

Workplace Attributes and Women's Labor Supply Decisions: Evidence from a Randomized Experiment [†]

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Social norms discouraging women from working, and particularly from working with men, are prevalent in many settings with low female employment. I implement a field experiment and survey experiment with educated women via a job matching platform in Pakistan, one such setting, to elucidate the role of supervisor or employee gender on women's job search. At the job application stage, among women who are reminded about job search discussions with their family, information about a male supervisor significantly decreases the job application rate by nearly 60%. However, at the stage of accepting an offer, women are willing to accept a male supervisor with sufficiently high salary, but exhibit a strong preference to work in an environment with mostly female coworkers.

JEL Codes: J16, J24, J40, D83, O10

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1 Introduction

Women have made gains relative to men in terms of educational attainment globally, but lag in many employment outcomes (Addati et al., 2016; UNESCO, 2022a,b). These gaps in employment have widened in recent years through the covid-19 pandemic, and have not fully recovered (World Economic Forum, 2023). Firm-side factors such as vacancies being explicitly or implicitly only open to men can constrain women's employment and wages (Gentile et al., 2024; Hyland et al., 2020; Altonji and Blank, 1999; Goldin and Rouse, 2000; Kuhn and Shen, 2013; Hangartner et al., 2021; Ozen et al., 2019; Chaturvedi et al., 2021). Social norms, lack of access to bank accounts, and psychosocial factors can also constrain women's job search and employment from the supply side (Jayachandran, 2021; Dean and Jayachandran, 2019; Field et al., 2021; Bursztyn et al., 2020; McKelway, 2023). A preference for work that conforms to own gender identity could also lead women to search for work in female-dominated occupations and workplaces (Akerlof and Kranton, 2000; Cortes and Pan, 2017).

In this paper, I conduct a field experiment and a survey experiment on a job matching platform that serves women with post-secondary education in Lahore, Pakistan. Four times as many men as women in urban parts of Punjab province (where Lahore is located) work for pay (Pakistan Bureau of Statistics, 2017). 87% of women and 80% of men in Punjab province agree that pre-school aged children suffer with a working mother; 90% of men and women in Punjab province agree that men should have more right to a job than women when jobs are scarce (World Values Survey Association, 2018). Given social norms in this setting further discouraging women from working in mixed gender spaces, as well as women's concerns historically about safety in mixed gender spaces, I study the impact of information about supervisor gender or employee gender on women's job search and employment decisions. Qualitative research on women's work in Pakistan finds that women face family pressure not to work as working outside the home would lead to interacting with men outside the family which could induce gossip and negative censure of the family; such censure of a woman's work outside the home can be exacerbated when

she is married and joins her husband's family (Afzal, 2024). In Punjab province, about 75% of women report that other household members made the decision about whether they could work without input from the women themselves (Pakistan Bureau of Statistics, 2017). Across Pakistan, a quarter of women who are not working report that the reason is a lack of permission from their husband or father (Pakistan Bureau of Statistics, 2017). Thus, I also introduce experimental variation in salience of family job search discussions at the time of making job search decisions. The Middle East, North Africa, and South Asia are the regions with the lowest levels of female employment and some shared social norms, making Pakistan a relevant setting.

Social norms in this setting prescribe relative seclusion of women and limited mobility of women outside the home, in order to preserve purity, chastity, and signal family status that the women do not need to move in public as their male family members are able to provide for them (Keddie, 2007; Papanek, 1971). As women began entering the workforce in Pakistan, concerns about harassment from men, particularly male clients, led to workplaces finding ways to segregate men and women, for safety reasons (Jasmin Mirza, 2022). Social norms further discourage women and men from working together; in fact 85% of Pakistani Muslims (Pakistan is an Islamic Republic, with a population that is overwhelmingly Muslim) prefer a legal mandate for gender segregation in the workplace (Heimlich, 2011). These norms particularly discourage women from working in mixed-gender environments in some of the regions with the lowest levels of female labor supply (Gauri et al., 2019; Ismail et al., 2022; Zeitoun et al., 2023; Sen et al., 2022). In such settings, job search limited to female-dominated work environments could contribute to low levels of women's employment.

It is difficult to disentangle empirically what the root cause is of expectations in Pakistan that women avoid work or that women and men should work separately: reasons range from safety concerns, purity and chastity norms, or ability of male family members to signal that they are able to provide for their families (Jasmin Mirza, 2022; Papanek, 1971; Afzal, 2024; World Values Survey Association, 2018). In this paper, I seek to provide

experimental evidence on whether and how information about supervisor or employee gender impacts women's employment beginning at the job search stage, in addition to how such information impacts women's job search when they are reminded about family job search discussions.

Via the field experiment, I study job applications. I experimentally manipulate the information environment on the job matching platform by randomizing at the individual level whether jobseekers receive information about supervisor and/or employee gender at vacancies to which they are matched on the platform. Additionally, I cross-randomize a treatment that makes family job search discussions salient at the time of the application decision. Among those for whom family job search discussion is made salient, the application rate is nearly 60% lower when jobseekers receive information about a male supervisor at the vacancy. Since I use the true distribution of supervisor and employee gender in job postings on this job search platform, rather than a stylized setting to maximize statistical power, the field experiment is underpowered. In an alternate simpler specification that has potential identification challenges but more statistical power, I additionally find that information about female coworkers increases the application rate by 67% among those for whom family job search discussion is made salient.

Supervisor gender or employee gender could be constraints at the offer acceptance stage, even if they are not at the application stage. Job offers are comparatively infrequent events, so I study this margin using a survey experiment at baseline. I ask respondents to imagine two nearly identical job offers, and vary key dimensions of supervisor and/or coworker gender between the offers. I begin by having them imagine both jobs with the same stated salary, and then with a higher salary at the male-dominated position. Overall, women are more elastic to a male-dominated workplace than they believe their parents would advise them to be. Approximately two-thirds of respondents would accept a position with a male supervisor over a position with a female supervisor if it paid up to 10,000 PKR more, and the coworkers at both positions were female. Regardless of the supervisor gender, the rate of accepting a position with mostly male coworkers over a position with mostly

female coworkers, even if it paid 10,000 PKR more, is much lower at approximately 50%. For most of these comparisons, women do not report making choices significantly different from what their parents would advise. The results are consistent with women preferring to work in female-majority workplaces.

Even in the field experiment, higher-salary positions increase the probability that a jobseeker will apply to a position with mostly female employees, but do not shift jobseekers to applying to more male-dominated positions. The motivating factor could be social norms, or other concerns raised in the literature such as safety in the workplace, or the interaction between women's labor market decisions and marriage (Folke and Rickne, 2022; Bursztyn et al., 2017; McKinnish, 2007; Svarer, 2007).

This paper contributes to four strands of the literature. First, a growing literature shows that family pressure negatively impacts women's labor supply in settings with low female labor force participation (Bernhardt et al., 2018; Bursztyn et al., 2020; Dean and Jayachandran, 2019; Field et al., 2021; McKelway, 2023).

Second, survey research has documented social norms discouraging women from working in mixed-gender spaces in regions with very low female labor force participation which stem at least in part from norms surrounding purity and chastity (Gauri et al., 2019; Ismail et al., 2022; Sen et al., 2022).

Third, formal mobile and internet based job search and matching platforms are becoming increasingly prevalent in Pakistan and worldwide. I contribute to a growing literature studying job search on such platforms (Ben Dhia et al., 2022; Kelley et al., 2021; Jones and Sen, 2022; Wheeler et al., 2022; Belot et al., 2022, 2018; Kircher, 2020; Gee, 2019).

Finally, a preference for working in female-dominated work environments could constrain women's labor supply decisions leading women to self-select out of job search and contribute to low female employment and further exacerbate occupational segregation by gender (England, 2000; Levanon et al., 2009; World Bank, 2012). Cultural norms surrounding seclusion of women can influence women's occupational choice (Papanek,

1971).

The two most closely related experiments tackle questions related to women’s versus men’s job search as a function of signaling about workplace gender, but are focused in the North American context where women’s overall employment rates are relatively high and social norms discouraging women from working in mixed-gender spaces are less relevant. Neither of these papers find significant impacts of information about supervisor, coworker, or recruiter gender on women’s application rates. As part of a broader experiment in 16 major cities in the US, Flory et al. (2015) introduce experimental variation in whether a job ad signals competition against male or female coworkers, and evaluation by a male or female supervisor. Here, they do not find that women apply differentially to jobs based on information received about coworker gender or supervisor gender. Castilla and Rho (2023) conduct an experiment with one project assistant position in the US over two weeks. Women’s application rates do not differentially respond to recruiter gender.

This paper addresses a gap in the literature by identifying how information about supervisor or employee gender impacts women’s job search, in a context where both overall female employment rates are low and women are discouraged from working in mixed-gender environments. Furthermore, this paper introduces experimental variation of salience of family job search discussion; this element is novel relative to the most closely related papers and is important given that women’s labor supply is a household decision in this context. The field experiment is somewhat underpowered, but to the best of my knowledge, this is the first such causal estimate.

2 Field Experiment

This project was conducted on a job matching platform called Job Asaan in Lahore, Pakistan. Women at least in their final year of secondary school were eligible to use the platform, meaning that the sample comes from the population of interest: educated women who have

signed up for a job search service and thus are participating in the labor force.¹ The service is free to both jobseekers and firms; users only need a simple mobile phone to access the platform. More details regarding the platform and data are provided in Section 3.

I implemented field experiments on the Job Asaan platform over five consecutive job matching rounds, spaced approximately 1.5 weeks apart, in March and April 2019. Jobseekers were separately and concurrently randomized at the jobseeker level into three different treatments (creating a total of 8 cells) prior to any of these matching rounds.^{2,3}

The first experiment was a priming experiment. At the beginning of the phone call for each matching round, immediately before expressing an interest to apply to any of the vacancies with which she matched in that round, those in the priming treatment group were asked "We are also interested in understanding how women make decisions about their jobs. Have you discussed your job search with your family in the last week?" In Pakistan and more broadly in South Asia, women's labor supply decisions are determined as a function of own and family preferences (Dean and Jayachandran, 2019). Thus, this question was designed to make previous conversations that the jobseeker had already had with her family salient in her mind at the time of making decisions about job applications. Responding to this question was not required, but of those who responded, 70% responded yes.⁴ The exact discussions surrounding job search that might have taken place between the jobseeker and her family are not something that I am able to observe. If the jobseeker anticipated based on prior discussions that her family might not be supportive of her job search or applying to specific types of jobs, this treatment would decrease the likelihood

¹This platform was created alongside the Job Talash platform; both by the research team at Centre for Economic Research Pakistan (Field and Vyborny, 2022; Field et al., 2023; Gentile et al., 2024).

²The randomizations were stratified on prior activity on the platform, education, and a measure of mobility. However, this led to multiple strata with fewer than 8 observations in each strata; in such a setting, strata fixed effects can lead to bias in estimation since the cross-randomization yields 8 treatment bins (Correia, 2015). Thus strata fixed effects are not included in estimation.

³Appendix Table A.7 provides the number of jobseekers and the number of matches in each randomization cell.

⁴Across the five matching rounds, the rate of responding yes was respectively 74%, 50%, 90%, 90%, and 77%. Not every jobseeker received a match in every round, and the types of jobs posted were not randomized across rounds. Variation in responding yes across rounds could thus reflect variation across which individuals matched to jobs in which rounds.

that she applies to a given job.

I interpret the priming treatment as having made salient these discussions, but remain agnostic as to what aspects of these discussions may have been made salient since I do not observe the discussions. My preferred interpretation of the priming treatment is that it makes salient prevalent social norms in Pakistan which prescribe that women should be secluded and exercise limited movement outside the home, in order to preserve purity, chastity, and signal family status, and are often imposed and propagated by women's family (Keddie, 2007; Papanek, 1971).

