Leadership, Social Networks and Workplace Climate Through a Gender Lens *

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Abstract

Using uniquely detailed data from over 2000 professionals in 24 large corporations in Turkey, we investigate how female leaders shape workplace climate in the corporate world. We document that female leaders do not possess "male-like" characteristics but rather preserve their female qualities. Female leadership breaks male homophily and increases professional ties with female colleagues. Workplace climate is healthier under supportive leaders, and female leaders are more likely than male leaders to establish professional support links with female employees. Finally, we show that females working under female leaders are less likely to quit their job, and have higher promotion prospects.

JEL Codes: C93, J16, M14

Keywords: leadership; workplace climate; social networks; promotion; gender

PRELIMINARY. PLEASE DO NOT CIRCULATE.

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1 Introduction

Creating and maintaining a healthy work environment is essential for workers' motivation, well-being, and productivity. Central to a good work environment is the quality of social interactions, characterized by support networks established among colleagues as well as between leaders and subordinates (Kahn et al., 2018; Dutton and Ragins, 2007). The latter is particularly important as leaders have an undeniable role in setting the tone of social interactions and therefore shaping the workplace atmosphere (Hoffman and Tadelis, 2021; Artz et al., 2017; Lazear et al., 2015). There is now a growing interest in understanding how leadership qualities and social skills shape employees' experiences in a workplace (Haylock et al., 2022; Englmaier et al., 2021; Heinz et al., 2020; Deming, 2017).

In this paper, we study the role of corporate team leaders' gender in shaping features that are critical for the success of corporations. To our knowledge, this is the first study to identify the impact of leaders' gender on (i) the formation of support networks, (ii) perceived workplace climate, (iii) the link between the two, and we complement this by studying (iv) how leader's gender affects tenure (respectively quits) and promotion rates. Our study is motivated by recent evidence that women in decision making positions tend to transform the workplace atmosphere by bringing their own style of leadership and management of social relationships into the workplace (see, Chakraborty and Serra, 2019; Bednar and Gicheva, 2014; Matsa and Miller, 2013).[1]

Compared to previous studies, our study features a data set with an unprecedented level of detailed information on the characteristics, social networks and perceived workplace climate of actual workers and leaders. These data - measured by using a diverse measurement toolkit - are also complemented with HR-data on promotions and separations. Data were collected in fall 2019 in 24 large (often multinational) corporations in Turkey, covering 240 departments in these companies and more than 2,900 white-collare workers. All of these companies have highly centralized and transparent subordinate-leader matching practices, which enables identification of the effects of a leader's gender on workplace outcomes.

Our outcome measures capture the following aspects.First, with regards to social support networks, we are interested in (i) whether a worker receives support from his/her team leader

[1]A broader literature exists on managers and their personal management practices that they bring to their firms. See, e.g., Malmendier et al. (2011), Bloom and Van Reenen (2010), Graham and Narasimhan (2004), and Bertrand and Schoar (2003).

and female colleagues on professional and personal matters, and (ii) the degree of male and female homophily within a department. Using tools from social network theory, we follow Coleman (1958) and we construct female and male homophily indices in each department by calculating the-higher-than-expected intra-gender ties. Second, we use item-response survey questions to construct normalized indices of i) workplace satisfaction, ii) perception of firms' meritocratic values, iii) collegiality, iv) job satisfaction, iv) behavioral norms, and v) leader professionalism. Third, we complement our data by accessing individual-level long-term administrative outcomes on employee separations (layoffs and quits) and promotions.

We start by looking at who becomes a leader. While at first sight we observe a small 5% gender gap in favor of men in the probability to become a team leader, this gap disappears once we control for demographics, with older and married employees being significantly more likely to be leaders. We also find that leaders have a higher fluid cognitive ability (IQ) and are more competitive and altruistic. Interestingly, female team leaders' characteristics are significantly different from those of male team leaders. Female leaders are significantly less competitive, more risk-averse, and less cooperative (Furtner et al., 2014; Brown-Kruse and Hummels, 1993; Sell et al., 1993; Sell and Wilson, 1991). Moreover, the score significantly higher in cognitive empathy, and hold more modern gender role beliefs. These findings imply that progression into leadership positions does not require women to possess male attributes. This finding goes against a prominent literature that suggests a series of factors for women to shy away from leadership positions, like lack of competitiveness and risk-taking (see, e.g., Eckel and Grossman, 2008; Fisman and O'Neill, 2006), reticence to initiate negotiations (e.g. Babcock and Laschever, 2021; Bowles et al., 2007), or aversion to competitive environments (e.g. Niederle, 2017; Flory et al., 2015; Preece and Stoddard, 2015; Niederle and Vesterlund, 2007; Gneezy et al., 2003). Instead, we show that female team leaders are significantly different from their male counterparts in terms of their skill endowments, except for innate cognitive ability, verbal creativity, and altruism.

In order to identify the effects of a leader's gender on the social networks and workplace climate within firms we rely on the variation in working under a female leader, or between-department variation in the share of female leaders within firms. Our identification assumption requires that employees who work under female leaders do not systematically differ from employees who work under male leaders. To justify the plausibility of this assumption, we provide qualitative and quantitative evidence. First we present qualitative evidence from detailed testimonies about employee-leader matching practices from human resources directors of the participating companies. Second, we make use of our rich data to

test for balance of pre-determined characteristics and selection into female-led teams based on observable characteristics. Third, we implement a simulation-based test for selection into female-led teams based on unobserved characteristics following Bietenbeck (2020).

We document several important findings related to the impact of leader's gender on the structure of social networks and workplace climate within firms. First, we find that female leaders are 12% (15%) more likely than male leaders to provide professional (personal) support to their female subordinates. Male employees, however, are equally likely to receive support from male and female leaders. Second, female leadership eliminates the gender difference in homophilic professional and personal interactions within departments. Departments with male leadership show very strong homophilic social ties among male workers. This finding is consistent with Cullen and Perez-Truglia (2019), who show that male leaders tend to interact more with male subordinates.[2] We find negative female homophily in case of male leaders, meaning that female subordinates are far less connected to each other than expected by chance. This changes completely with female leaders, as they break male homophily and increase female homophily significantly. Third, we find that both male and female subordinates establish remarkably more social ties with their non-leader female colleagues under female leadership. In sum, female leaders bring about a much more gender-balanced network structure. Given that gender homophily in networks explains a significant part of the gender gap in earnings and promotions (Mengel, 2020; Zeltzer, 2020; Cullen and Perez-Truglia, 2019; Caetano and Maheshri, 2017; Saloner, 1985), our results have clear implications for policies that aim at reducing these gender gaps, which we touch upon when we investigate employee separation and promotions.

Regarding workplace climate, we find that in departments where team leaders are deemed supportive, workers report much more favorable outcomes with respect to workplace satisfaction, meritocracy, collegiality, job satisfaction, behavioral norms, and leader professionalism. Under supportive leadership (i.e., when subordinates nominate their leaders in their social network), we detect no gender difference in reported workplace climate regardless of the leader's gender. Yet, when leaders are not approachable, females working under female leaders are significantly less happy than males under non-supportive male leaders. Our results

[2]It is important to note that social interactions in Cullen and Perez-Truglia (2019) are conceptually different from ours. While they focus on vertical social interactions between managers and subordinates, we also consider horizontal interactions among subordinates. Moreover, while Cullen and Perez-Truglia (2019) study the effects of these vertical relationships on the gender pay gap and promotions, we focus instead on the relational atmosphere and perceived workplace climate within the firms, as well as employee separations and promotions.

suggest that having a female leader is important to female workers' well-being in the workplace, but this is conditional on their leader being a supportive one. Female workers seem to judge workplace conditions much worse than their male colleagues when they do not receive support from their female leaders. This finding fits nicely with evidence that females have different expectations from other females and perhaps tend to hold each other against higher standards.[3]

Our paper contributes to several strands of the literature. It is most closely related to the new and growing literature on the nexus between leadership quality, social interactions, and workplace climate. Cullen and Perez-Truglia (2019), for example, show that male employees who socialize more with their male managers get promoted more easily than their male colleagues who are assigned to female leaders. On the contrary, career progression of females is not affected by leader gender. textcitegriffith2018demographic show that females regard gender imbalanced academic departments as noncollegial and inequitable. Our paper advances this literature by showing that female leadership changes the structure of relational networks in the workplace and helps employees form more social connections both with their leaders and their female colleagues. In particular, female leadership breaks male homophily in departments. Additionally, we demonstrate the importance of supportive leadership on perceived corporate climate, especially for female subordinates.

