vitae, IRR = incentivized resume rating.

Notes: This exhibit shows the swapping exercise for a CV pair. Three traits that were swapped in CV pairs were gender, secondary grade and university names. The traits to be swapped in any CV pair were determined randomly. Each of the traits was swapped with a probability of 50%.

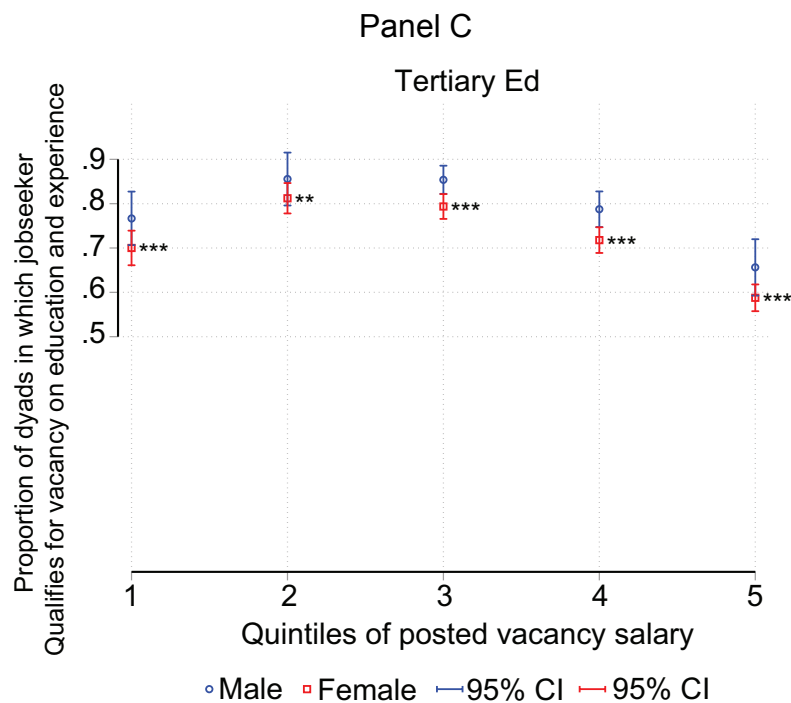
Disclaimer: These CVs contain fictional names; any similarity to an actual person is coincidental and unintentional.

Source: Authors.