The latter two experiments are both information experiments. Jobseekers were randomized to either receive or not receive information about supervisor gender at each vacancy they matched with. Jobseekers were also randomized to either receive or not receive information about employee gender at each vacancy they matched with.⁵ In addition to prescribing women to stay within the home, social norms discourage women and men from working together; 85% of Pakistani Muslims (Pakistan is an Islamic Republic, with a population that is overwhelmingly Muslim) prefer a legal mandate for gender segregation in the workplace (Heimlich, 2011). When women first entered the workforce in Pakistan, harassment from men, particularly male clients, led workplaces to segregate men and women for safety reasons (Jasmin Mirza, 2022). Safety concerns can directly lead women to prefer to work separately from men, but this also further entrenches a social norm of women being expected not to work with men. Thus, I use the cross-randomized experiments to estimate the effect of information about supervisor gender or employee gender among women primed to think about family job search advice at the time of making their application decisions. With this experiment, I am not fully able to disentangle why those primed to think about family job search discussions might respond differently to information about supervisor gender or employee gender: i.e. I cannot disentangle whether priming makes salient discussions about social costs to working with men or concerns that

⁵If a jobseeker in a control group asked for information that she was not assigned to receive, the protocol was that the call center agent would tell her that Job Asaan could not disclose that information. In practice, while this is an aspect of a job that women are likely interested in, job postings do not usually include this information, so it was not something that jobseekers asked about.

family members have about the safety/security risks of working with men. However, the design does allow me to estimate how highly educated women in Pakistan respond to information about supervisor or employee gender in their job search, and if this is different among women primed to think about family job search discussions.

The distributions of supervisor and employee gender were not fixed in a way to maximize statistical power, but rather, are real vacancies that were open to women with at least a secondary education in Lahore. Thus, the experiment shows how information about supervisor and/or employee gender publicized in a real distribution of jobs advertising to women might impact women's job search. This also means that a minority of firms did not provide information about supervisor or employee gender to the platform. If jobseekers in the relevant treatment groups matched to such a vacancy, they were informed that the platform did not have that information for the given vacancy.

As shown in Table 1, the treatments are generally balanced across observable characteristics. Age and marital status are slightly imbalanced, and thus included as covariates in analysis. Table 4 confirms that results are robust to omitting these covariates.

Table 1: Balance

	(1) Age	(2) Employed	(3) Student	(4) Secondary	(5) Bachelors	(6) Post-Bachelors	(7) Married	(8) Experience	(9) BL Applications
Priming	0.031 (0.965)	0.009 (0.889)	-0.032 (0.695)	-0.011 (0.768)	-0.044 (0.587)	0.031 (0.700)	0.041 (0.328)	-0.270 (0.428)	0.007 (0.927)
Supervisor	0.722 (0.358)	0.018 (0.794)	-0.020 (0.812)	-0.032 (0.344)	-0.024 (0.770)	0.017 (0.835)	0.166*** (0.002)	0.518 (0.189)	0.017 (0.836)
Employee	-0.113 (0.875)	-0.006 (0.931)	0.026 (0.763)	-0.010 (0.790)	0.030 (0.731)	-0.020 (0.821)	0.057 (0.242)	-0.000 (0.999)	-0.023 (0.788)
Employee \times Priming	0.839 (0.483)	0.006 (0.944)	-0.010 (0.933)	0.049 (0.378)	-0.072 (0.544)	0.046 (0.701)	-0.012 (0.869)	0.585 (0.294)	0.044 (0.704)
Supervisor \times Priming	-1.965* (0.061)	-0.051 (0.592)	0.067 (0.577)	0.076 (0.177)	0.128 (0.286)	-0.160 (0.176)	-0.174** (0.019)	-0.721 (0.144)	-0.101 (0.396)
Supervisor \times Employee	-0.801 (0.469)	-0.036 (0.691)	0.016 (0.892)	0.022 (0.649)	0.015 (0.901)	-0.023 (0.847)	-0.119 (0.136)	-0.809 (0.124)	0.001 (0.994)
Priming \times Supervisor \times Employee	1.047 (0.530)	0.003 (0.984)	-0.034 (0.839)	-0.088 (0.267)	-0.018 (0.913)	0.087 (0.601)	0.102 (0.348)	0.536 (0.482)	0.058 (0.725)
Constant	23.957*** (0.000)	0.140*** (0.003)	0.672*** (0.000)	0.057** (0.041)	0.486*** (0.000)	0.457*** (0.000)	0.047* (0.079)	1.329*** (0.000)	0.586*** (0.000)
Observations	582	465	515	582	582	582	542	582	582

Notes: Table reports balance across treatments. Outcome variables are baseline characteristics at the time of enrollment onto the platform. Robust standard errors are reported in parentheses. Unit of observation is the jobseeker. * $p < .1$, ** $p < .05$, *** $p < .01$.

3 Context and Data

Jobseekers were enrolled onto Job Asaan in two concurrent methods. First, a state government agency conducted a media campaign in July 2018, inviting women with a high school diploma or higher levels of education to sign up for the platform. Second, Job Asaan conducted outreach events at colleges and universities in Lahore. Here, women who were in their final year of high school or college were invited to attend a CV workshop. Job Asaan staff would lead the students in filling out the sign-up form for the service which also created a CV for them. In both enrollment methods, the signup instrument collected the basic information required for matching jobseekers to vacancies, their education and work history to construct a CV, and a survey experiment described further in Section 5.⁶

⁶IRB approval was obtained through Duke University (Protocol 2018-0541). Jobseekers completed an informed consent form for use of the Job Asaan platform, which included notice that information collected would be used for research on employment and gender, and kept strictly confidential. Jobseekers were also informed that they could opt out at any point.

The signup process yielded a total of 4,061 participants as of March 2019, when the experiment began. 1,824 completed the CV process entirely and were thus able to use the platform.⁷ Of these individuals, 599 interacted with the platform between when they completed the sign-up and when randomization took place for the experiment; meaning that they either picked up a phone call from the platform or initiated a call to the platform.⁸ The final analysis sample is the 582 of these 599 individuals who matched to at least one vacancy over the course of the field experiment.⁹

Other work in this setting shows that more highly educated women in Lahore are more selective in their job search (Gentile et al., 2024). Thus, women with secondary and post-secondary education are the population of interest in this study. Indeed, women in the analysis sample skew much more highly educated than in Lahore overall, which reflects the intentional sampling for this project. Table 2 reports descriptive statistics for this analysis sample in columns (1) to (3), and for a representative sample of women aged 18-65 in Lahore from the 2018 Labor Force Survey. The average jobseeker is nearly 24 years old, younger than the average adult woman in Lahore who is 35 years old. Thirteen percent of jobseekers in the analysis sample are employed; 67% are currently studying. These rates are higher than in Lahore more broadly, where just under 10% of women are respectively employed and currently studying. The education level of women in the sample is higher than in women in Lahore overall, reflecting the intentional sampling for this study. 5.5% of jobseekers in the analysis sample have some secondary school as their highest level of education, compared to 35% of women in Lahore. 48% of jobseekers in the analysis sample have some college education, compared to 11% of women in Lahore. The remaining 45% of the analysis sample has more than a bachelors education compared to 6% of women in Lahore. Conversely, under 12% of jobseekers are married, while nearly 73% of women in

⁷Those who signed up for the service but did not complete the CV process were randomized into the information experiments described below at baseline. However, they were not able to apply for vacancies without a complete CV and are thus not in the analysis sample.

⁸For any calls from the platform, the protocol was to call at least three times over two days to reach the individual.

⁹This decrease in sample size from the initial sign-up sample has significantly reduced statistical power compared to initial projections; Section 4 includes discussion of statistical power.

Lahore are married. The average jobseeker in the analysis sample has nearly 1.3 years of work experience.

Table 2: Summary Statistics: Jobseekers

	Analysis Sample			Lahore		
Variable	N (1)	Mean (2)	Std. Dev. (3)	N (4)	Mean (5)	Std. Dev. (6)
Female	582	1	0	6696	.49	.5
Age	582	23.964	5.124	3284	34.66	12.487
Employed	465	.131	.338	3284	.095	.294
Student	515	.672	.47	3284	.094	.292
Secondary	582	.055	.228	3284	.349	.477
Bachelors	582	.479	.5	3284	.11	.313
Post-Bachelors	582	.452	.498	3284	.059	.236
Married	542	.118	.323	3284	.728	.445
Experience	582	1.289	2.316	0	.	.

Notes: Columns 1-3 are from the analysis sample; Columns 4-6 are the author's calculations from the 2018 Labour Force Survey for Pakistan, restricted to Lahore. All but the first row in Columns 4-6 restrict to only women. The Labour Force Survey does not ask about work experience.

The platform enrolled firms on a rolling basis from a stratified random sampling across administrative zones of the Lahore metropolitan area, described the Job Asaan service, and offered firms the opportunity to enroll in the service at no cost. Firms interested in listing vacancies provided information regarding the basic educational and experience qualifications for the position, salary, gender composition of the firm, supervisor gender for the open position, and how flexible the hours would be for the open position. Additionally, vacancies were also listed through targeted approaches to firms in neighborhoods or industries (such as banking, education, high-end retail, and healthcare), which were likely to have vacancies open to women with secondary or tertiary education.¹⁰

¹⁰Firms that preferred to hire men could post job postings through a related job matching platform which facilitated job search across gender (see Field et al. (2023); Gentile et al. (2024)).

The combined process yielded a total of 64 vacancies that Job Asaan jobseekers matched to in March-April 2019. The most common occupations were teaching, management, sales, enumerator/call center agent, accountant, and writing/research. By construction, all of these vacancies were willing to hire women. The median salary was 18,000 PKR/month, against a minimum wage of 15,000 PKR/month (approximately \$150 USD). Forty-five of the vacancies (70%) allowed some amount of flexibility with work hours. Seventeen vacancies (27%) were at firms with majority female employees and 29 vacancies (45%) were at firms with majority male employees. Four vacancies reported an even split of male and female employees; a further 14 vacancies (22%) were at firms that did not provide employee gender composition. Twenty vacancies (31%) had a female supervisor, 41 vacancies (64%) had a male supervisor, and three vacancies (5%) did not report supervisor gender.¹¹

Nearly weekly, the platform matched jobseekers to these vacancies based on whether they had the appropriate level of education and experience that the firm required for the job, whether the firm was willing to receive applications from women, and whether the job posting was for an occupation that the jobseeker asked to be matched with. The platform notified jobseekers of matches via a text message (SMS) and phone call to facilitate a job application. Both the SMS and phone call contained the same information: the jobseeker's name, and characteristics of the vacancy: job title, firm name, salary, location, whether the position has flexible working hours, and a statement clarifying that the position was open to women. This latter statement is important to prevent jobseekers from inferring whether the firm would be willing to hire women from the inclusion of information about supervisor or employee gender. Vacancies in Pakistan routinely list whether they are looking for male or female applicants; firms with women employed are much more likely to be open to hiring women in this context than firms without any women employed (Gentile et al., 2024).

Jobseekers matched on average to 9.3 vacancies over the course of the experiment. Matches are determined by jobseeker characteristics: education, experience, and which

¹¹Appendix Table A.1 reports summary statistics about the vacancies, at the jobseeker-vacancy match level.

occupations they wanted to be matched to, prior to randomization, and thus matches should not be affected by the treatment assignment. Appendix Table A.6 confirms that matches to vacancies with male supervisors, female supervisors, male employees, and female employees, are balanced across treatment arms.¹² The control mean application rate overall is 0.07. This application rate is higher than for women overall (0.008) and for women with some tertiary education (0.004) from a nearly representative sample for Lahore (Gentile et al., 2024). This control group application rate translates to approximately 0.6 applications per user per month. The monthly application rate falls in the middle of a wide range for platforms that cater to jobseekers with at least secondary education in low- and middle- income countries. The monthly application rate is higher than in South Africa (0.03) and Nigeria (0.12), but lower than in Chile (1.22) and India (1.25) (Wheeler et al., 2022; Archibong et al., 2022; Banfi et al., 2019; Kelley et al., 2021). Unlike my setting, these other samples of jobseekers are not restricted by gender, and the platforms are internet-based requiring a smartphone or computer, thus catering to a population at a higher socio-economic level.