Second, we contribute to the literature on self-selection into leadership roles. This literature documents consistent gender differences in self-selecting into leadership positions and strives to understand the factors explaining this difference. Much of this literature utilizes controlled lab settings and points to gender differences in specific attributes, such as confidence, responsibility aversion, fear of backlash, aversion to competition and risk-taking, in explaining the documented gender gap in the willingness to become a leader (see, e.g., Alan et al. (2020), Born et al. (2020), Bordalo et al. (2019), Chen and Houser (2019), Coffman (2014). We advance this literature by showing for 24 large companies and 240 departments that actual female leaders do not necessarily share male attributes. Instead, our results strongly suggest that women bring their own style of leadership to corporate life and manage interpersonal relationships differently than men, which accords well with the findings of Chakraborty and Serra (2019), Bednar and Gicheva (2014), and Matsa and Miller (2013).

[3]In recent work, Abel (2019) finds that negative feedback by female managers decreases the job satisfaction and the perceived importance of the task significantly. Consistently, Grossman et al. (2019) show that women leaders are assessed less positively and rewarded less generously than equally effective men.

Finally, our paper speaks in a broader sense to the literature that strives to identify the impact of female leadership on gender-related personnel decisions. This literature has not yet produced a clear-cut result. Kunze and Miller (2017), Kurtulus and Tomaskovic-Devey (2012) and Matsa and Miller (2011), for instance, show that when there are more female bosses in the higher ranks, women have a significantly higher likelihood of career-advancing. Bertrand et al. (2019) find no effect of female presence in corporate boardrooms on other women beyond the women who made it to the boardrooms. Bagues et al. (2017) and Bagues and Esteve-Volart (2010) report that the share of females in hiring committees does not change the likelihood of females getting hired or even decreases it. Compared to these studies, our data originate from a large set of different companies across diverse industries and we employ an extensive toolkit to measure several important outcomes, i.e., networks, workplace climate, and personnel decisions.

Overall, our results suggest that the benefits of the fair representation of female leadership goes beyond social justice concerns. Having more women in decision-making positions may go a long way in taming toxic social relationships in the workplace, contributing to perceived climate in the high-paced corporate environment. Recent work like Azulai et al. (2020) and Alan et al. (2023) show that organizational culture can be improved via training programs. Yet, cultural transformations may be painfully slow. Innovative training programs notwithstanding, increasing female presence in decision-making positions and improving support by leaders, may be a faster and higher-return approach to establishing a healthy organizational culture.

The rest of the paper is organized as follows. Section 2 provides the background and the context for the study. Section 3 describes our outcomes of interest and the way we construct them. Our descriptive results are presented and discussed in Section 4. Section 5 details our empirical framework and reports our main results. We conclude in Section 6.

2 Background and Context

Micro data on corporate professionals spanning multiple firms are not available in details required by this study. To answer the questions we ask in this study, we needed to enlist several large corporations with centralized and transparent hiring and subordinate-leader matching practices. Enlisting these firms meant their full cooperation in allowing us to collect detailed individual information from their white-collar professionals of all ranks on

demographics, socio-cognitive skills (fluid IQ, emotional intelligence, verbal creativity), social networks, economic and social preferences, perceived workplace climate, and HR-data. We reached out to prominent large corporations operating in various sectors in Turkey and requested their involvement in the project under these conditions. As these are large corporations with hectic operation hours and busy professionals, enlisting them involved multiple meetings with their CEOs, HR officials, compliance departments, and eventually signing confidentiality agreements and research collaboration protocols with each of them.[4] Out of 30 corporations we contacted, we managed to secure the collaboration of 24 companies from 6 sectors that met our criteria regarding subordinate-leader matching practices. A number of these firms are large multinationals operating in Turkey, and the majority of them are companies that belong to large conglomerates. While more companies expressed interest in being part of this project, we capped the number at 24 due to our physical capacity of on-site visits for onerous data collection. We also rejected corporations where subordinate-leader match practices implied selection.[5] Our firms are significant players with large market shares in their sectors, which are defense, chemical, energy, finance, construction, and textile.

After successfully enlisting 24 companies, we launched an extensive field study. In Fall 2019, we visited each firm (often multiple times), gathered workers and team leaders, department by department, in meeting rooms, and collected our data. An average data collection session lasted about 3 hours, and we had three sessions. Each of them started with a brief introduction and signing individual consents.[6] In the first session, We played incentivized games to elicit social and economic preferences (lab-in-the-field experiments). In the second session, we conducted three major cognition tests, followed by a detailed social network elicitation in the third session. At the end of the latter, participants were directed to a detailed online survey. Preventing participants' communication with other departments for the incentivized games was the most important logistical challenge we faced in large firms. To overcome this, we conducted our incentivized experiments in parallel using different meeting

[4]Each formal document was signed by the relevant company's CEO, and the president of Kadir Has University. We also obtained ethics approval from Kadir Has University Ethics Board.

[5]None of the corporations we approached had a match practice based on gender. However, some corporations with an interest to participate declared that supervisors (team leaders) might be consulted in choosing subordinates for some tasks on some occasions. We took this as an indication of selection and did not include these firms in our study.

[6]Designated HR coordinators informed all white-collar workers prior to our visit, and only the ones who wanted to participate in the study did come to meeting rooms. We made sure that companies informed their workers that the participation was voluntary, and not joining would not have any consequences for them. Most workers participated. We provide our translated introduction slide, which is similar to the information provided to all participants by HR units prior to our visit, in the Online Appendix.

rooms. Participants used their smartphones to enter into our data collection platforms, following our instructions step by step. We provided tablets and internet to participants when needed.

Besides our access to these firms and the suitability of their HR-practices to identify the effects of leaders' gender, Turkey offers an ideal setting to study female leadership and workplace climate in large corporations. On the one hand, it is a large OECD country with relatively high rates of female corporate professionals and high rates of female leadership. According to McKinsey's "Women Matter Turkey 2016" report, although female participation in labor force is still low in Turkey, female representation in the leading companies (41%) is only slightly lower than that of Latin America (43%) and not so far from that of the US (53%). The representation of females in executive committees is 25% in Turkey, which is higher than 8% in Asia, 17% in the US, and 20% in Europe. On the other hand, despite significant advances made regarding gender equality since the foundation of the secular republic in 1923, the conflict between traditional and modern gender norms remains in all walks of life. Given that we reached out to prominent modern corporations employing highly educated male and female professionals, our findings are likely to be generalizable to countries where there is a relatively high presence of females in the corporate sector, but nevertheless, gender equality in corporate life is still a distant goal.

3 Data and Variables

3.1 Economic and Social Preferences: Lab-in-the field experiments

In the first part of our data collection we elicit economic and social preferences in order to examine gender differences of corporate leaders in these preferences, and to control for individual characteristics when estimating the effect of leaders' gender on social networks and workplace climate. This part included four incentivized games (see the Online Appendix for the detailed instructions).

To measure competitiveness, participants had to add up 3 two-digit numbers ((Niederle and Vesterlund, 2007). At first, participants were asked to complete as many additions as possible in 2 minutes, applying a piece rate scheme of $0.5 per correct answer. After this, participants were assigned to three-person groups (anonymous) within their department, this time applying a tournament scheme. A participant would earn three times the piece rate

($1.5) per correct answer if and only if he/she came first in the group (with ties being broken randomly). Finally, participants were asked to self-select into a payment scheme, piece rate or tournament. In the latter case, their performance would be compared against their group members' stage 2 (tournament) performances. The binary indicator of tournament choice in the final decision is our measure of competitiveness.

To measure cooperation, we played a simple public goods game (Fischbacher et al., 2001). Participants were randomly assigned to 3-person groups and were given a $5 endowment, which they could contribute to a joint project. The project provided a 100% sure return so that the computer doubled the total contributions within each group. The doubled contributions were then divided equally among all three group members, regardless of their initial contribution. Our measure of cooperation is the amount contributed to the project, which lies between 0 and $5.

To measure risk attitudes, each participant received a $5 endowment that could be invested in a risky ventures (Charness and Gneezy, 2010). The venture tripled the initial investment with a 50% chance and wiped it out entirely otherwise. The participants were told that the amount they did not invest in the risky venture remains safe. The amount of investment into the risky venture is our measure of a participant's risk tolerance, which lies between 0 and $5.