Figure A.3: Qualify education/experience across salary quintiles, by education

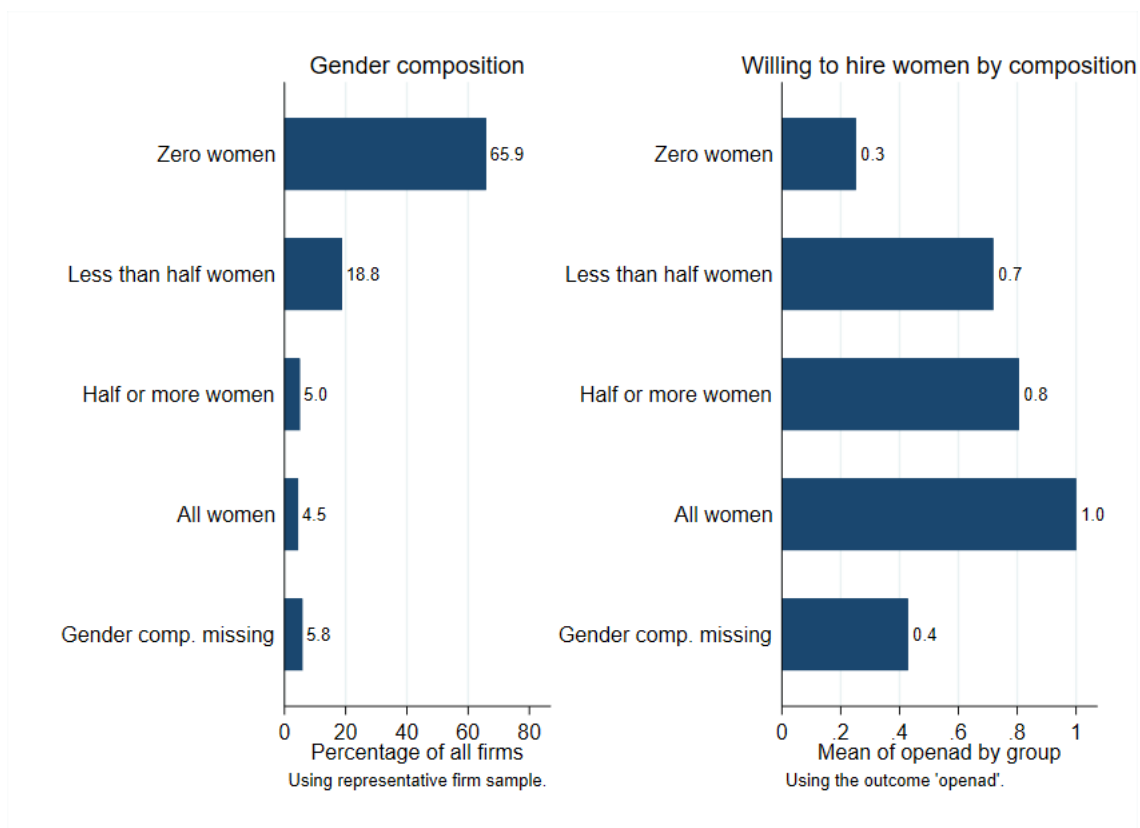


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Notes: This figure shows the results of repeating the dyad level analysis in Table 2, Panel A, with separate estimations on samples for each education level and within level, each quintile of the posted vacancy salary. The unit of observation is jobseeker-vacancy dyad. The outcome variable is an indicator for whether the jobseeker meets education and experience criteria for the vacancy. Robust SEs two-way clustered by jobseeker and vacancy; 95% confidence intervals shown. Stars shown alongside coefficients denote P-values from testing equality between female and male jobseekers. * $p < .1$, ** $p < .05$, *** $p < .01$.
Source: Authors' estimates.

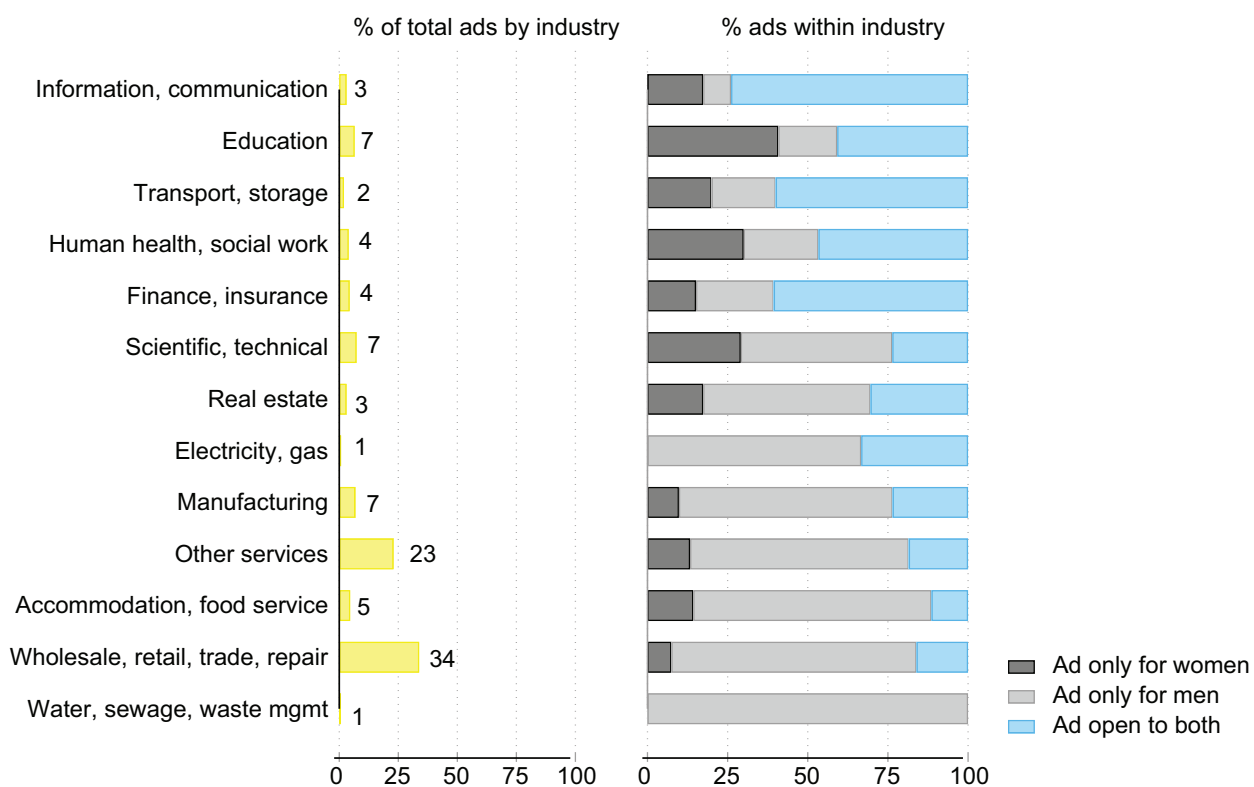
Figure A.4: Firm gender composition and willingness to hire women