I use two types of administrative data for analysis. First, jobseekers interested in the service completed a short enrollment form which collected the basic information necessary for matching jobseekers to vacancies: work experience, educational attainment, occupations they were interested in being matched with, contact information, and age.¹³ The enrollment form also asked questions to construct their CV, including details about degrees, trainings, and their work history.

The second type of administrative data comes from the matching rounds. Over the course of the experiment, 64 vacancies were advertised via the platform. Based on education, work experience, and interest in the occupation, Job Asaan determined which jobseekers matched to which of these vacancies. For each matched jobseeker-vacancy pair, in addition to the treatment status and other jobseeker-level characteristics, I observe characteristics of the job, such as salary, location, whether the job allowed flexible working

¹²Available upon request, the total number of matches per jobseeker is also balanced across treatments.

¹³Age was required to confirm that jobseekers were above the age of 18 or had parental permission.

hours, and occupation. I observe which jobseekers matched with which vacancies, and whether the jobseeker applied to and was interviewed for each vacancy to which she was matched.

A baseline survey complements the administrative data. In the baseline survey, the jobseeker provided basic demographic information, and completed a series of survey exercises to measure willingness to accept a male supervisor and/or male coworkers when choosing between two jobs. These are described in more detail in Section 5.

4 Job Applications

The main analysis identifies how information about supervisor gender or employee gender impacts job application decisions, including among women for whom family job search discussions are made salient at the time of application. The main specification, Equation 1, fully interacts indicators for all three field experiment treatments. P_i denotes whether the jobseeker was randomized to receive the priming treatment on each matching round, S_i denotes whether the jobseeker was randomized to receive information about supervisor gender of each match, and E_i denotes whether the jobseeker was randomized to receive information about employee gender at each match. The vector W_{ik} includes age and marital status since these were slightly imbalanced at baseline, and the number of vacancies that jobseeker i matched to in round k . The vector D_v includes vacancy characteristics: salary, whether the position has flexible working hours, indicators for the most frequent occupations, and fixed effects for the neighborhood of the job within Lahore.¹⁴ I estimate Equation 1 on separate subsamples: matches to vacancies with respectively a male supervisor, a female supervisor, mostly male employees, and mostly female employees, to ascertain the impact of each type of information. Standard errors are clustered on jobseeker, which is the unit of randomization, and vacancy, which is the unit at which the information content of the information treatments varies.

¹⁴For any covariates with missing observations, I assign a value of the mean of the variable across the other observations, and include a binary variable flagging the missing observations in the estimation.

$$Y_{ivk} = \beta_0 + \beta_1 P_i + \beta_2 S_i + \beta_3 E_i + \beta_4 S_i P_i + \beta_5 E_i P_i + \beta_6 S_i E_i + \beta_7 P_i S_i E_i + \Lambda W_{ik} + \Gamma D_v + \varepsilon_{ivk} \quad (1)$$

In studying the impact of information about supervisor gender, the coefficients of interest are β_2 , the direct effect of information about supervisor gender on the application rate, and $\beta_2 + \beta_4$, the effect of information about supervisor gender when family job search discussion is made salient at the time of application. Table 3, Panel A, Column 1, reports the results of Equation 1 on the sample of matches to vacancies with a male supervisor.¹⁵ The minimum detectable effect size is less than 0.065 for β_2 , at a significance level of 0.05. β_2 , denoting the overall effect of information about a male supervisor on the application decision, is -0.029 (33% decrease in the application rate), but not statistically significant. The effect of information about a male supervisor among those primed to think about family job search discussion, $\beta_2 + \beta_4$, is -0.050 (57% decrease), and statistically significant at the 5% level. When primed to think about family job search discussion, jobseekers are significantly less likely to apply to vacancies they are informed have a male supervisor. This pattern could be due to social norms, which in turn could be a result of concerns about sexual harassment in the workplace, or about perceptions about how their employment decisions might interact with their marriage, either current or prospective (Folke and Rickne, 2022; McKinnish, 2007; Svarer, 2007; Bursztyn et al., 2017). The pattern could also be due to jobseekers' families, who have more experience with the labor market, advising that male supervisors are less likely to hire a female applicant (Chiplunkar and Goldberg, 2023; Gentile et al., 2024), or that such positions pose safety risks (Jasmin Mirza, 2022). I cannot fully disentangle these mechanisms, but explore them further in Section 4.1.

¹⁵All panels and columns of Table 3 include jobseekers across all eight cells of the experiment, as is necessary for Equation 1 to be identified.

Table 3: Job Applications

Panel A: Supervisor		
	(1)	(2)
	Male Supervisor	Female Supervisor
$\beta_1: P_i$	-0.013 (0.025)	-0.015 (0.018)
$\beta_2: S_i$	-0.029 (0.029)	0.017 (0.025)
$\beta_4: S_i P_i$	-0.021 (0.036)	-0.020 (0.036)
$\beta_2 + \beta_4$	-0.050 (0.021)	-0.003 (0.018)
SE		
P-value	[0.020]	[0.854]
Jobseekers	475	546
Vacancies	41	20
N	2758	2475
Control Mean	0.088	0.043
Panel B: Employees		
	(1)	(2)
	Male Employees	Female Employees
$\beta_1: P_i$	-0.004 (0.026)	-0.023 (0.021)
$\beta_3: E_i$	-0.032 (0.026)	-0.013 (0.023)
$\beta_5: E_i P_i$	0.052 (0.041)	0.042 (0.030)
$\beta_3 + \beta_5$	0.020 (0.032)	0.029 (0.021)
SE		
P-value	[0.542]	[0.198]
Jobseekers	506	427
Vacancies	29	17
N	2291	1624
Control Mean	0.076	0.052

Notes: Table reports results from Equation 1. Outcome variable is whether the jobseeker applied to the vacancy. In Panel A, Column 1, the sample is restricted to matches to vacancies with a male supervisor. In Panel A, Column 2, the sample is restricted to matches to vacancies with a female supervisor. In Panel B, Column 1, the sample is restricted to matches to vacancies with mostly male employees. In Panel B, Column 2, the sample is restricted to matches to vacancies with mostly female employees. Standard errors, clustered on jobseeker, are reported in parentheses. P-values reported in square brackets. Unit of observation is the jobseeker-vacancy match. All panels and columns include jobseekers across all 8 cells of the experiment, as is necessary for Equation 1 to be identified. * $p < .1$, ** $p < .05$, *** $p < .01$.

Panel A Column 2 reports results from Equation 1 estimated for matches to vacancies with a female supervisor. Here, β_2 is 0.017 (96% increase), meaning that the direct effect of information about a female supervisor on the application rate is positive, though not statistically significant. The minimum detectable effect size at a significance level of 0.05 is an increase of 0.05. Within the set of jobseekers primed to think about family job search discussion, $\beta_2 + \beta_4$ has a very small magnitude (-0.003, approximately a 7% decrease) and is not statistically significant. Panel B denotes symmetric results for employee gender, with matches to vacancies with majority male employees in Column 1 and matches to vacancies with majority female employees in Column 2. Overall, the estimates are all very noisy with large standard errors. The minimum detectable effect sizes for information about male employees and female employees are 0.075 and 0.7 respectively at a significance level of 0.05. Even when primed to think about family job search discussion, the impact of information about employee gender is not statistically significant ($\beta_3 + \beta_5$).

Salience of job search discussion alone might directly decrease job applications given social norms that discourage women from working. I test this by estimating Equation 1 on the pooled sample of all matches, and report β_1 in Appendix Table A.2. The coefficient is -0.013 (a decrease of 19%), which is negative as expected, but comparatively low in magnitude relative to the information treatments and not statistically significant. The minimum detectable effect at a significance level of 0.05 is -0.04.

These effect sizes are in the middle of the distribution of information treatment effects on job application rates. In a seminal study in Saudi Arabia correcting husbands' misperceived social norms that women should not work, Bursztyn et al. (2020) estimate an increase in the rate of women having ever applied for a job by 10 percentage points, a nearly 180% increase. Delfino (2024) finds that signaling a male identity for a job posting in the UK via a male photo decreases women's job application rates by 5 percentage points, an 8.6% decrease. Providing information about the number of applicants for a job via LinkedIn, Gee (2019) finds a 21 percentage point increase in the application rate for women, a 3.5% increase.

One concern with the estimation strategy is that the analysis is underpowered due to the cross-randomization of treatment and the fully interacted specification. Estimating simplified specifications that interact each information treatment with the priming experiment separately, I find a very similar pattern of results, as reported in Appendix Table A.3, though these regressions have higher statistical power due to fewer interaction terms. The direct effects of information about supervisor gender and employee gender remain statistically insignificant. However, here, as in the main results, among those primed to think about family job search discussions, information about a male supervisor significantly decreases the application rate, with a coefficient -0.037 (a 42% decrease). Additionally, among those primed to think about family job search discussion, information about majority female employees significantly increases the job application rate by 3.5 percentage points (a 67% increase). This is similar in magnitude to the equivalent estimate from the main specification, but with higher statistical power. In Appendix Table A.4, I report results from regressing the application decision on each information treatment indicator separately, for the relevant subsamples, e.g. Column 1 regresses the decision to apply on the treatment indicator for information about supervisor gender, and the covariates from Equation 1. These specifications have higher statistical power than the main specification, with minimum detectable effect sizes between 0.025 and 0.03 at a significance level of 0.05. Most of the effects are smaller than in the main specification and insignificant. The coefficient on S_i for vacancies with a male supervisor is -0.025 (a 30% decrease), similar in magnitude to β_2 in Table 3 Panel A Column 1 for matches to vacancies with a male supervisor, and statistically significant. This suggests a negative effect of information about a male supervisor, though these results should be interpreted with caution since these specifications do not fully interact all treatment arms (Muralidharan et al., 2023).

In Table 4, I report results from a series of robustness checks on the main field experiment results. Columns (1) and (5) repeat the main results for comparison. In columns (2) and (6), I omit all control variables, including baseline characteristics that were slightly imbalanced. The results remain nearly identical. In columns (3) and (7) I omit

job characteristics, and the results remain nearly identical. In columns (4) and (8), I use vacancy fixed effects rather than job characteristics, and the results remain nearly identical.