After having played these three games, participants were asked what fraction of their experimental earnings from these games they were willing to donate to disadvantaged children in Eastern Turkey.[7] The fraction they state (between 0 and 100%) is our measure of altruism. This game completed our Part 1.

3.2 Cognitive and Socio-Cognitive Skill Measures

In Part 2, we measured participants' cognitive and socio-cognitive abilities (see the Online Appendix for details). We use these measures to document gender differences in skills of corporate leaders, and to control for individual characteristics when estimating the effect of leaders' gender on social networks and workplace climate.

To measure cognitive capacities, we implemented Raven's Progressive Matrices (Raven, 1960). They provide a measure of fluid IQ, which is typically considered to be closer to that is

[7]Their donation decisions were actually implemented and participants were informed about this before they decided on their donation amount.

known as "innate ability" of an individual than standardizednumeracy and verbal tests. Our second measure of cognitive capacity relates to cognitive empathy. For this, we implemented the "Reading the Mind in the Eyes Task" developed by Baron-Cohen et al. (2001) and Baron-Cohen et al. (1997). In this test, participants were given pictures of different people's eyes and asked to pick the correct emotion reflected in those eyes by choosing one of four options presented. This test is known to measure emotional intelligence (cognitive empathy). Finally, we measured verbal creativity (Mednick, 1962), as this is considered an important skill for leaders (Hughes et al., 2018; Reiter-Palmon and Illies, 2004). Participants were given three unrelated words and asked to find a single word that turns all three into meaningful phrases when added to the end or the beginning of all three words.

3.3 Social Networks

Supportive networks are markers of a healthy workplace climate and important to achieve job satisfaction, develop a sense of belonging to the firm, and boost solidarity with colleagues (Guadalupe et al., 2020; Srivastava et al., 2018). Therefore, part 3 of the data collection elicited social networks in the firm. We collected social network data in two domains of interactions, professional and personal. For the former, participants were asked to list up to 3 colleagues they regularly consult when they need professional (work-related) help. For the latter, they were asked to nominate up to 3 colleagues whom they consulted in personal matters, allowing for overlaps across both domains. Using these nominations, we construct individual (node) level and department level outcome measures that characterize the nature of social interactions established in the firm.

Our node-level network measures use out-degree ties, that is, the nominations made by a participant. The minimum value of out-degree is 0, corresponding to no nomination, whereas the maximum possible value is set to 3 colleagues. In a healthy workplace unit, we expect leaders to provide both professional and personal help to their subordinates. Therefore, our main focus is whether a team leader is nominated by his/her subordinates. We are also interested in the gender composition of nominations. For this, we construct a measure that gives the ratio of female colleagues nominated by a participant. Naturally, this ratio is not independent of the proportion of females in the department. Therefore, in all our individual-level analyses, we control for the share of females in the department and the department size.

Our second set of network measures includes department-level gender homophily indices. For this, we first follow Coleman (1958) and construct a homophily index for females and males separately. Coleman's Homophily Index summarizes the degree to which the members of a group form links with the members of the same group (referred to as inbreeding) and it is constructed as follows.

Let F and M denote groups of females and males in a department respectively. Let us also denote the number of intra-gender links formed by group i in department j as s_{ij}, and the total number of links formed by group i in department j as t_{ij}, where $i \in \{F, M\}$. The ratio $\frac{s_{ij}}{t_{ij}}$ then gives us the share of within-group (homophilic) ties for group i.

Denoting w_{ij} as the expected proportion of within group links of group i if the links are formed at random, the excess homophily of group i is defined as $\frac{s_{ij}}{t_{ij}} - w_{ij}$. To make this index invariant to department size and gender composition within department, following Coleman (1958), we normalize excess homophily by $1 - w_{ij}$, which is the maximum possible excess homophily that can be observed for group i in the case of excess homophily. If however excess homophily is negative (forming more links with the out-group compared to in-group), we then normalize excess homophily index by w_{ij}. This ensures that the measure takes values between -1 and +1. Consequently, Coleman's Homophily Index for group i in department j is given by:

$$C_{ij} = \begin{cases} \frac{\frac{s_{ij}}{t_{ij}} - w_{ij}}{1 - w_{ij}} & if \quad \frac{s_{ij}}{t_{ij}} - w_{ij} \geq 0 \\ \frac{\frac{s_{ij}}{t_{ij}} - w_{ij}}{w_{ij}} & if \quad \frac{s_{ij}}{t_{ij}} - w_{ij} < 0 \end{cases}$$

We compute Coleman's Homophily Index separately for females and males in both professional and personal support domains.

3.4 Perceived Workplace Climate

At the end of the social network elicitation participants were directed to an online survey platform. The survey included detailed questions on demographics and a rich set of item-response questions to measure workplace climate (see the Online Appendix for all questions). We focus on six proxies for workplace climate: i) work satisfaction, ii) meritocracy, iii)

collegiality, iv) job satisfaction, v) behavioral norms, and vi) leader professionalism. We extract common factors to construct each of these measures, and they are constructed so that higher values represent favorable indicators. In addition to these proxies, which we use as our primary outcomes, we construct a gender norms index using several item-response questions, with higher values indicating more modern (equal) gender role beliefs.

3.5 HR-data

We could complement our rich data from the incentivized games and surveys through access to HR-records. Initially, we had planned to collect those data for the second half of 2020, but then in early 2020 the COVID-19 pandemic hit also Turkey. Finally, we were granted access to individual level data on layoffs and quits that happened between July 1, 2021 and November 30, 2021. The time window was chosen to exclude the firing-ban that had been passed by the Turkish government in response to the COVID-19 pandemic. This ban was legislated on April 16, 2020 and lasted until June 30, 2021, ruling out any firings in this period. In addition to data on separations, we also obtained individual level data on promotions for the same time period.

4 Descriptive Results

4.1 Sample Characteristics

Table 1 summarizes our individual-level measures, separately for females and males, and split into different panels. The last column in each panel provides the p-values obtained from the test of equality of means across gender, controlling for firm fixed effects and clustering the standard errors at the firm level.

In total, 2.913 white-collar workers participated in our study. 34% of them are female professionals. This number mirrors the overall Turkish female labor force participation rate recorded in 2019 (33.7%) pretty accurately. From Panel I of Table 1 we see that women are on average by about 2 years younger than male employees, and that females are less often married. While tenure and cognitive abilities do not differ across gender, women perform better in cognitive empathy and verbal creativity. Panel II presents results from our incentivized games. Consistent with most of the experimental literature, female professionals

in our sample are significantly less risk-tolerant (Borghans et al., 2009; Croson and Gneezy, 2009) and less competitive (Niederle and Vesterlund, 2007). We also find women to be less cooperative than men, but there are no differences in altruism. Regarding workplace climate, female professionals hold a much more pessimistic view of their workplace environment than their male colleagues, as panel III shows. Women report significantly lower job and workplace satisfaction, and worse behavioral norms than their male colleagues.

Panel IV then presents leadership variables, showing that 12.9% of females and 16.5% of males hold a leadership position in our sample. While this differences is significant, the next subsection will show that this is not robust to controlling for personal characteristics. In Panel IV we also see that 39.7% of females work in female-led teams as opposed to only 20.8% for males. Regarding social networks, we note that while 57% (38%) of females state that they receive professional (personal) support from their leaders, these proportions stand at 59% (49%) for men (with the difference for personal support being significantly different from the corresponding female fraction).

Table 2 presents the summary statistics on the level of departments. The average department size in our sample is 21, with a minimum of 1 and a maximum of 181 white-collar workers. The share of females in departments exhibits substantial heterogeneity, with some departments having only men and others only women. On average, the share of women across departments is 36.2%. Taking the share of women in departments into account, we then report the Coleman indices of homophily. These indices exhibit significant male homophily in professional and personal support domains, with substantial variation across departments. Female homophily is much lower, and in the realm of professional networks even negative. The last row of Table 2 shows the proportion of female leaders. Across all departments, it is 27.4%, with large heterogeneity across departments. from ones with only male leaders to others with only female leaders. Note that we use the term "leader" broadly throughout the paper. A "leader" in our study is someone responsible for other white-collar workers in a team within a department.[8] Leaders are the first point of contact for the workers within the team in terms of reporting and receiving feedback. With this definition, while some (small) departments have a single leader, larger departments have multiple leaders in our data. Therefore, we will use the binary indicator of leader's gender for our individual-level analyses, and our department level analyses will use the "share of female leaders" in the de-

[8]The size of these teams vary from 1 to 26, with a mean of 6 employees. Our results are robust to controlling for team size in regressions.

partment as the variable of interest. Note also that our team leaders naturally have leaders as well. We make a strong distinction between a leader and a subordinate by referring to the former as someone who is responsible for several workers, regardless of their number. The latter is a worker who has no supervisory and leadership duties in the firm. With this definition of a "leader" in mind, we now turn to examining the characteristics of leaders. While not being the paper's central focus, to the best of our knowledge, this is the first comprehensive documentation of gender differences in a wide range of characteristics of actual corporate leaders.