Notes: In Panel A, unit of observation is the firm (N = 332). In Panel A, unit of observation is the job ad (N = 758).

Source: Authors' estimates.

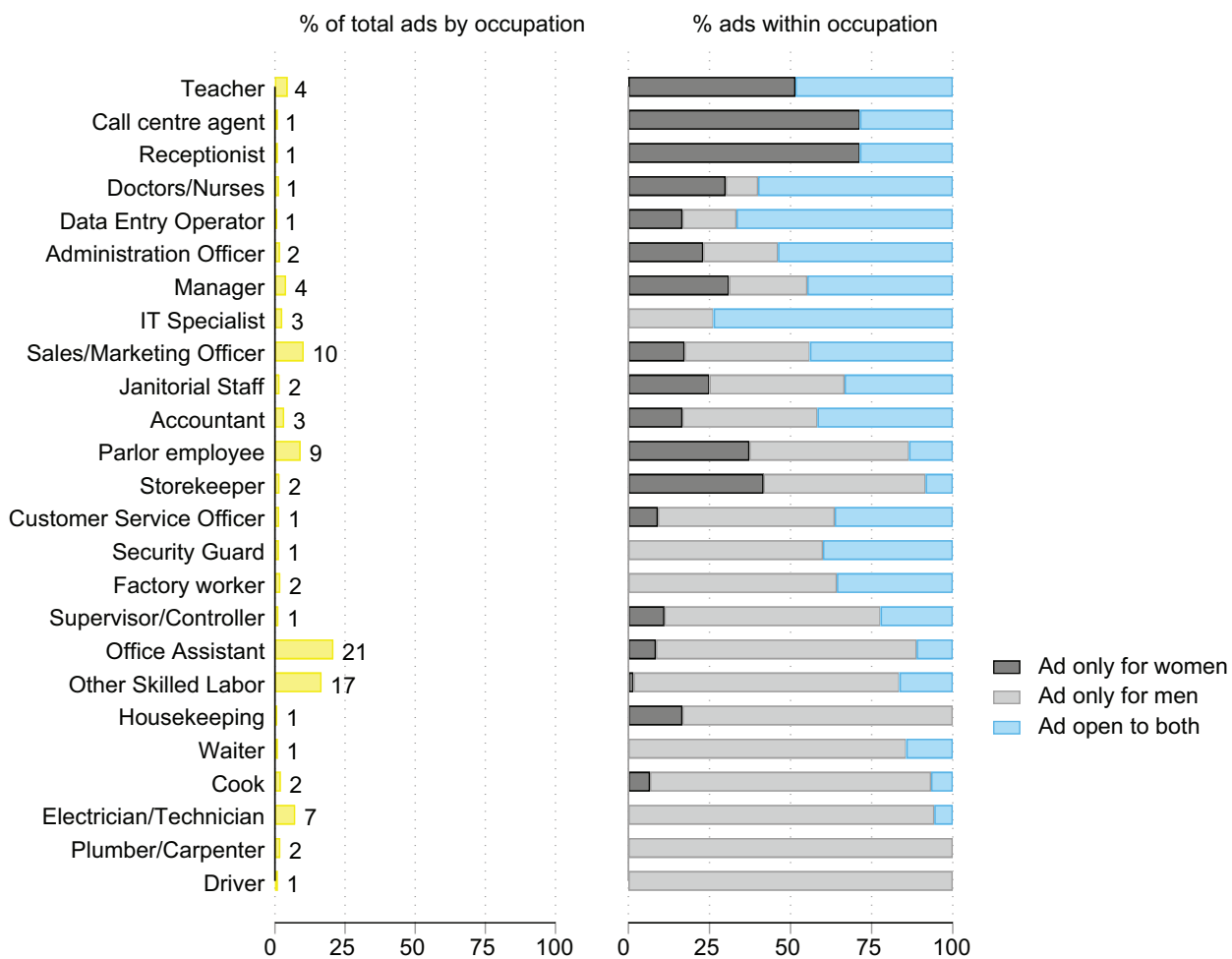
Figure A.5: Composition and gender restrictions of ads on platform by industry