Table 4: Robustness: Job Applications

Panel A: Supervisor								
	Male Supervisor				Female Supervisor			
	(1) Main	(2) No Controls	(3) No Job Char	(4) Job FE	(5) Main	(6) No Controls	(7) No Job Char	(8) Job FE
$\beta_1: P_i$	-0.013 (0.025)	-0.014 (0.027)	-0.011 (0.024)	-0.013 (0.025)	-0.015 (0.018)	-0.015 (0.019)	-0.012 (0.018)	-0.015 (0.017)
$\beta_2: S_i$	-0.029 (0.029)	-0.029 (0.029)	-0.029 (0.028)	-0.028 (0.029)	0.017 (0.025)	0.011 (0.024)	0.016 (0.024)	0.017 (0.025)
$\beta_4: S_i P_i$	-0.021 (0.036)	-0.017 (0.035)	-0.023 (0.035)	-0.020 (0.035)	-0.020 (0.036)	-0.009 (0.034)	-0.018 (0.033)	-0.020 (0.035)
$\beta_2 + \beta_4$	-0.050 (0.021)	-0.046 (0.021)	-0.052 (0.021)	-0.048 (0.021)	-0.003 (0.018)	0.002 (0.019)	-0.003 (0.018)	-0.003 (0.018)
SE								
P-value	[0.020]	[0.032]	[0.015]	[0.024]	[0.854]	[0.902]	[0.886]	[0.853]
Jobseekers	475	475	475	475	546	546	546	546
Vacancies	41	41	41	41	20	20	20	20
N	2758	2758	2758	2758	2475	2475	2475	2475
Control Mean	0.088	0.088	0.088	0.088	0.043	0.043	0.043	0.043

Panel B: Employees								
	Male Employees				Female Employees			
	(1) Main	(2) No Controls	(3) No Job Char	(4) Job FE	(5) Main	(6) No Controls	(7) No Job Char	(8) Job FE
$\beta_1: P_i$	-0.004 (0.026)	-0.005 (0.027)	-0.001 (0.025)	-0.005 (0.026)	-0.023 (0.021)	-0.020 (0.020)	-0.017 (0.019)	-0.023 (0.021)
$\beta_3: E_i$	-0.032 (0.026)	-0.027 (0.026)	-0.033 (0.025)	-0.031 (0.025)	-0.013 (0.023)	-0.010 (0.023)	-0.014 (0.023)	-0.014 (0.023)
$\beta_5: E_i P_i$	0.052 (0.041)	0.047 (0.041)	0.048 (0.040)	0.052 (0.041)	0.042 (0.030)	0.038 (0.031)	0.036 (0.029)	0.042 (0.029)
$\beta_3 + \beta_5$	0.020 (0.032)	0.020 (0.032)	0.015 (0.031)	0.021 (0.032)	0.029 (0.021)	0.028 (0.021)	0.022 (0.021)	0.029 (0.021)
SE								
P-value	[0.542]	[0.541]	[0.624]	[0.507]	[0.198]	[0.199]	[0.301]	[0.195]
Jobseekers	506	506	506	506	427	427	427	427
Vacancies	29	29	29	29	17	17	17	17
N	2291	2291	2291	2291	1624	1624	1624	1624
Control Mean	0.076	0.076	0.076	0.076	0.052	0.052	0.052	0.052

Notes: Table reports robustness checks to results in Table 3. Outcome variable is whether the jobseeker applied to the vacancy. In Panel A, Columns 1-5, the sample is restricted to matches to vacancies with a male supervisor. In Panel A, Columns 6-10, the sample is restricted to matches to vacancies with a female supervisor. In Panel B, Columns 1-5, the sample is restricted to matches to vacancies with mostly male employees. In Panel B, Columns 6-10, the sample is restricted to matches to vacancies with mostly female employees. Columns 1 and 6 report the main results, as in Table 3. Columns 2 and 7 omit jobseeker-level and vacancy-level covariates (W_{ik} and D_j from Equation 1). Columns 3 and 8 omit job-level covariates (D_j from Equation 1). Columns 4 and 9 include vacancy fixed effects instead of job-level covariates. Columns 5 and 10 cluster standard errors on both jobseeker and vacancy. Standard errors are reported in parentheses. P-values reported in square brackets. Unit of observation is the jobseeker-vacancy match. * $p < .1$, ** $p < .05$, *** $p < .01$.

Given the application rate and relatively small number of vacancies, the field experiment is underpowered to detect employment effects. Indeed there are no statistically significant impacts on interviews (Appendix Table A.5). Thus, in Section 5, I study the employment decision margin using a survey experiment.

4.1 Heterogeneity

Appendix Tables A.8 and A.9 show the results of heterogeneous treatment effects analysis, based off of Equation 1.¹⁶ G denotes the heterogeneity group. Due to a large number of treatment interactions relative to the number of observations, it is difficult to draw clear patterns as the analysis is largely underpowered.

I explore heterogeneous treatment effects first by individual characteristics: whether the jobseeker has any work experience and whether she is currently a student. Women with work experience may have already overcome barriers of their family disapproving of job search, including of working with men; conversely women with work experience might be even less keen to work with men if they have experienced adverse situations of working with men earlier in their careers. In the data, I do not find evidence going in either direction; women who have any work experience do not differentially respond to treatments.

Current students might be at a stage of life where they would be more influenced by their families in making job search decisions. I find that the effect of information about a male supervisor is negative for current students, both when they are and are not primed to think about family job search discussions ($S + SG$ and $SG + SPG + S + SP$ respectively). Information about female employees has a positive effect on application decisions for current students who are primed to think about family job search advice

¹⁶The full equation for this analysis is:

$$\begin{aligned} Y_{ivk} = & \beta_0 + \beta_1 P_i + \beta_2 S_i + \beta_3 E_i + \beta_4 S_i P_i + \beta_5 E_i P_i + \beta_6 S_i E_i + \beta_7 P_i S_i E_i + \Lambda W_{ik} \\ & + \Gamma D_v + \beta_8 P_i G + \beta_9 S_i G + \beta_{10} E_i G + \beta_{11} S_i P_i G + \beta_{12} E_i P_i G + \beta_{13} S_i E_i G \\ & + \beta_{14} P_i S_i E_i G + W_{ik} \times G + \Psi D_v \times G + \beta_{15} G + \varepsilon_{ivk} \end{aligned}$$

($EG + EPG + E + EP$). Relatedly, women who have studied in women’s only institutions might be more likely to prefer an all-female workplace. I conduct heterogeneity by whether the respondent’s most recent or current educational institution is single-gender (women’s only). There are no differential treatment effects by having studied in a women-only institution.

Finally, I explore heterogeneity by job characteristics: specifically whether the job posting mentioned flexible working hours, and whether the posting had higher than the median salary of the job postings that the jobseeker was matched to. Appendix Table A.8 shows that the effect of information about a male supervisor is negative for vacancies with flexible working hours for jobseekers primed to think about family job search advice ($SG + SPG + S + SP$). One interpretation is that jobseekers who have discussed with their families interpret flexible working hours as flexibility on the part of the jobseeker rather than the firm, and are concerned that the jobseeker will be expected to be even more flexible under a male supervisor.

Overall, there are not many differences in the treatment effects for high salary versus low salary vacancies. The one notable source of heterogeneity is that the treatment effect of information about female employees is positive for high-salary vacancies among jobseekers primed to think about family job search advice (Column 10 of Appendix Table A.9, $EG + EPG + E + EP$). This suggests that among women primed to think about family job search advice, a higher salary only increases their probability of making application decisions that adhere to norms. A higher salary does not increase the probability that they apply to jobs with a male supervisor or male employees. I address this further in Section 5 when I discuss the survey experiment.

5 Employment Decisions

The field experiment captures a revealed preference at the time of application. However, while a jobseeker can submit multiple job applications, she can only choose one job offer. I

study how supervisor or employee gender influence employment decisions using a survey experiment conducted at baseline. Three hundred and twenty-two jobseekers from the field experiment analysis sample completed the exercises in the survey experiment. As noted in Appendix Table A.10, these respondents are similar to the full sample on most attributes, but those who responded are about nine months younger on average.

In each of three cases, the respondent was asked to envision two nearly identical job offers, both in the her ideal occupation, denoted as Company A and Company B. Company B was always male-dominated relative to Company A. If the respondent chose Company A (the female-dominated firm), then they were asked to compare the same job offers again, but now with Company B offering either 5,000 or 10,000 PKR/month more than Company A; this salary jump was randomized at the individual level and is the key randomization. Appendix Table A.11 shows that the salary jump (5,000 PKR vs 10,000 PKR) treatment is balanced across characteristics observable at baseline. The respondent was also asked how her parents would advise her in each of these binary choices. To address potential sources of survey bias, I additionally randomized at the individual level whether the survey first asked about the respondent's own choice or how they believed their family would advise. The starting salary in the initial comparison is 20,000 PKR/month for both

vacancies.¹⁷¹⁸¹⁹

Equation 2 estimates the effect of the difference in salary between Company A and Company B; the constant term and indicators Δ_i^{5000} and Δ_i^{10000} respectively denote 0, 5000, and 10000 PKR difference. By controlling for and interacting all terms with F_i , which is an indicator for whether the observation refers to how the respondent thinks her parents would advise her to make the decision (versus her own response), I additionally estimate whether there are differences between what she would choose for herself, and what she believes her parents would advise. The specification includes an indicator for whether the individual was randomized to see questions about their own choices or how their parents would advise first in ρ_i . Standard errors are clustered on individual. The outcome variable M_i indicates choosing Company B (the male-dominated firm) over Company A.²⁰ Figure 1

¹⁷The 2017-2018 Labour Force Survey for Pakistan listed women's mean monthly wages at 11,884 PKR (Shaukat Ali Khan et al., 2018), which included all provinces and education levels. The survey experiment was conducted at baseline, before knowing the salary distribution of actual matches for the field experiment, but knowing that the target population for the baseline survey and field experiment were women with at least a high school education. Thus, I anticipated salaries via the platform that women in this education category would match to would be higher than 11,884 PKR. Feedback from initial piloting of the exercise with research assistants working on a broader program of research related to job search in this context was that starting at a higher initial salary for example at 30,000 PKR, was unrealistically high, but less than that might be too low for what women with a college education would expect/be interested in. Table A.1 shows that the mean salary of matches in the field experiment sample pays 22,273 PKR (median of 22124), and a standard deviation of 7,336. Thus, the starting point was below the mean salary through the field experiment, and the highest salary jump would yield a total salary of 30,000 PKR, which is approximately one standard deviation above the mean salary from the field experiment. Calculations from the Labour Force Survey of 2018-2019, representative of Lahore, show that adult women with at least a high school education who were working earned a mean salary of 29,210 PKR in the last month, with a median of 24,000 PKR and a standard deviation of 23,905 (the 75th percentile is 40,000 PKR). The range of 20,000 PKR to 30,000 PKR for the survey experiment is within the central mass of this representative sample of women's salaries from the broader city.

¹⁸Appendix B provides the text for how the exercises were introduced to respondents.

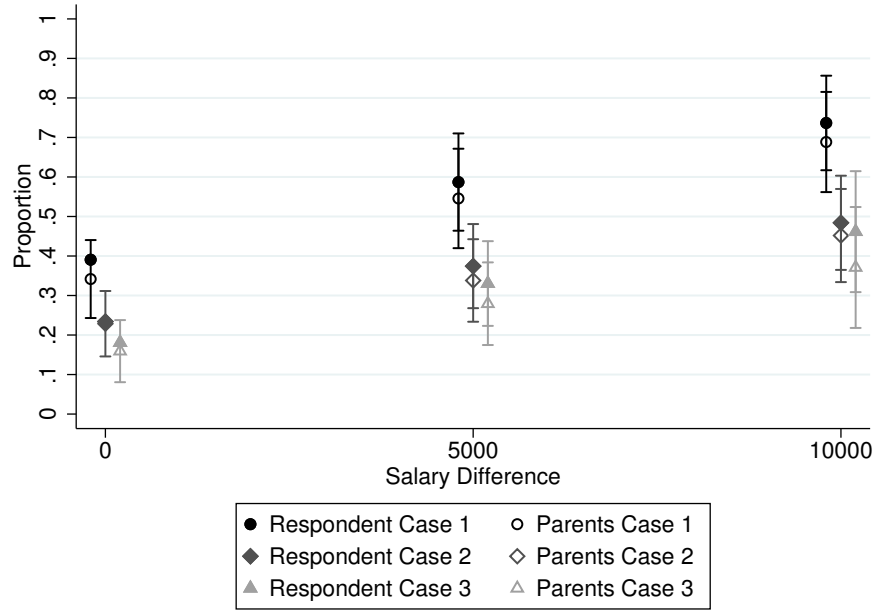
¹⁹The exercises included an option of "I do not wish to answer", to allow respondents to avoid answering if they did not feel comfortable doing so. In the main analysis, responses from respondents who ever selected that response are excluded. Appendix Table A.12 shows that 71 respondents ever used that option. These respondents were older, more likely to be employed, less likely to be a student, were more educated, and had applied to more jobs prior to the field experiment beginning, compared to those who never used that option. Appendix Figure A.3 shows that results are nearly identical with responses from these respondents included, but outcomes coded as 0s rather than missing. Appendix Figure A.2 shows the raw distribution of responses. Selecting "99" for 'I do not wish to answer' was uncommon relative to the other choices.