4.2 Characteristics of a Corporate Leader

Table 3 presents the predictive power of demographics, cognitive and non-cognitive abilities, and of economic and social preferences on the probability of being a corporate team leader. Controlling for department size, share of females within department, job task and firm fixed effects, females are 5% less likely to be in a leadership position, as we see in column (1).[9] However, adding tenure in the firm, age, and marital status eliminates this gender difference entirely, as column (4) shows. There we see that the gender dummy is insignificant, but that older and married workers with higher fluid cognitive ability, and those who are more competitive, are significantly more likely to be in a leadership position in a corporation. For example, a one standard deviation increase in fluid cognitive ability is associated with a 6% increase in the likelihood of being a leader, and competitive individuals are 4% more likely to hold leadership positions. Risk-taking and cooperation do not predict leadership.

Figure 1 plots gender differences of leaders, but also of non-leaders (subordinates), in cognitive abilities, social and economic preferences, and gender role beliefs. Controlling for firm fixed effects, female leaders stand out as significantly more risk-averse, less willing to compete, and less cooperative. They hold more progressive gender role beliefs than their male counterparts, and exhibit higher cognitive empathy. We detect no gender differences in fluid cognitive ability in either leaders or subordinates. These findings suggest that the skill set of females who hold leadership positions are not necessarily the same as males who hold similar positions.

The figure therefore shows that female leaders do not necessarily possess more male-like

[9]Eckel et al. (2020) provide an excellent review on gender gaps in leadership, drawing on a plethora of experimental studies.

characteristics than non-leader females. On the contrary, the gender differences in characteristics are even more pronounced for the leader sample. This finding challenges the prior that "male-like" characteristics are a requisite for leadership positions. Rather, these findings are consistent with those of Adams and Funk (2012) who find that female and male directors differ in their core values and attitudes. Given that their skill endowments exhibit differential patterns, it is plausible to expect female leaders to shape social interactions and workplace climate differently from male leaders. So, we turn to our main results on the influence of female leadership on social networks and workplace climate.

5 Results

In this section, we first lay out our main empirical specification, and second, discuss our empirical strategy for identification. We then report our main results regarding the effects of female leaders on social networks, perceived workplace climate, and promotions and separations within departments.

5.1 Empirical Model

Our basic empirical specification for individual-level outcomes is as follows:

$$y_{ijf} = \alpha_0 + \alpha_1 \text{FemLead}_{ijf} + \text{IC}'_{ijf}\beta + \text{DC}'_{jf}\gamma + \delta_f + \varepsilon_{ijf}, \tag{1}$$

where y_{ijf} is the outcome of interest for worker i in department j in firm f. FemLead_{ijf} is the binary indicator of working under a female leader. IC_{ijf} is a vector of individual characteristics for worker i in department j in firm f that are likely predictive of the outcome y. Vector DC_{jf} contains department characteristics, including the share of female workers in the department and department size. Finally, δ_f represent firm fixed effects. The coefficient of interest in this basic specification is $\hat{\alpha}_1$, which we interpret as the effect of working under a female leader. The above specification is modified as appropriate to conduct various heterogeneity analyses.

Our department level empirical specification is as follows:

$$y_{jf} = \alpha_0 + \alpha_1 \text{ShareFemLead}_{jf} + \text{DC}'_{jf}\gamma + \delta_f + \varepsilon_{jf}, \tag{2}$$

where y_{jf} is a department level outcome of interest (for example, an index for male ho-

mophily), ShareFemLead_{jf} is the share of female leaders in department j in firm f. Recall that larger departments may have multiple leaders in our data. Therefore, our department level analyses uses "share of female leaders" in the department as the variable of interest. Vector DC_{jf} contains departmental characteristics. Finally, δ_f denotes firm fixed effects. In all analyses, we cluster standard errors at the firm level. Because the sample contains a small number of clusters (24 corporations), in addition to clustered robust standard errors, we also present wild bootstrapped p-values adjusted for the small sample.

5.2 Empirical Strategy

Our main empirical specification relates working in a female-led team to a battery of social network and workplace climate outcomes. Figure 2 displays the distribution of the proportion of female leaders within departments. While 102 departments have no female leaders, there is quite a lot of heterogeneity in the proportion of female leaders in the remaining 138 departments.

Identification of the effects of female leadership is based on random variation in a team leader's gender, which requires that employees working under female leaders do not systematically differ from those working under male leaders in any other dimension than the characteristics we condition upon. Our rich data set allows us to control for an extensive list of individual, department and firm characteristics. A key assumption for identification is that the assignment to female leaders is as-good-as random once we control for individual characteristics (gender, age, marital status, and tenure), cognitive skills (fluid IQ, empathy, verbal creativity), economic and social preferences (competitiveness, risk tolerance, cooperation, altruism), department characteristics (department size, department female share), job task and firm fixed effects. In the following, we demonstrate the plausibility of this assumption in several ways.

One challenge to identification arises mechanically because female leadership and share of female employees are higher in female-dominated sectors and "female-type jobs". In our data, the share of female employees ranges from 16% in the construction sector to 51% in the finance sector. Mechanically, female leadership is more prevalent in sectors and firms employing a higher share of females. We are also more likely to observe more female leaders and female employees in departments dealing with administrative tasks, such as human resources (HR) departments, in contrast to departments related to production. We address

this mechanical issue by adding firm and job task fixed effects in all our regressions. Since the assignment of employees to female leaders took place within firms, we control for firm fixed effects to account for firm-specific characteristics. We further control for job task (the nature of the job) to account for the variation driven by "female-type jobs".[10]

A more serious challenge to our identification strategy concerns sorting of workers into male and female-led teams. Such a selection problem may arise if (i) workers are allowed to choose their team leaders, (ii) team leaders are allowed to choose their subordinates, or (iii) HR officials assign workers to female-led teams based on certain characteristics, for example by assigning easygoing workers to female leaders. To the extent that these worker-leader matching practices were correlated with the outcomes of interest, our analyses remained correlational.

As mentioned in Section 2 above, to make sure these selection mechanisms are unlikely in our sample of firms, we enlisted firms with highly centralized and transparent hiring and worker allocation policies. Nevertheless, as a first step to address our identification assumption, we also ran an extensive qualitative survey where HR officials were asked to provide a detailed account of their firm's hiring and worker-leader matching policies. While qualitative, these results assure that it is highly unlikely that workers are allocated to team leaders based on anything other than the qualifications required by the job. As shown in Figure 3, only one out of 23 firms declared that gender of leader is somewhat important in worker-leader matching, while the remaining firms declared that it is not important. One firm did not respond to the HR survey. All of our results are robust to excluding the non-response firm, the firm that declared leader gender is somewhat important, or both. Furthermore, all 22 remaining firms declared that the assignment to team leader is "Never" based on gender. When we asked the HR officials to rank the criteria used to assign workers to teams, they ranked qualification as the most important, and gender as the least important criterion.

To formally test whether the assignment of female and male leaders to teams is as-good-as random, we carry out a Monte Carlo simulation following Bietenbeck (2020). Specifically, we test whether the within-firm variation in exposure to female leaders (working under female leaders) observed in our data is consistent with a random allocation process. To do so, we randomly assign each subordinate in our data set randomly to a female or male leader while

[10]This job task variable maps the job task description reported by the employee onto the International Standard Classification of Occupations (ISCO-08) by the International Labour Organization. ISCO-08 classifies all jobs in the world into groups based on their similarity in skill level and skills required for the job.

keeping firm size, number of leaders in a firm, and team size based on the actual data. We then run regressions of working under female leader on firm fixed effects on both our actual data set and the one where leaders are randomly assigned to workers, simulated 1000 times. We plot the residuals obtained from the actual and simulated data sets. If the assumption of as-good-as random assignment to female leaders is true, the distributions of residuals in these two regressions should be similar. Figure 4 plots the distribution of the residuals from 1,000 replications of this exercise, vis-à-vis an equivalent regression using the actual data. The two distributions look very similar, providing further compelling support for our identification assumption.