Note: Restricted to industries with 5 or more ads.

Source: Authors' estimates.

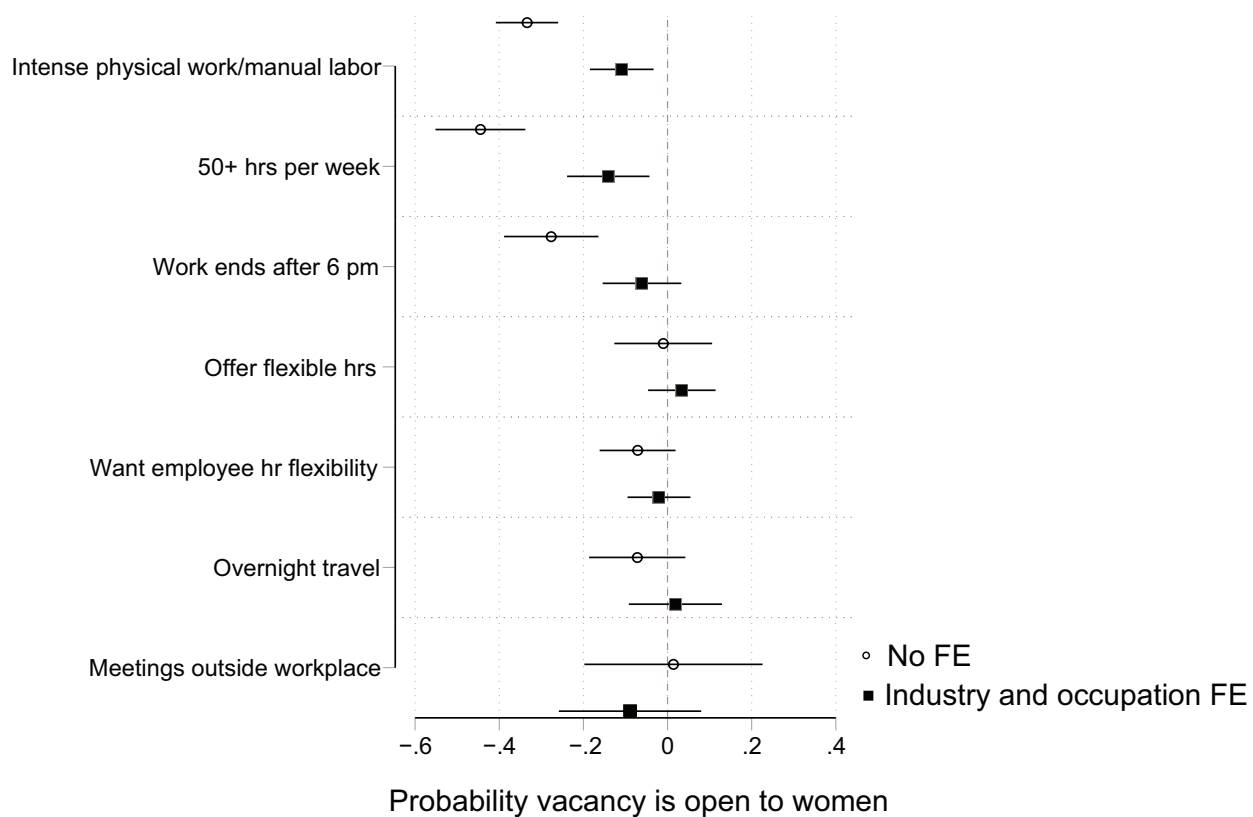
Figure A.6: Composition and gender restrictions of ads on platform by occupation