²⁰Respondents were ex-ante randomized to see either the 5000 or the 10000 PKR jump. However, in practice, they only saw the comparison with the increased salary for the male-dominated position (Company B) if they did not choose Company B when the salaries were equal. Thus, to bound treatment effects, I assign the respondent as having chosen Company B at the higher salary, if they chose Company B at the lower

presents a coefficient plot with these results.

$$M_{ir} = \alpha_0 + \alpha_1 \Delta_i^{5000} + \alpha_2 \Delta_i^{10000} + \alpha_3 F_{ir} + \alpha_4 \Delta_i^{5000} \times F_{ir} + \alpha_5 \Delta_i^{10000} \times F_{ir} + \gamma \rho_i + \varepsilon_{ir} \quad (2)$$

Figure 1: Willingness to Accept Male Supervisor or Coworkers



Notes: Reports results from Equation 2 estimated separately for each case. Case 1 (circles) presents the choice of choosing a male supervisor over a female supervisor, holding female coworkers fixed. Case 2 (diamonds) presents the choice of choosing male coworkers over female coworkers, holding a male supervisor fixed. Case 3 (triangles) presents the choice of choosing male coworkers and a male supervisor over female coworkers and a female supervisor. In all cases, respondents were asked to consider all other attributes of the two jobs as identical. The filled-in circle, diamond, and square refer to how the respondent would choose for themselves for Cases 1, 2, and 3, respectively. The empty circle, diamond, and square refer to how the respondent thinks their family would advise them to choose for Cases 1, 2, and 3, respectively. The salary difference between the jobs represents how much more the male-dominated job pays. Standard errors are clustered on individual. N = 322 individuals. Regressions results underlying this figure are in Appendix Table A.13.

In Case 1, the comparison holds fixed female coworkers; the outcome is choosing a salary, assuming monotonicity of preferences. The results without this correction are very similar, as shown in Appendix Figure A.1.

male supervisor over a female supervisor. When salaries were equal, 41% chose the position with the male supervisor (α_0). When asked how their parents would advise them on this decision, 37% ($\alpha_0 + \alpha_3$) said that their parents would tell them to choose the position with the male supervisor; this 3.2 percentage point difference (α_3) is statistically significant. When the position with a male supervisor pays 5000 PKR more, 61% ($\alpha_0 + \alpha_1$) of women would choose it; if it pays 10000 PKR more, 69% ($\alpha_0 + \alpha_2$) of respondents would choose the position with the male supervisor. The treatment effect of Company B paying 10,000 PKR more instead of 5,000 PKR more is not statistically significant ($\alpha_2 - \alpha_1$). There is also no statistically significant difference between what women say they would choose for themselves and what they report their parents would advise, when Company B (with a male supervisor) pays a higher salary, and both firms have mostly female coworkers.

The results from Case 2 and Case 3 are similar to each other, but slightly different from Case 1. In Case 2, both positions have a male supervisor, but Company A has mostly female coworkers and Company B has mostly male coworkers. Holding fixed a male supervisor, only 24% of respondents would choose the position with the male coworkers, all else equal. The treatment effect of Company B paying 10,000 PKR more rather than 5,000 PKR more is statistically significant for the respondent (but not for what she anticipates her parents would recommend), and increases the probability of her choosing Company B by 10 percentage points. There is no statistically significant gap between what women themselves choose and what they report that their parents would recommend across salary differences.

In Case 3, Company A has mostly female employees and a female supervisor, and Company B has mostly male employees and a male supervisor. 25% of women would choose the male-dominated position at equal prices. The treatment effect of Company B paying 10,000 PKR more rather than 5,000 PKR more is again statistically significant for the respondent (but not for what she anticipates her parents would recommend), and increases the probability of her choosing Company B by 15 percentage points. There is no statistically significant gap between what women themselves choose and what they report that their

parents would recommend at 0 price difference or at a 5000 PKR difference; however if Company B paid 10000 PKR more than Company A, the respondent anticipates that her parents are significantly less likely to suggest that she take Company A than she would herself at no difference in salary.

Notably, even with the significant treatment effect in Cases 2 and 3 with the respondent herself choosing Company B if it paid 10,000 PKR more rather than 5,000 PKR more than Company B, the overall probability that she would choose Company B remains below the probability that she would choose Company B in Case 1. Put simply, while respondents are more elastic to accepting male coworkers holding fixed a male supervisor (Case 2) or more elastic to accepting male coworkers and a male supervisor to accepting female coworkers and a female supervisor (Case 3) ($\alpha_2 - \alpha_1$ as reported in Appendix Table A.13), they are still overall less likely to choose these male-dominated scenarios even at higher salaries than selecting an offer with a male supervisor and female coworkers over a female supervisor and female coworkers (Case 1) ($\alpha_0 + \alpha_1$ and $\alpha_0 + \alpha_2$, from Appendix Table A.13), the most female-dominated scenario in the full survey experiment.

These patterns suggest that women overall prefer work environments with larger numbers of women, proxied for by female coworkers. Increases in salaries for workplaces with male coworkers can slightly increase the rate at which women would choose them (the treatment effects in Case 2 and 3), but not enough to catch up with the level of choosing a workplace that has female coworkers even with a male supervisor (Company B in Case 1). Across all cases, respondents indicate that they believe their parents to be less elastic, and prefer workplaces that are more female-dominated.

In the field experiment, the only heterogeneous treatment effect by salary is that the treatment effect of information about female employees is positive for high-salary vacancies among jobseekers primed to think about family job search advice (Column 10 of Appendix Table A.9, $EG + EPG + E + EP$). Other types of information about supervisor gender or male employees do not result in heterogeneous responses for low versus high salary vacancies, meaning also that a high salary does not mitigate the treatment response to

information about a male-dominated workplace on the application margin. One distinction is that the field experiment priming treatment refers to “family” broadly, while the survey experiment specifically refers to parents. People commonly live in ‘joint’ multi-generational families in Pakistan (Sarfraz and Khalid, 2019; Ahmad, 2024). Thus, one explanation for the pattern of results in the field experiment versus Case 1 of the survey experiment, is that elders in the family prefer women to avoid male supervisors, even if women believe their parents would be supportive of them taking a position with a male supervisor if it paid enough. I do not observe who all lives in a jobseeker’s family to test these mechanisms empirically.

6 Conclusion

Women’s progress in the labor market has not been commensurate with advances in educational attainment. I implement a field experiment on a job matching platform to identify the impact of information about supervisor or employee gender on women’s job applications. The sample, women with a high school diploma or college education who signed up for a job matching platform in Lahore, Pakistan, is from the population of interest: educated women who are interested in job search though not employed at high rates. Magnitudes of the treatment effects are large, though many of the results are underpowered. The key results are that information about a male supervisor decreases the job application rate by nearly 60% among women for whom family job search discussion is made salient. In an alternate specification, I additionally find that among women for whom family job search discussion is made salient, information about majority female employees at a vacancy increases the job application rate by 67%.

Information about supervisor or employee gender might not have a significant impact on the application decision, as a job application does not commit the jobseeker to taking the job. Thus, I complement this analysis with survey exercises at baseline to study the employment margin. Here, I find that slightly over a third of respondents would take a

position with a male supervisor over a female supervisor, holding fixed all other attributes of the job, including that both positions have mostly female coworkers. If the salary of the position with the male supervisor increases by 10000 PKR compared to the one with a female supervisor, nearly 70% of respondents would take it. Respondents are far less elastic to working with mostly male coworkers.

If salaries are equal, less than a quarter of respondents would choose a position with mostly male coworkers over a position with mostly female coworkers. Even if the position with the mostly male coworkers pays 20-50% more, nearly half of respondents would still prefer the one with mostly female coworkers. Even in the field experiment, I do not find that higher salaries lead to a higher rate of applying for male-dominated vacancies.

With the relatively low sample sizes, I am underpowered to fully disentangle mechanisms for what drives these patterns. However, the results do show that highly educated women make job search decisions consistent with social norms in Pakistan expecting women to avoid working in male-dominated workplaces. I cannot distinguish whether women make these decisions simply to adhere to social norms, to feel safer in the workplace, or to appease elders versus parents in their families.

Many of the women in this experiment are finishing their education and embarking upon both career and family decisions, which in the South Asian context, are often made in consultation with their households. In devising policy to address low female labor supply in such communities, policymakers and economic agents must consider information flows within families. Providing information about more female-friendly environments, the likelihood of women versus men being hired, safety in the workplace, and perhaps amenities for women at different workplaces, could be a next step to help empower women in conversations with their families about their job search. Furthermore, this paper presents the first experimental evidence that women themselves exhibit a preference for working in gender-segregated workplaces which are common in the context.

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A Online Appendix

Table A.1: Summary Statistics: Matches

Variable	All			Female Supervisor			Male Supervisor			Women			Men		
	Mean (1)	Std. Dev. (2)	Median (3)	Mean (4)	Std. Dev. (5)	Median (6)	Mean (7)	Std. Dev. (8)	Median (9)	Mean (10)	Std. Dev. (11)	Median (12)	Mean (13)	Std. Dev. (14)	Median (15)
Mean Salary	22368	7336	22368	21910	4137	22368	21672	7017	21500	20552	3114	22368	22259	9415	22368
Flexible Hours	.693	.461	.	.663	.473	.	.757	.429	.	.746	.435	.	.685	.465	.
Teacher	.326	.469	.	.547	.498	.	.148	.355	.	.781	.413	.	.115	.319	.
Management	.124	.33	.	.179	.383	.	.083	.276	.	0	0	.	.238	.426	.
Sales	.133	.34	.	.017	.131	.	.245	.43	.	.022	.147	.	.299	.458	.
Enumerator	.076	.265	.	.105	.306	.	0	0	.	0	0	.	.021	.142	.
Accountant	.072	.258	.	0	0	.	.14	.347	.	0	0	.	.129	.335	.
Writing	.07	.255	.	.067	.249	.	.077	.266	.	0	0	.	.021	.142	.
N	5402	.	.	2475	.	.	2758	.	.	1624	.	.	2291	.	.

Notes: Table reports summary statistics at the match-level for vacancy characteristics.