In addition, we utilize our data to further investigate possible sorting into female-led teams based on observables. Table 4 shows the importance of different worker characteristics on being assigned to female-led teams conditional on the share of females within the department, department size, job task and firm fixed effects. We find no evidence of selection based on many characteristics, including cognitive and socio-cognitive abilities. The only characteristics that turn out to be statistically significant are competitiveness, and risk tolerance. We find that employees who are more competitive or risk averse are more likely to work under a female leader. Although statistically significant, these coefficients bear limited economic significance. In our following analyses, we include these variables as control variables to handle selection on observables.

Finally, to further strengthen the conditionally as-good-as random assignment assumption, we demonstrate that pre-determined individual characteristics are balanced across male and female-led teams. Table 5 reports the mean characteristics for individuals working under male and female leaders. The last column reports whether the differences in pre-determined characteristics, between employees who work under female and male leaders, are statistically significant after controlling for the share of women within the department, department size, job task, and firm fixed effects. We see that none of the characteristics significantly differ across male and female employees who work under female leaders.

5.3 Leader's Gender and Social Support Networks

We first examine the effect of working under a female leader on employee-level network ties. Table 6 reports whether working under a female leader has an effect on receiving support from the leader, separately for female and male subordinates. Female workers are significantly

more likely to receive professional and personal support from their leaders when their leader is a female. They are 12% (15%) more likely to nominate their leaders as professional (personal) support provider when working under female leaders. On the other hand, the gender of the leader does not have an effect on receiving support from the leader for male employees. The differential effects of the female leader on female employees are statistically significant for both professional and personal support.

Our second piece of evidence relates to the effect of leader's gender on inter-gender social ties within the firm. Table 7 presents the effect of working with a female team leader on the percentage of (non-leader) female colleagues nominated as professional and personal support provider. Here, we see clearly that having a female leader increases social interactions between males and females. Both males and females nominate a higher proportion of female colleagues in professional and personal support networks under female leadership. Male and female subordinates have 23 to 27% higher female colleague nominations for professional help category under female leadership. Next, we will examine this at the departmental level looking at the effect of working in a female-led department on male and female homophily levels.

Figure 6 presents the unconditional degree of homophily in departments with no female leaders and at least one female leader, with respect to professional support ties. It is clear from this picture that female leadership breaks male homophily and eliminates the gender difference in homophilic professional and personal interactions. At the same time, female leadership brings females back into the relational structure within the firm. Whereas female homophily is -0.22 (females forming relatively fewer links with other females than with males) in departments without female leaders[11], in departments with at least one female leader, female homophily increases to 0.09 (females slightly more likely to form links with females than with males). Male homophily, on the other hand, drops dramatically from 0.43 to 0.07 when there is at least one female leader in the department. Results are even more striking in personal support networks, as provided in Appendix Figure A.3.

Table 8 presents the conditional results on the effect of the proportion of female leaders in the department on department level male and female homophily separately. Controlling for department size, department female share, and firm fixed effects, as the proportion of female leaders increases, the degree of male homophily declines and that of female homophily

[11]Note that the Coleman homophily index adjusts for the share of females within department and the department size. See Section 3.3 for a formal definition of this index.

increases significantly. This is consistent with our node-level findings that female leaders lead workers (both males and females) to form more professional ties with their female colleagues. Interestingly, there is no statistically significant effect on female homophily in the personal help domain, where the mean female homophily level is positive and comparable to male homophily (see Appendix Table A.2).

These results are consistent with our semi-parametric estimates. Appendix Figure A.4 presents the nonparametric relationship between the proportion of female leaders and male and female homophily, controlling for firm fixed effects. Corroborating our parametric results, female leadership lowers male homophily and increases female homophily in professional support domain. Appendix Figure A.5 presents consistent results for the personal support domain.

5.4 Leader's Gender, Support, and Perceived Workplace Climate

In the previous section, we established that female leadership has a significant impact on the nature of social ties formed within firms. In particular, subordinates working under female leaders form more inter-gender professional and personal ties in the corporation. What does this enhanced network structure imply for workplace climate? In particular, how does female leadership shape workers' i) workplace satisfaction, ii) perception of firms' meritocratic values, iii) collegiality, iv) job satisfaction, v) behavioral norms, and vi) leader professionalism in firms?

First, we consider the effect of leader's gender on perceived workplace climate. While females report lower workplace satisfaction, meritocracy, and behavioral norms within the firm, leader's gender does not seem to have a direct effect on reported workplace climate indicators (see Appendix Table A.3).

Next, we explore the role of 'professionally supportive' leaders. There are two things worth noting. First, we define a professionally supportive leader from the subordinate's perspective. According to this definition, a subordinate is working under a professionally supportive leader if they have nominated their leader for professional support. Second, we interpret leader's nomination in the professional and social support networks as an indicator of receiving support from the leader, rather than simply having an approachable leader, as our network elicitation templates specifically asked for support contacts.

The estimates reported in Table 9 suggest that leaders who are deemed to be profes-

sionally supportive by their subordinates foster a significantly better workplace environment for them on all dimensions. Appendix Table A.4 reveals similar patterns for personally supportive leaders.

A careful inspection of leader's support reveals interesting gender patterns. Table 10 analyses gender differences in workplace climate perceptions by leader's gender under supportive (Panel A) and non-supportive leaders (Panel B). For subordinates who nominate their leaders for professional support, there are no gender differences in reported workplace climate indicators under male and female leaders. This changes, however, when we shift our focus to non-supportive leaders. Female subordinates working under unsupportive female leaders report 0.27 standard deviations lower workplace satisfaction, 0.31 standard deviations lower meritocracy, 0.43 standard deviations lower job satisfaction, and 0.33 standard deviations worse behavioral norms; when compared to their male colleagues working under male leaders. Not being able to receive support in the personal domain leads to lower perceptions of meritocracy and collegiality in the workplace for females working under female leaders (see Appendix Table A.5). In both categories, this gender difference disappears when the leader is deemed to be professionally supportive; see Panel A in Table 10 and Appendix Table A.5.

This result suggests that female subordinates paint a darker picture of their workplace than their male colleagues under non-supportive female leaders. It may be that female workers' expectations from their female leaders are different (higher) from what they expect from male leaders. This is also consistent with the finding that female leaders tend to receive harsher backlash from their subordinates (Chakraborty and Serra, 2019).

We re-estimate the results in Table 10 using an alternative and arguably more objective definition of supportive leadership. We construct a binary indicator of the leader's popularity within the firm based on leader's in-degree centrality. In-degree centrality of a leader indicates the extent to which s/he provides support to his/her subordinates. We label a leader as professionally 'popular' if the leader's in-degree centrality in the professional support network is at least as high as the median in-degree centrality of all the leaders within the firm.[12] The results, presented in Appendix Table A.6, provide compelling evidence for our mechanism: subordinates rate their workplace climate positively to the extent that they

[12]The results are robust to alternative definitions of in-degree centrality that are weighted with respect to the ranking of the nominations, or normalized according to the maximum possible number of links within the firm.

receive support from their leaders. Whether the leader is supportive towards other employees (i.e., popular leader) is irrelevant. This is yet another piece of evidence emphasizing the importance of support provided by female leaders particularly for female employees.

5.5 Long-term Implications for Employee Separation and Promotions

A company's separation rate is an important real indicator of its workplace climate. We were granted access to individual level data on layoffs and quits that happened between July 1, 2021 and November 30, 2021.[13] We also obtained individual level data on promotions for the same time period. Our goal here is to test whether social support or leader gender translates into tangible support such as a promotion, or is reflected in separation rates.

Table 11 relates leader's gender and professional support from the leader to employee separation and promotions using a subsample of the data.[14] We note two important results. First, females working under female leaders are less likely to quit their jobs, and have better promotion prospects, compared to males working under male leaders. These results are consistent with the women helping women hypothesis à la Kunze and Miller, 2017. Second, consistent with the results from the previous subsection, we observe that employees receiving professional support from their leaders are more likely to be promoted. This result further emphasizes the importance of supportive leaders.