Note: Restricted to industries with 5 or more ads.

Source: Authors' estimates.

Figure A.7: Vacancy characteristics and gender restrictions—with and without fixed effects

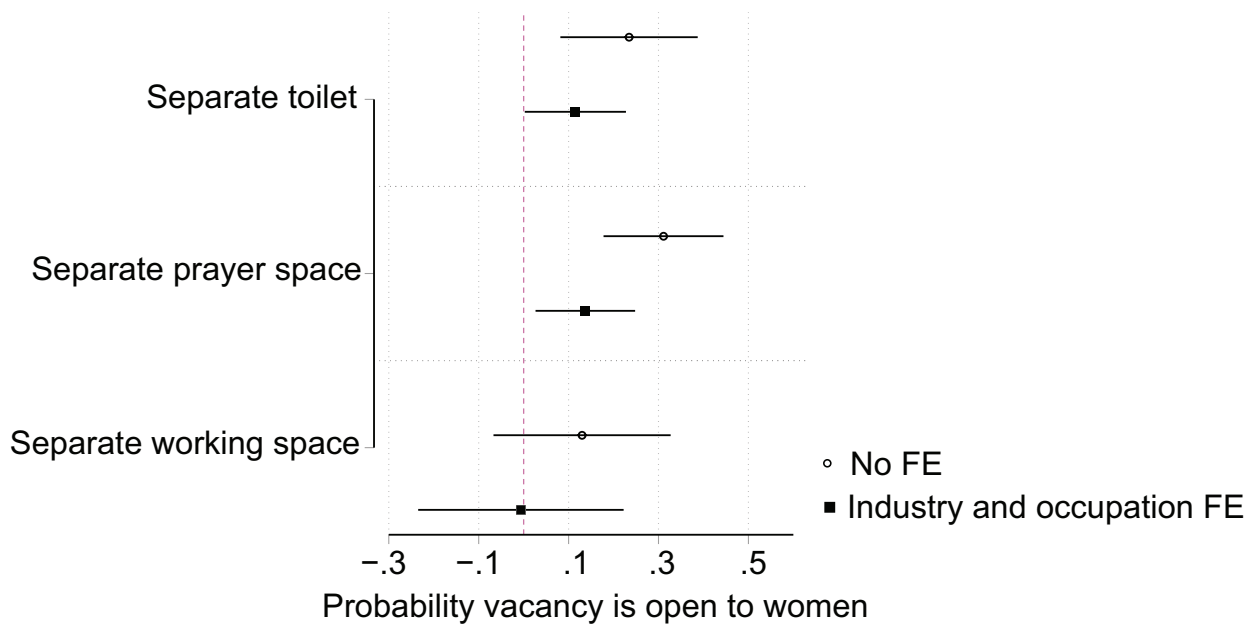


FE = fixed effects.

Notes: Unit of observation is the vacancy. Data comes from 332 firms who post a total of 758 job advertisements. Standard errors clustered at the firm level; 95% confidence intervals shown.

Source: Authors' estimates.

Figure A.8: Firm characteristics and gender restrictions—with and without fixed effects



FE = fixed effects.

Notes: Unit of observation is the vacancy. Data on separate toilet and prayer space comes from 178 firms who post 452 ads. Data on separate work space comes from 129 firms who post 339 ads. Separate implies separate spaces for women and men at the firm. Standard errors clustered at the firm level; 95% confidence intervals shown.

Source: Authors' estimates.