Table A.2: Job Applications - Pooled

	(1) all
$\beta_1: P_i$	-0.013 (0.018)
Jobseekers	582
Vacancies	64
N	5402
Control Mean	0.070

Notes: Table reports results from Equation 1. Outcome variable is whether the jobseeker was interviewed for the vacancy. Sample is all jobseeker-vacancy matches. β_1 , denoting the treatment effect of family job search discussion being made salient at the time of application, is reported. Standard errors, clustered on jobseeker, are reported in parentheses. Unit of observation is the jobseeker-vacancy match. * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.3: Job Applications: Cross Specification

	(1) Male Supervisor	(2) Female Supervisor	(3) Male Employees	(4) Female Employees
S_i	-0.015 (0.021)	0.022 (0.018)		
P_i	0.004 (0.023)	0.003 (0.013)	-0.002 (0.015)	-0.028 (0.016)
$S_i P_i$	-0.022 (0.028)	-0.019 (0.028)		
E_i			-0.008 (0.014)	-0.024 (0.018)
$E_i P_i$			0.021 (0.025)	0.059** (0.024)
$S_i + S_i P_i$	-0.037 (0.018)	0.002 (0.018)		
SE				
P-value	[0.049]	[0.894]		
$E_i + E_i P_i$			0.013 (0.020)	0.035 (0.017)
SE				
P-value			[0.525]	[0.060]
Jobseekers	475	546	506	427
Vacancies	41	20	29	17
N	2758	2475	2291	1624
Control Mean	0.088	0.043	0.076	0.052

Notes: Table reports an alternative specification to Equation 1 with an outcome variable of whether the jobseeker applied to the vacancy. Columns 1 and 2 estimate $Y_{ivk} = \theta_0 + \theta_1 S_i + \theta_2 P_i + \theta_3 S_i P_i + \Lambda W_{ik} + \Gamma D_v + \varepsilon_{ivk}$ on matches to vacancies with male supervisors and female supervisors respectively, and report θ_1 , θ_2 , and θ_3 . Columns 3 and 4 estimate $Y_{ivk} = \rho_0 + \rho_1 E_i + \rho_2 P_i + \rho_3 E_i P_i + \Lambda W_{ik} + \Gamma D_v + \varepsilon_{ivk}$ on matches to vacancies with mostly male employees and mostly female employees respectively, and report ρ_2 , ρ_1 , and ρ_3 . W_{ik} and D_v defined as in Equation 1. Standard errors, clustered on jobseeker, are reported in parentheses. P-values reported in square brackets. Unit of observation is the jobseeker-vacancy match. * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.4: Job Applications: Simple Specification

	(1) Male Supervisor	(2) Female Supervisor	(3) Male Employees	(4) Female Employees	(5) All
S_i	-0.025* (0.014)	0.013 (0.011)			
E_i			0.003 (0.012)	0.005 (0.013)	
P_i					-0.004 (0.011)
Jobseekers	475	546	506	427	582
Vacancies	41	20	29	17	64
N	2758	2475	2291	1624	5402
Control Mean	0.088	0.043	0.076	0.052	0.070

Notes: Table reports an alternative specification to Equation 1 with an outcome variable of whether the jobseeker applied to the vacancy. Columns 1 and 2 estimate $Y_{ivk} = \gamma_0 + \gamma_1 S_i + \Lambda W_{ik} + \Gamma D_v + \varepsilon_{ivk}$ on matches to vacancies with male supervisors and female supervisors respectively, and report γ_1 . Columns 3 and 4 estimate $Y_{ivk} = \eta_0 + \eta_1 E_i + \Lambda W_{ik} + \Gamma D_v + \varepsilon_{ivk}$ on matches to vacancies with mostly male employees and mostly female employees respectively, and report η_1 . Column 5 estimates $Y_{ivk} = \zeta_0 + \zeta_1 P_i + \Lambda W_{ik} + \Gamma D_v + \varepsilon_{ivk}$ on all jobseeker-vacancy matches, and reports ζ_1 . W_{ik} and D_v defined as in Equation 1. Standard errors, clustered on jobseeker, are reported in parentheses. Unit of observation is the jobseeker-vacancy match. * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.5: Interviews

Panel A: Supervisor		
	(1)	(2)
	Male Supervisor	Female Supervisor
$\beta_1: P_i$	-0.003 (0.003)	-0.003 (0.003)
$\beta_2: S_i$	-0.002 (0.002)	-0.003 (0.003)
$\beta_4: S_i P_i$	0.001 (0.001)	0.003 (0.003)
$\beta_2 + \beta_4$	-0.001 (0.001)	-0.000 (0.000)
SE		
P-value	[0.323]	[0.604]
Jobseekers	474	537
Vacancies	41	20
N	2712	2405
Control Mean	0.003	0.003
Panel B: Employees		
	(1)	(2)
	Male Employees	Female Employees
$\beta_1: P_i$	0.000 (.)	-0.005 (0.005)
$\beta_3: E_i$	0.000 (.)	-0.005 (0.005)
$\beta_5: E_i P_i$	0.000 (.)	0.005 (0.005)
$\beta_3 + \beta_5$	0.000 (0.000)	-0.000 (0.000)
SE		
P-value	[.]	[0.902]
Jobseekers	500	427
Vacancies	29	17
N	2251	1593
Control Mean	0.000	0.005

Notes: Table reports results from Equation 1. Outcome variable is whether the jobseeker was interviewed for the vacancy. In Panel A, Column 1, the sample is restricted to matches to vacancies with a male supervisor. In Panel A, Column 2, the sample is restricted to matches to vacancies with a female supervisor. In Panel B, Column 1, the sample is restricted to matches to vacancies with mostly male employees. In Panel B, Column 2, the sample is restricted to matches to vacancies with mostly female employees. Standard errors, clustered on jobseeker, are reported in parentheses. P-values reported in square brackets. Unit of observation is the jobseeker-vacancy match. * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.6: Balance: Supervisor and Employee Gender

	(1) Male supervisor	(2) Female supervisor	(3) Male Employees	(4) Female Employees
Priming	0.014 (0.671)	-0.013 (0.682)	0.022 (0.473)	-0.006 (0.829)
Supervisor	0.009 (0.785)	-0.006 (0.849)	-0.001 (0.974)	-0.006 (0.818)
Employee	0.024 (0.513)	-0.005 (0.884)	0.014 (0.683)	0.031 (0.291)
Employee \times Priming	-0.022 (0.644)	0.008 (0.867)	-0.013 (0.781)	-0.029 (0.485)
Supervisor \times Priming	-0.010 (0.837)	0.006 (0.907)	-0.036 (0.419)	0.017 (0.699)
Supervisor \times Employee	-0.032 (0.502)	0.014 (0.757)	0.007 (0.885)	-0.041 (0.314)
Priming \times Supervisor \times Employee	0.038 (0.594)	-0.019 (0.790)	0.030 (0.647)	0.040 (0.509)
Observations	5402	5402	5402	5402

Notes: Table reports results of regressions of whether each jobseeker-vacancy match is to a vacancy with respectively a male supervisor (col 1), a female supervisor (col 2), mostly male employees (col 3) or mostly female employees (col 4). Regressions include controls for age and marital status, which were slightly imbalanced at baseline, and are included as controls in the main analysis. Standard errors are clustered on jobseeker and are reported in parentheses. Unit of observation is the jobseeker-vacancy match. * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.7: Randomization Treatment

Treatment	Jobseekers	Matches
Priming	86	845
Supervisor	78	891
Employee	64	574
Supervisor \times Employee	81	643
Supervisor \times Priming	55	425
Employee \times Priming	70	733
Priming \times Supervisor \times Employee	78	650
Control	70	641
Total	582	5402
height		

Notes: Each row contains the number of jobseekers and matches in each treatment cell.

Table A.8: Heterogeneity: Supervisor

	Male Supervisor					Female Supervisor				
	(1) Any Experience	(2) Student	(3) Women Only	(4) Flex Hours	(5) High Salary	(6) Any Experience	(7) Student	(8) Women Only	(9) Flex Hours	(10) High Salary
P_i	0.025 (0.042)	0.034 (0.029)	-0.021 (0.026)	0.009 (0.030)	-0.016 (0.029)	0.009 (0.021)	0.001 (0.043)	-0.013 (0.021)	-0.030 (0.043)	-0.020 (0.014)
S_i	0.021 (0.059)	0.017 (0.034)	-0.045 (0.031)	0.001 (0.038)	-0.027 (0.035)	0.057 (0.041)	0.001 (0.039)	0.001 (0.027)	-0.037 (0.035)	0.022 (0.040)
$S_i P_i$	-0.074 (0.074)	-0.071 (0.058)	0.009 (0.036)	-0.065 (0.043)	0.001 (0.044)	-0.038 (0.047)	-0.061 (0.082)	-0.012 (0.037)	0.013 (0.078)	-0.009 (0.051)
$P_i G$	-0.050 (0.055)	-0.028 (0.049)	-0.006 (0.093)	-0.028 (0.031)	-0.025 (0.040)	-0.039 (0.029)	-0.013 (0.050)	-0.009 (0.059)	0.021 (0.040)	0.015 (0.084)
$S_i G$	-0.062 (0.070)	-0.079 (0.052)	0.085 (0.137)	-0.041 (0.039)	-0.003 (0.040)	-0.059 (0.047)	0.011 (0.044)	0.126 (0.109)	0.081** (0.037)	-0.053 (0.072)
$S_i P_i G$	0.065 (0.089)	0.058 (0.079)	-0.130 (0.133)	0.058 (0.050)	-0.018 (0.057)	0.015 (0.049)	0.064 (0.082)	-0.063 (0.144)	-0.049 (0.080)	-0.062 (0.133)
G	-0.195** (0.072)	0.013 (0.099)	0.175 (0.179)	0.000 (.)	0.289 (0.204)	0.000 (.)	0.000 (0.128)	0.254 (0.208)	0.000 (.)	0.000 (.)
Proportion in Group G	0.764	0.533	0.127	0.757	0.351	0.635	0.578	0.128	0.663	0.361
$S_i + S_i G$	-0.041 (0.036)	-0.062 (0.035)	0.040 (0.136)	-0.040 (0.032)	-0.030 (0.043)	-0.001 (0.031)	0.013 (0.015)	0.128 (0.101)	0.044 (0.026)	-0.031 (0.068)
P-value	[0.261]	[0.086]	[0.770]	[0.217]	[0.491]	[0.967]	[0.415]	[0.221]	[0.102]	[0.653]
$S_i G + S_i P_i G + S_i + S_i P_i$	-0.050 (0.031)	-0.075 (0.027)	-0.081 (0.060)	-0.047 (0.025)	-0.047 (0.034)	-0.025 (0.016)	0.016 (0.012)	0.053 (0.079)	0.009 (0.009)	-0.102 (0.062)
P-value	[0.116]	[0.008]	[0.181]	[0.071]	[0.180]	[0.132]	[0.184]	[0.511]	[0.352]	[0.126]
Individuals	472	424	393	475	398	543	484	461	546	353
N	2727	2433	2332	2758	2138	2453	2155	2119	2475	1002
Control Mean	0.076	0.051	0.082	0.066	0.072	0.029	0.049	0.037	0.079	0.024

Notes: Table reports heterogeneity analysis based off of Equation 1. Each variable on the right hand side of Equation 1 is interacted with heterogeneity group variable G and included in the specification; group variable G is also included. Standard errors, clustered on jobseeker, are reported in parentheses. P-values reported in square brackets. Unit of observation is the jobseeker-vacancy match. All panels and columns include jobseekers across all 8 cells of the experiment, as is necessary for Equation 1 to be identified. Only coefficients related to treatment effects of information about supervisor gender are reported in the table. * $p < .1$, ** $p < .05$, *** $p < .01$. Full equation estimated for this table:

$$\begin{aligned}
Y_{ivk} = & \beta_0 + \beta_1 P_i + \beta_2 S_i + \beta_3 E_i + \beta_4 S_i P_i + \beta_5 E_i P_i + \beta_6 S_i E_i + \beta_7 P_i S_i E_i + \Lambda W_{ik} \\
& + \Gamma D_v + \beta_8 P_i G + \beta_9 S_i G + \beta_{10} E_i G + \beta_{11} S_i P_i G + \beta_{12} E_i P_i G + \beta_{13} S_i E_i G \\
& + \beta_{14} P_i S_i E_i G + W_{ik} \times G + \Psi D_v \times G + \beta_{15} G + \varepsilon_{ivk}
\end{aligned}$$