6 Conclusion

Overall, our results suggest that female leaders are transforming corporate culture to a more inclusive one, where (i) male homophily is eliminated, (ii) female subordinates have more access to professional and personal support, and (iii) both males and females establish more links with female colleagues that are not leaders.

[13]The participating firms only granted access to individual level separation data in 2021. The time window has been selected to exclude the firing-ban that had been passed by the Turkish government in response to the COVID-19 pandemic. This ban was legislated on April 16, 2020 and lasted until June 30, 2021, ruling out any firings in this period.

[14]In this analysis, we use a subsample of the firms for the following reasons: (i) 4 firms have dropped out of the project at the onset of COVID-19, (ii) In Fall 2020, we implemented a randomized intervention on half of the remaining 20 firms, which effectively reduced quits. Hence we run the analysis on the employees of 10 control companies. Almost all of the results presented in the preceding sections hold also for the subsample of control firms.

We further show that professionally supportive leadership nurtures a more favorable workplace climate. However, the relationship between female workers and their female leaders contain some puzzling elements. It appears that female workers' expectations from female leaders may be different. While it may be acceptable for them not to receive much help from male leaders, the same behavior from female leaders seems to cause significant negative sentiments for the workplace. We also document that female leaders decrease the quits of female employees while increasing their promotion rates.

In conclusion, while promoting female leadership in corporations is undoubtedly a crucial step towards achieving gender equality, it is not sufficient on its own to ensure a healthy workplace environment for female employees. Our research has highlighted the importance of understanding the factors that contribute to an ideal female working environment, as well as the role that leaders play in supporting their subordinates, particularly women. Therefore, we need to focus not only on encouraging women to take up leadership roles but also on providing them with the necessary support to thrive in those roles. Only then can we create a truly equitable and inclusive workplace culture that benefits everyone, regardless of their gender.

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7 Tables

Table 1: Individual Level Characteristics

Panel I: Individual Characteristics

	N	Males	Females	Difference (F-M)	P-value of Difference
Age	2913	35.777	33.836	-1.960	0.000***
Married	2913	0.547	0.427	-0.104	0.004***
Tenure	2913	6.721	5.885	-0.475	0.178
Fluid Cognitive Ability	2913	0.035	-0.071	-0.049	0.252
Cognitive Empathy	2913	-0.100	0.189	0.290	0.000***
Verbal Creativity	2913	-0.001	-0.015	0.067	0.003***

Panel II: Incentivized Outcomes

	N	Males	Females	Difference (F-M)	P-value of Difference
Risk Tolerance	2913	0.113	-0.204	-0.310	0.000***
Competitiveness	2913	0.575	0.397	-0.167	0.000***
Cooperation	2913	0.075	-0.125	-0.195	0.000***
Altruism	2913	-0.044	0.066	0.066	0.109

Panel III: Survey Outcomes

	N	Males	Females	Difference (F-M)	P-value of Difference
Job Satisfaction	2005	0.100	-0.136	-0.167	0.002***
Workplace Satisfaction	1916	0.103	-0.148	-0.230	0.005***
Collegiality	2044	0.044	-0.055	-0.102	0.103
Behavioral Norms	1978	0.025	-0.043	-0.110	0.058*
Leader Professionalism	2006	0.030	-0.026	-0.081	0.213
Meritocracy	1858	0.027	-0.067	-0.089	0.244

Panel IV: Leader Variables

	N	Males	Females	Difference (F-M)	P-value of Difference
Leader	2913	0.165	0.129	-0.043	0.001***
Under Female Leader	2083	0.208	0.397	0.117	0.001***
Professional Support from Leader	2030	0.594	0.573	-0.016	0.519
Personal Help from Leader	2030	0.493	0.384	-0.120	0.001***

Panel V: Network Variables

	N	Males	Females	Difference (F-M)	P-value of Difference
In-degree, Professional Support	2913	0.010	0.008	-0.001	0.035**
In-degree, Personal Help	2913	0.007	0.008	0.001	0.061*
Out-degree, Professional Support	2913	0.011	0.010	-0.000	0.273
Out-degree, Personal Help	2913	0.010	0.009	0.000	0.229
%Female Noms, Professional Support	2173	0.198	0.437	0.159	0.000***
%Female Noms, Personal Help	2045	0.179	0.539	0.302	0.000***

Reported statistics under *Females* and *Males* headings use the female and male subsamples of the full sample. Cognitive test scores, incentivized outcomes other than competitiveness, and survey outcomes are standardized. *Difference (F-M)* column reports the coefficient of female dummy in regressions of variables in first column on female dummy and firm fixed effects. Standard errors are clustered at firm level in these estimations. *P-value* column reports p-values for the estimates in the previous column. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table 2: Department Level Characteristics

	Mean	SD	Min	Max	N
Log Department Size	2.713	0.829	0.000	5.198	256
Share of Females	0.362	0.249	0.000	1.000	256
Proportion of Female Leaders	0.274	0.337	0.000	1.000	240
% Fem-Fem Professional Links	0.216	0.276	0.000	1.000	231
% Fem-Male Professional Links	0.189	0.187	0.000	1.000	231
% Male-Male Professional Links	0.446	0.348	0.000	1.000	231
% Male-Fem Professional Links	0.149	0.152	0.000	1.000	231
% Fem-Fem Personal Links	0.272	0.311	0.000	1.000	226
% Fem-Male Personal Links	0.143	0.164	0.000	1.000	226
% Male-Male Personal Links	0.441	0.356	0.000	1.000	226
% Male-Fem Personal Links	0.144	0.166	0.000	1.000	226
Coleman Male Homophily-Professional	0.214	0.560	-1.000	1.000	195
Coleman Female Homophily-Professional	-0.017	0.590	-1.000	1.000	168
Coleman Male Homophily-Personal	0.244	0.622	-1.000	1.000	193
Coleman Female Homophily-Personal	0.196	0.639	-1.000	1.000	170

Reported statistics use the full sample and present department level characteristics. *Fem-Fem Professional, Fem-Male Professional, Male-Male Professional, Male-Male Professional, Male-Fem Professional, Fem-Fem Personal, Fem-Male Personal, Male-Male Personal, Male-Fem Personal Links* indicate the number of intra- and inter-gender links in the professional and personal support networks. *Coleman Male Homophily-Professional, Coleman Female Homophily-Professional, Coleman Male Homophily-Personal, Coleman Female Homophily-Personal* indicate the Coleman homophily index for each gender in the professional and personal support networks.

Table 3: Characteristics of a Corporate Leader

	Holding a Leadership Position			
	(1)	(2)	(3)	(4)
Female	-0.050**	-0.027	-0.021	-0.013
	(0.021)	(0.017)	(0.017)	(0.016)
Log Department Size	0.005	0.005	0.008	0.009
	(0.009)	(0.009)	(0.009)	(0.009)
Department Female Share	0.072	0.084	0.076	0.073
	(0.070)	(0.067)	(0.067)	(0.068)
Age		0.010***	0.011***	0.011***
		(0.002)	(0.002)	(0.002)
Married		0.025**	0.030***	0.031***
		(0.011)	(0.010)	(0.010)
Tenure		0.002	0.003	0.003
		(0.002)	(0.002)	(0.002)
Fluid Cognitive Ability			0.061***	0.055***
			(0.011)	(0.010)
Cognitive Empathy			-0.003	-0.003
			(0.009)	(0.008)
Verbal Creativity			0.018*	0.014
			(0.009)	(0.009)
Risk Tolerance				0.008
				(0.009)
Competitiveness				0.037**
				(0.015)
Cooperation				0.005
				(0.011)
Altruism				0.001***
				(0.000)
N	2083	2083	2083	2083
R^2	0.083	0.134	0.161	0.170

Reported results are obtained from ordinary least squares (OLS) regressions on the full sample. Dependent variable is a binary indicator of being a leader.. All regressions control for job task, share of females in the department, log department size and firm fixed effects. Standard errors are clustered at firm level. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table 4: Selection into Female-led Team

	(1)	(2)	(3)
Female	-0.004	-0.000	0.004
	(0.026)	(0.029)	(0.029)
Age	-0.003	-0.002	-0.002
	(0.002)	(0.002)	(0.002)
Married	-0.001	0.007	0.010
	(0.029)	(0.031)	(0.031)
Tenure	0.000	-0.000	-0.000
	(0.002)	(0.002)	(0.002)
Fluid Cognitive Ability		0.000	-0.001
		(0.009)	(0.008)
Cognitive Empathy		0.013	0.012
		(0.013)	(0.013)
Verbal Creativity		0.008	0.005
		(0.014)	(0.014)
Competitiveness			0.040***
			(0.014)
Risk Tolerance			-0.016*
			(0.009)
Cooperation			-0.002
			(0.010)
Altruism			-0.003
			(0.008)
N	1987	1810	1789
R-Squared	0.213	0.219	0.225

Reported results are obtained from ordinary least squares (OLS) regressions on the subordinate sample. Dependent variable is a binary indicator of being assigned to a female leader. All regressions control for job task, share of females in the department, log department size and firm fixed effects. Standard errors clustered at firm level. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table 5: Balance Tests with Individual Characteristics

	N	Under Male Leader Mean	Under Female Leader Mean	Difference (F-M)	P-value of Difference
Female	2001	0.355	0.563	0.001	0.973
Age	2001	34.918	33.451	-0.756	0.151
Married	2001	0.641	0.545	-0.016	0.669
Fluid Cognitive Ability	1820	-0.121	-0.139	0.049	0.297
Cognitive Empathy	1825	-0.109	0.037	0.082	0.194
Verbal Creativity	1825	-0.137	-0.178	0.056	0.293

Reported statistics use the subordinate sample. *Difference (F-M)* column reports the coefficient of working under female leader in regressions of variables in first column on working under female leader. All regressions control for share of female within department, log department size, job task, and firm fixed effects. Standard errors clustered at firm level. *P-value of Difference* column reports p-values for the estimates in the previous column. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table 6: Effects of Having a Female Leader on Receiving Support from Leader

	Professional Support		Personal Support	
	Females	Males	Females	Males
Under Female Leader	0.118***	-0.047	0.154***	-0.014
	(0.040)	(0.054)	(0.031)	(0.039)
Wild Bootstrap P-value	0.010	0.394	0.000	0.750
Sharpened q-value	0.004	0.126	0.001	0.222
N	674	1024	674	1024
P-Value (Male=Female)	0.003		0.000	

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a binary indicator of nominating leader in the network. *Females* columns use the female subsample. *Male* columns use the male subsample. *P-Value (Male=Female)* rows test whether a gender gap exists in receiving support from female leaders. All regression controls for age, marital status, tenure, fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, share of females within department, log department size, job task and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided. *Sharpened q-values*, calculated based on Anderson (2008), are provided for multiple hypothesis test correction. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table 7: Effects of Having a Female Leader on Receiving Female Colleague Support

	Professional Support		Personal Support	
	Females	Males	Females	Males
Under Female Leader	0.274***	0.230***	0.205***	0.248***
	(0.028)	(0.037)	(0.030)	(0.038)
Wild Bootstrap P-value	0.000	0.000	0.000	0.000
Sharpened q-value	0.001	0.001	0.001	0.001
N	664	1007	643	944
P-Value (Male=Female)	0.303		0.434	

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is the proportion of females nominated in the network. *Females* columns use the female subsample. *Male* columns use the male subsample. *P-Value (Male=Female)* rows test whether a gender gap exists in receiving support from female leaders. All regressions control for age, marital status, tenure, fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, share of females within department, department size, job task and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided. *Sharpened q-values*, calculated based on Anderson (2008), are provided for multiple hypothesis test correction. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table 8: Leader's Gender and Homophily in the Department

	Male Homophily		Female Homophily	
	(1)	(2)	(3)	(4)
Proportion of Female Leaders	-0.360**	-0.413***	0.457**	0.437**
	(0.141)	(0.127)	(0.181)	(0.186)
Wild Bootstrap P-value	0.005	0.004	0.028	0.043
Sharpened q-value	0.020	0.015	0.020	0.021
Outcome Mean	0.214	0.214	-0.017	-0.017
N	195	189	166	160
R^2	0.301	0.336	0.173	0.230
Covariates	No	Yes	No	Yes

Reported results are obtained from ordinary least squares (OLS) regressions at department level. Dependent variable is *Coleman's homophily index*. All regressions control for share of female in department, firm fixed effects and log department size. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided. *Sharpened q-values*, calculated based on Anderson (2008), are provided for multiple hypothesis test correction. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table 9: Leader's Gender, Professional Support, and Reported Workplace Climate

	W-Satisfaction	Meritocracy	Collegiality	Job Satisfaction	Behavioral Norms	Leader Prof.
Female Leader	-0.140	-0.066	0.054	0.003	-0.058	0.017
	(0.097)	(0.087)	(0.088)	(0.094)	(0.104)	(0.102)
Professionally Supportive Leader	0.313***	0.283***	0.293***	0.229**	0.228***	0.553***
	(0.074)	(0.084)	(0.071)	(0.081)	(0.074)	(0.073)
Female Leader X Professional Support	0.017	-0.059	-0.027	0.040	0.017	-0.109
	(0.148)	(0.163)	(0.155)	(0.179)	(0.115)	(0.147)
Wild P-value (Prof. Supportive Leader)	0.001	0.005	0.001	0.019	0.004	0.000
Sharpened q-value (Prof. Supportive Leader)	0.001	0.003	0.001	0.005	0.004	0.001
N	1449	1407	1561	1515	1510	1532
R^2	0.151	0.131	0.093	0.128	0.078	0.139

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a workplace climate item as indicated. All regression controls for gender, age, marital status, tenure, fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, share of females within department, log department size, job task and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided for the coefficient of professionally supportive leader. *Sharpened q-values*, calculated based on Anderson (2008), are provided for multiple hypothesis test correction. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table 10: Leader's Gender, Professional Support, and Reported Workplace Climate

Panel I: Under Supportive Leadership

	W-Satisfaction	Meritocracy	Collegiality	Job Satisfaction	Behavioral Norms	Leader Prof.
Female	-0.189**	-0.023	-0.069	-0.133	-0.194*	-0.054
	(0.084)	(0.080)	(0.074)	(0.090)	(0.105)	(0.073)
Female Leader	-0.099	-0.108	-0.012	-0.020	-0.132	-0.197
	(0.140)	(0.105)	(0.170)	(0.160)	(0.128)	(0.143)
Female X Female Leader	-0.105	-0.113	0.005	0.132	0.146	0.160
	(0.146)	(0.102)	(0.150)	(0.129)	(0.166)	(0.129)
Wild P-value (FemaleXFemale Leader)	0.474	0.282	0.963	0.282	0.388	0.230
Sharpened q-value (FemaleXFemale Leader)	1.000	1.000	1.000	1.000	1.000	1.000
N	905	883	974	941	942	963
R^2	0.163	0.159	0.090	0.143	0.085	0.098

Panel II: Under Non-supportive Leadership

Female	-0.138	0.062	-0.079	0.071	0.053	-0.042
	(0.141)	(0.110)	(0.129)	(0.137)	(0.094)	(0.162)
Female Leader	-0.042	0.079	0.164	0.187	0.080	0.101
	(0.081)	(0.076)	(0.137)	(0.146)	(0.129)	(0.116)
Female X Female Leader	-0.274**	-0.308**	-0.177	-0.432***	-0.331**	-0.103
	(0.125)	(0.141)	(0.170)	(0.144)	(0.159)	(0.199)
Wild P-value (FemaleXFemale Leader)	0.047	0.064	0.319	0.010	0.066	0.630
Sharpened q-value (FemaleXFemale Leader)	0.066	0.066	0.142	0.041	0.066	0.256
N	544	524	587	574	568	569
R^2	0.151	0.125	0.107	0.163	0.105	0.133

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a workplace climate item as indicated. All regression controls for gender, age, marital status, tenure, fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, share of females within department, log department size, job task and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided for the interaction coefficient. *Sharpened q-values*, calculated based on Anderson (2008), are provided for multiple hypothesis test correction. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