Table A.9: Heterogeneity: Employees

	Male Employees					Female Employees				
	(1) Any Experience	(2) Student	(3) Women Only	(4) Flex Hours	(5) High Salary	(6) Any Experience	(7) Student	(8) Women Only	(9) Flex Hours	(10) High Salary
P_i	0.041 (0.025)	0.015 (0.026)	-0.012 (0.028)	-0.017 (0.049)	-0.008 (0.025)	0.005 (0.036)	-0.009 (0.051)	-0.031 (0.024)	-0.043*** (0.013)	-0.039 (0.038)
E_i	0.043 (0.032)	-0.026 (0.036)	-0.031 (0.031)	-0.058 (0.045)	-0.030 (0.028)	0.025 (0.031)	-0.071* (0.035)	-0.016 (0.031)	-0.018 (0.013)	-0.066* (0.036)
$E_i P_i$	-0.065 (0.039)	0.015 (0.054)	0.044 (0.040)	0.084 (0.065)	0.061 (0.060)	-0.022 (0.061)	0.015 (0.049)	0.017 (0.033)	0.062*** (0.017)	0.063 (0.042)
$P_i G$	-0.068 (0.046)	0.029 (0.038)	-0.064 (0.113)	0.019 (0.044)	-0.046 (0.054)	-0.044 (0.039)	-0.004 (0.065)	0.006 (0.089)	0.027 (0.017)	0.002 (0.090)
$E_i G$	-0.104* (0.052)	0.045 (0.057)	-0.042 (0.094)	0.039 (0.040)	-0.039 (0.059)	-0.053 (0.037)	0.113* (0.054)	0.100 (0.134)	0.006 (0.016)	0.130 (0.154)
$E_i P_i G$	0.151** (0.071)	-0.007 (0.076)	-0.006 (0.136)	-0.047 (0.062)	0.042 (0.073)	0.089 (0.073)	0.036 (0.080)	-0.076 (0.125)	-0.025 (0.019)	0.016 (0.160)
G	-0.142 (0.117)	0.025 (0.129)	0.311 (0.215)	0.000 (.)	0.000 (.)	0.000 (.)	0.201 (0.147)	0.434 (0.271)	0.000 (.)	15.226*** (1.061)
Proportion in Group G	0.674	0.572	0.125	0.685	0.347	0.703	0.557	0.132	0.746	0.155
$E_i + E_i G$	-0.061 (0.038)	0.018 (0.032)	-0.073 (0.087)	-0.019 (0.023)	-0.069 (0.065)	-0.027 (0.027)	0.043 (0.037)	0.084 (0.120)	-0.012 (0.027)	0.065 (0.150)
P-value	[0.124]	[0.572]	[0.408]	[0.418]	[0.302]	[0.323]	[0.266]	[0.493]	[0.673]	[0.674]
$E_i G + E_i P_i G + E_i + E_i P_i$	0.025 (0.045)	0.026 (0.048)	-0.035 (0.066)	0.018 (0.036)	0.034 (0.039)	0.040 (0.037)	0.094 (0.037)	0.025 (0.078)	0.025 (0.025)	0.144 (0.073)
P-value	[0.578]	[0.590]	[0.602]	[0.619]	[0.386]	[0.299]	[0.021]	[0.749]	[0.326]	[0.072]
Individuals	503	454	422	506	304	424	372	359	427	206
N	2267	2044	1953	2291	1400	1610	1394	1369	1624	612
Control Mean	0.044	0.052	0.073	0.083	0.056	0.036	0.051	0.045	0.063	0.065

Notes: Table reports heterogeneity analysis based off of Equation 1. Each variable on the right hand side of Equation 1 is interacted with heterogeneity group variable G and included in the specification; group variable G is also included. Standard errors, clustered on jobseeker, are reported in parentheses. P-values reported in square brackets. Unit of observation is the jobseeker-vacancy match. All panels and columns include jobseekers across all 8 cells of the experiment, as is necessary for Equation 1 to be identified. Only coefficients related to treatment effects of information about supervisor gender are reported in the table. * $p < .1$, ** $p < .05$, *** $p < .01$. Full equation estimated for this table:

$$\begin{aligned}
Y_{ivk} = & \beta_0 + \beta_1 P_i + \beta_2 S_i + \beta_3 E_i + \beta_4 S_i P_i + \beta_5 E_i P_i + \beta_6 S_i E_i + \beta_7 P_i S_i E_i + \Lambda W_{ik} \\
& + \Gamma D_v + \beta_8 P_i G + \beta_9 S_i G + \beta_{10} E_i G + \beta_{11} S_i P_i G + \beta_{12} E_i P_i G + \beta_{13} S_i E_i G \\
& + \beta_{14} P_i S_i E_i G + W_{ik} \times G + \Psi D_v \times G + \beta_{15} G + \varepsilon_{ivk}
\end{aligned}$$

Table A.10: Attrition: Survey Experiment

		(1)		(2)	(1)-(2)	
		0		1	Pairwise t-test	
Variable	N	Mean/(SE)	N	Mean/(SE)	N	P-value
Age	260	24.392 (0.306)	322	23.618 (0.293)	582	0.068*
Employed	210	0.129 (0.023)	255	0.133 (0.021)	465	0.880
Student	197	0.635 (0.034)	318	0.695 (0.026)	515	0.161
Secondary	260	0.065 (0.015)	322	0.047 (0.012)	582	0.332
Bachelors	260	0.465 (0.031)	322	0.491 (0.028)	582	0.544
Post-Bachelors	260	0.469 (0.031)	322	0.438 (0.028)	582	0.451
Married	238	0.130 (0.022)	304	0.109 (0.018)	542	0.443
Experience	260	1.323 (0.154)	322	1.261 (0.121)	582	0.751
BL Applications	260	0.619 (0.030)	322	0.553 (0.028)	582	0.106

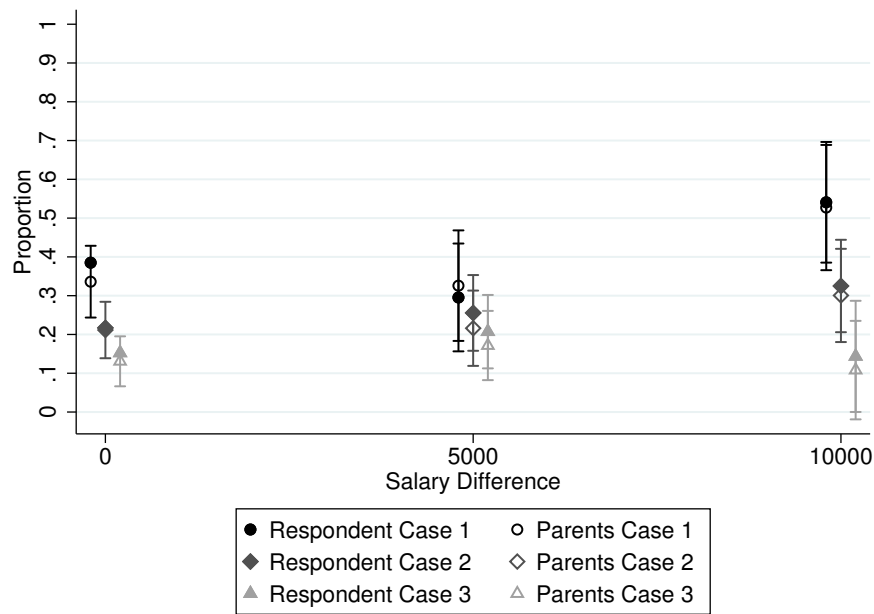
Notes: Table reports differences in baseline characteristics between respondents who completed the survey exercises at baseline and those who did not (attrited). Outcome variables are baseline characteristics at the time of enrollment onto the platform. Standard errors are reported in parentheses. Unit of observation is the individual. * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.11: Balance: Survey Experiment

		(1)		(2)	(1)-(2)	
		0		1	Pairwise t-test	
Variable	N	Mean/(SE)	N	Mean/(SE)	N	P-value
Age	169	23.663 (0.367)	153	23.569 (0.465)	322	0.874
Employed	135	0.111 (0.027)	120	0.158 (0.033)	255	0.274
Student	166	0.699 (0.036)	152	0.691 (0.038)	318	0.877
Secondary	169	0.047 (0.016)	153	0.046 (0.017)	322	0.946
Bachelors	169	0.467 (0.038)	153	0.516 (0.041)	322	0.382
Post-Bachelors	169	0.462 (0.038)	153	0.412 (0.040)	322	0.370
Married	155	0.103 (0.025)	149	0.114 (0.026)	304	0.762
Experience	169	1.254 (0.157)	153	1.268 (0.187)	322	0.956
BL Applications	169	0.538 (0.038)	153	0.569 (0.040)	322	0.588

Notes: Table reports balance between seeing 5000 PKR jump and 10000 PKR jump for the second comparison, which is randomized at the individual level. Outcome variables are baseline characteristics at the time of enrollment onto the platform. Robust standard errors are reported in parentheses. Unit of observation is the individual. * $p < .1$, ** $p < .05$, *** $p < .01$.

Figure A.1: Willingness to Accept Male Supervisor or Coworkers - Unbounded



Notes: Reports results from Equation 2 estimated separately for each case. Case 1 (circles) presents the choice of choosing a male supervisor over a female supervisor, holding female coworkers fixed. Case 2 (diamonds) presents the choice of choosing male coworkers over female coworkers, holding a male supervisor fixed. Case 3 (triangles) presents the choice of choosing male coworkers and a male supervisor over female coworkers and a female supervisor. In all cases, respondents were asked to consider all other attributes of the two jobs as identical. The filled-in circle, diamond, and square refer to how the respondent would choose for themselves for Cases 1, 2, and 3, respectively. The empty circle, diamond, and square refer to how the respondent thinks their family would advise them to choose for Cases 1, 2, and 3, respectively. The salary difference between the jobs represents how much more the male-dominated job pays. Standard errors are clustered on individual. The sample for this analysis does not implement the correction described in footnote 20. N = 322 individuals.

Table A.12: Selection: Survey Experiment - Do Not Wish to Answer

Variable	N	(1)	N	(2)	(1)-(2)	
		0 Mean/(SE)		1 Mean/(SE)	Pairwise t-test N	P-value
Age	251	23.299 (0.312)	71	24.746 (0.729)	322	0.068*
Employed	204	0.108 (0.022)	51	0.235 (0.060)	255	0.046**
Student	250	0.744 (0.028)	68	0.515 (0.061)	318	0.001***
Secondary	251	0.056 (0.015)	71	0.014 (0.014)	322	0.040**
Bachelors	251	0.490 (0.032)	71	0.493 (0.060)	322	0.966
Post-Bachelors	251	0.434 (0.031)	71	0.451 (0.059)	322	0.806
Married	236	0.114 (0.021)	68	0.088 (0.035)	304	0.516
Experience	251	1.167 (0.129)	71	1.592 (0.305)	322	0.200
BL Applications	251	0.518 (0.032)	71	0.676 (0.056)	322	0.014**

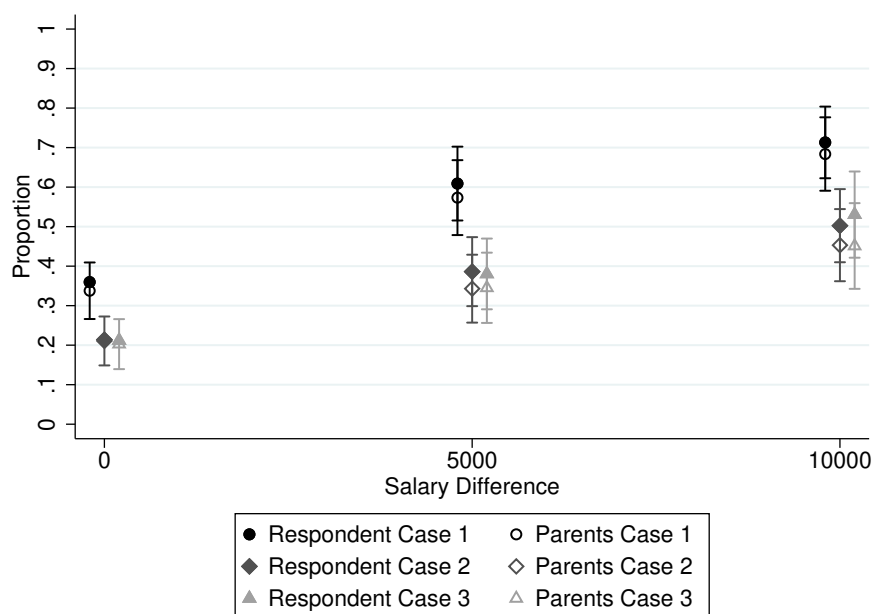
Notes: Table reports selection for individuals who chose the 'I do not wish to answer' response during the survey experiment. Outcome variables are baseline characteristics at the time of enrollment onto the platform. Robust standard errors are reported in parentheses. Unit of observation is the individual. * $p < .1$, ** $p < .05$, *** $p < .01$.



Figure A.2: Vignette Responses

Notes: These graphs provide the raw distribution of responses for all cases, price comparisons, and for both how respondents would choose themselves and how they believe their parents would advise. N=1552.

Figure A.3: Willingness to Accept Male Supervisor or Coworkers - Do not wish to answer



Notes: Reports results from Equation 2 estimated separately for each case. Includes individuals who ever chose the 'I do not wish to answer' response. Case 1 (circles) presents the choice of choosing a male supervisor over a female supervisor, holding female coworkers fixed. Case 2 (diamonds) presents the choice of choosing male coworkers over female coworkers, holding a male supervisor fixed. Case 3 (triangles) presents the choice of choosing male coworkers and a male supervisor over female coworkers and a female supervisor. In all cases, respondents were asked to consider all other attributes of the two jobs as identical. The filled-in circle, diamond, and square refer to how the respondent would choose for themselves for Cases 1, 2, and 3, respectively. The empty circle, diamond, and square refer to how the respondent thinks their family would advise them to choose for Cases 1, 2, and 3, respectively. The salary difference between the jobs represents how much more the male-dominated job pays. Standard errors are clustered on individual. The sample for this analysis does not implement the correction described in footnote 20. N = 322 individuals.

Table A.13: Willingness to Accept Male Supervisor or Coworkers

	(1) Case 1	(2) Case 2	(3) Case3
$\alpha_1: \Delta^{5000}$	0.207*** (0.040)	0.144*** (0.038)	0.137*** (0.038)
$\alpha_2: \Delta^{10000}$	0.285*** (0.042)	0.245*** (0.040)	0.289*** (0.046)
$\alpha_3: F$	-0.032* (0.019)	0.000 (0.013)	-0.004 (0.013)
$\alpha_4: \Delta^{5000} \times F$	0.015 (0.026)	-0.036 (0.023)	-0.021 (0.026)
$\alpha_5: \Delta^{10000} \times F$	0.007 (0.028)	-0.028 (0.019)	-0.047* (0.028)
α_0 : Respondent at 0 Diff	0.406*** (0.041)	0.241*** (0.036)	0.249*** (0.038)
Respondent Treatment: $\alpha_2 - \alpha_1$	0.078 (0.060)	0.101 (0.059)	0.153 (0.067)
SE			
P-value	[0.196]	[0.088]	[0.022]
Parent Treatment: $\alpha_5 - \alpha_4$	-0.008 (0.036)	0.007 (0.032)	-0.026 (0.040)
SE			
P-value	[0.826]	[0.822]	[0.514]
Parents 5000 vs 0: $\alpha_3 + \alpha_4$	-0.017 (0.027)	-0.036 (0.026)	-0.025 (0.026)
SE			
P-value	[0.534]	[0.177]	[0.332]
Parents 10000 vs 0: $\alpha_3 + \alpha_5$	-0.025 (0.024)	-0.028 (0.018)	-0.051 (0.030)
SE			
P-value	[0.314]	[0.114]	[0.086]
Parents at 0 Difference: $\alpha_0 + \alpha_3$	0.373	0.241	0.245
Respondent at 5000 Diff: $\alpha_0 + \alpha_1$	0.613	0.385	0.385
Parents at 5000 Diff: $\alpha_0 + \alpha_1 + \alpha_3 + \alpha_4$	0.596	0.349	0.360
Respondent at 10000 Diff: $\alpha_0 + \alpha_2$	0.691	0.486	0.538
Parents at 10000 Diff: $\alpha_0 + \alpha_2 + \alpha_3 + \alpha_5$	0.666	0.458	0.487
Individuals	249	250	250
N	984	1000	925

Notes: Reports results from Equation 2 estimated separately for each case. Case 1 presents the choice of choosing a male supervisor over a female supervisor, holding female coworkers fixed. Case 2 presents the choice of choosing male coworkers over female coworkers, holding a male supervisor fixed. Case 3 presents the choice of choosing male coworkers and a male supervisor over female coworkers and a female supervisor. In all cases, respondents were asked to consider all other attributes of the two jobs as identical. The salary difference between the jobs gives how much more the male-dominated job pays. Standard errors are clustered on individual and reported in parentheses. P-values reported in square brackets.

B Willingness-to-Accept Survey Experiment

The following text introduced the survey experiment:

Suppose you are actively looking for work, having recently finished your education. You are not currently employed anywhere. Through your job search, you receive offers from two potential jobs. Both jobs are natural fits for your educational background, and have the same job title, but are at two different companies: one is at Company A and one is at Company B. The type of work at both jobs is very similar and would use the skills that you learned in college. Both Company A and Company B are located in the same area, and you have reliable modes of transportation to get to both of them. Both Company A and Company B have similar hours, but neither company allows employees to have flexible working hours.

In the questions that follow, you will learn information about whether the majority of employees at each company is female or male, whether your supervisor at each of the companies would be female or male, and the salary at each Company. At the end of receiving this information, you will be asked which offer you would take: the offer from Company A or the offer from Company B.

Randomized at the individual level whether Company B in the second comparison of case has a salary of 25,000 or 30,000 PKR/month.

Case 1:

Company A: Mostly female employees, female supervisor Salary: **Rs 20,000/Month.**

Company B: Mostly female employees, male supervisor Salary: **Rs 20,000/Month.**

Company A: Mostly female employees, female supervisor Salary: **Rs 20,000/Month.**

Company B: Mostly female employees, male supervisor Salary: **Rs X/Month.**

Case 2:

Company A: Mostly female employees, male supervisor Salary: **Rs 20,000/Month.**

Company B: Mostly male employees, male supervisor Salary: **Rs 20,000/Month.**

Company A: Mostly *female* employees, *male* supervisor Salary: **Rs 20,000/Month.**

Company B: Mostly *male* employees, *male* supervisor Salary: **Rs X/Month.**

Case 3:

Company A: Mostly *female* employees, *female* supervisor Salary: **Rs 20,000/Month.**

Company B: Mostly *male* employees, *male* supervisor Salary: **Rs 20,000/Month.**

Company A: Mostly *female* employees, *female* supervisor Salary: **Rs 20,000/Month.**

Company B: Mostly *male* employees, *male* supervisor Salary: **Rs X/Month.**

After each comparison, the following questions were asked, with randomization at the individual level whether they were asked first about how they themselves would choose or asked first about what their parents would recommend:

Would you take the offer from Company A or Company B?

- Company A
- Company B
- I do not wish to answer

Would your parents recommend that you take the offer from Company A or Company B?

- Company A
- Company B
- I do not wish to answer

C Beliefs

An endline survey was conducted after the field experiment in May 2019. The response rate was 23%, with no differential attrition by treatment status from the field experiment (Appendix Table C.14). Those who responded to the survey were more likely to be a

student, had lower levels of education, and submitted slightly more applications before the experiment began (Appendix Table C.15). Appendix Table C.16 reports analogous specifications to Equation 1, but with the unit of observation as the respondent by occupation category, for beliefs outcomes and whether the respondent ranked the given occupation in their top three most preferred occupations at endline after the experiment. Beliefs were collected about the three occupations that the respondent stated that they were most interested in being matched to, at endline. Appendix Table C.16 shows that respondents' salary expectations about occupations are responsive to information about supervisor or employee gender, but do not follow a clear pattern. One explanation could be that additional information about supervisor or employee gender, particularly in conjunction with priming about family job search advice, leads the jobseeker to pay more attention to salary of the job postings that they receive. Additionally, being primed to think about family job search advice along with information about employee gender decreases the minimum number of male employees that respondents expect in the given occupation, while receiving information about both supervisor and employee gender shifts the respondent's beliefs downwards about both the minimum and average number of male employees. Column 6 shows that the treatments do not shift the likelihood of selecting any given occupation in the three most preferred.

Table C.14: Balance: Endline

	(1) Has endline data
Priming	-0.026 (0.687)
Supervisor	0.056 (0.416)
Employee	-0.028 (0.678)
Employee \times Priming	0.125 (0.191)
Supervisor \times Priming	-0.049 (0.610)
Supervisor \times Employee	-0.068 (0.469)
Priming \times Supervisor \times Employee	0.071 (0.603)
Constant	0.200*** (0.000)
Observations	582

Notes: Table reports attrition across treatment groups for responding to the endline survey. Robust standard errors are reported in parentheses. Unit of observation is the individual. * $p < .1$, ** $p < .05$, *** $p < .01$.

Table C.15: Attrition: Endline

Variable	N	(1) 0	N	(2) 1	(1)-(2) Pairwise t-test	
		Mean/(SE)		Mean/(SE)	N	P-value
Age	458	24.111 (0.241)	124	23.419 (0.448)	582	0.174
Employed	361	0.133 (0.018)	104	0.125 (0.033)	465	0.830
Student	406	0.655 (0.024)	109	0.734 (0.043)	515	0.105
Secondary	458	0.044 (0.010)	124	0.097 (0.027)	582	0.061*
Bachelors	458	0.476 (0.023)	124	0.492 (0.045)	582	0.753
Post-Bachelors	458	0.465 (0.023)	124	0.403 (0.044)	582	0.216
Married	424	0.125 (0.016)	118	0.093 (0.027)	542	0.310
Experience	458	1.306 (0.112)	124	1.226 (0.176)	582	0.702
BL Applications	458	0.561 (0.023)	124	0.661 (0.043)	582	0.039**

Notes: Table reports differences in baseline characteristics between respondents who completed the endline survey and those who did not (attrited). Outcome variables are baseline characteristics at the time of enrollment onto the platform. Standard errors are reported in parentheses. Unit of observation is the individual. * $p < .1$, ** $p < .05$, *** $p < .01$.

Table C.16: Endline: Beliefs and Rankings

	(1)	(2)	(3)	(4)	(5)	(6)
	Mean Salary	Min Male Employees	Mean Male Employees	Max Male Employees	Prob Hire Woman	Top 3
$\beta_1: P_i$	2651.858 (1924.428)	6.458 (4.336)	4.509 (4.892)	4.487 (4.085)	1.419 (5.519)	-0.000 (0.013)
$\beta_2: S_i$	4715.132* (2659.277)	6.454 (4.553)	7.747 (4.865)	5.985 (4.431)	0.248 (5.521)	-0.007 (0.026)
$\beta_3: E_i$	14638.491*** (4173.318)	8.179 (5.494)	8.343 (4.928)	6.187 (5.011)	-7.163 (7.175)	0.003 (0.019)
$\beta_5: E_i P_i$	-14692.771*** (4661.557)	-10.776* (6.191)	-9.147 (6.030)	-9.632 (5.900)	4.424 (9.342)	-0.008 (0.009)
$\beta_4: S_i P_i$	-6932.189* (3801.537)	-0.184 (5.753)	-1.582 (5.562)	-0.716 (4.606)	-0.860 (7.628)	0.010 (0.032)
$\beta_6: S_i E_i$	-16066.157*** (5183.866)	-11.475* (6.234)	-13.119** (5.909)	-8.091 (5.810)	11.655 (8.066)	0.003 (0.039)
$\beta_7: P_i S_i E_i$	17409.822** (6201.728)	7.748 (7.770)	10.787 (7.017)	8.161 (6.805)	-7.052 (11.654)	-0.013 (0.050)
Respondents	132	131	131	130	130	124
N	629	624	627	625	622	2480
Control Mean	29166.667	38.972	54.389	63.597	47.056	0.146

Notes: Table reports attrition across treatment groups for responding to the endline survey. Robust standard errors are reported in parentheses. Unit of observation is the individual. * $p < .1$, ** $p < .05$, *** $p < .01$.