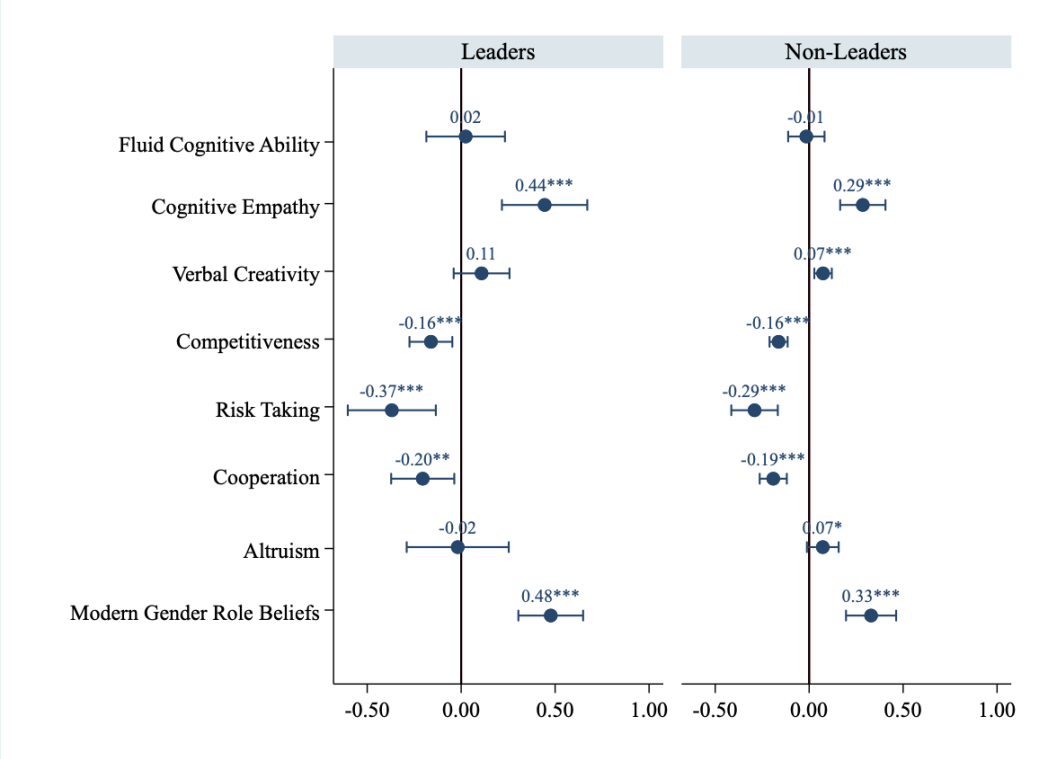
Table 11: Leader's Gender, Professional Support and Employee Separation (Layoffs and Quits) and Promotions

	Layoffs		Quits		Promotions	
	(1)	(2)	(3)	(4)	(5)	(6)
Under Female Leader	0.022	0.001	0.034	0.012	-0.028	0.020
	(0.020)	(0.006)	(0.022)	(0.023)	(0.026)	(0.014)
Female	0.007		0.016		-0.043	
	(0.006)		(0.035)		(0.032)	
Under Female Leader × Female	-0.035		-0.116**		0.054*	
	(0.025)		(0.040)		(0.026)	
Prof. Supportive Leader		0.003		0.017		0.049**
		(0.005)		(0.037)		(0.018)
Under Female Leader × Prof. Supportive Leader		0.008		-0.057		-0.042
		(0.005)		(0.035)		(0.047)
Wild P-value (interaction)	0.208	0.225	0.025	0.164	0.099	0.392
N	513	497	513	497	513	497

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a binary indicator of layoff, quit, or promotion. All regressions control for job task, share of females in the department, log department size and firm fixed effects. Standard errors are clustered at firm level. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

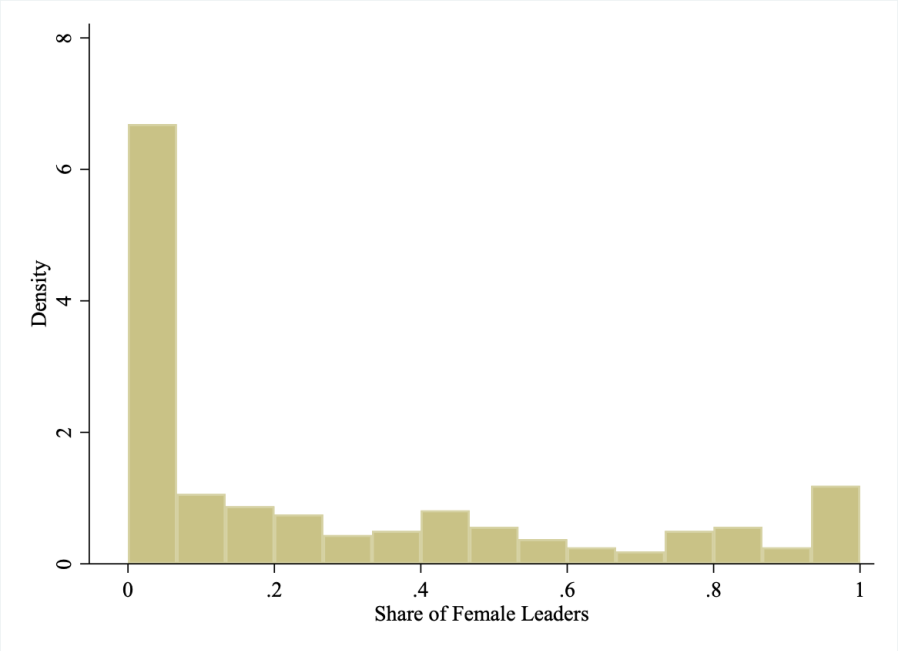
8 Figures

Figure 1: Gender Differences in Cognitive Skills and Economic Preferences of Leaders and Non-Leaders



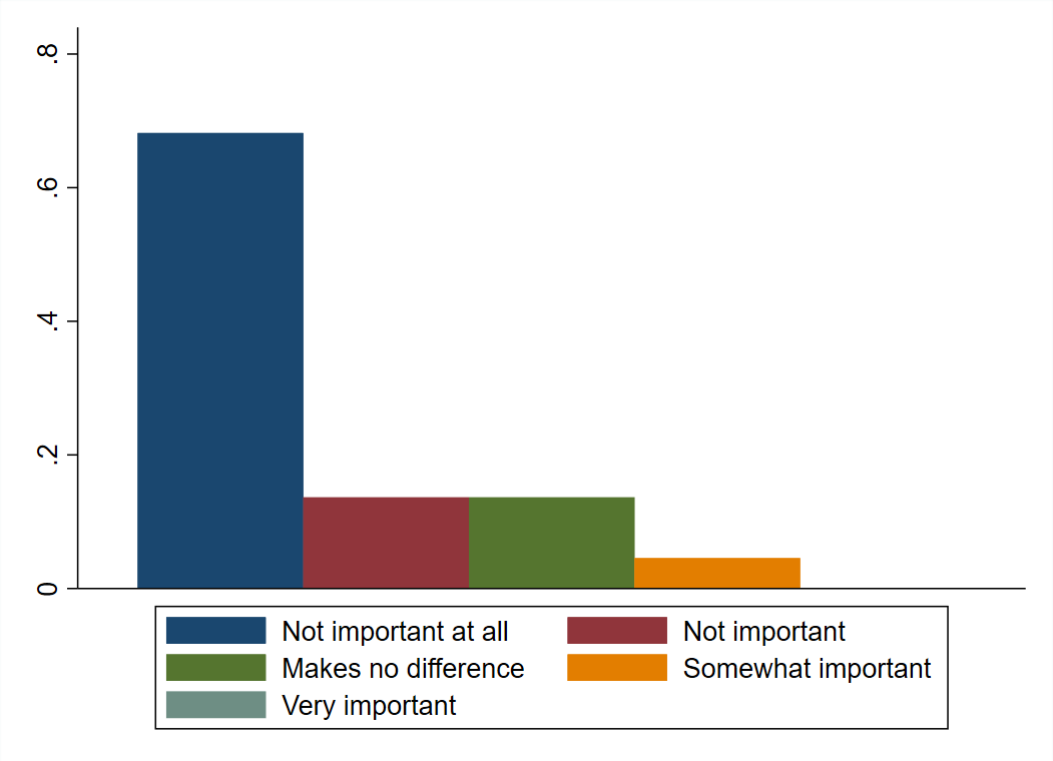
The figure plots the estimated gender differences (females-males) for corporate team leaders in fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, and holding modern gender role beliefs. *Leader* heading indicates the leader sample, *Non-Leaders* heading indicates the subordinate sample. Coefficients are obtained from ordinary least squares (OLS) estimations by regressing the indicated variable in y-axis on a female dummy, and controlling for firm fixed effects. 95% confidence intervals are based on standard errors clustered at the firm level. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Figure 2: Distribution of Female Leadership at Department Level



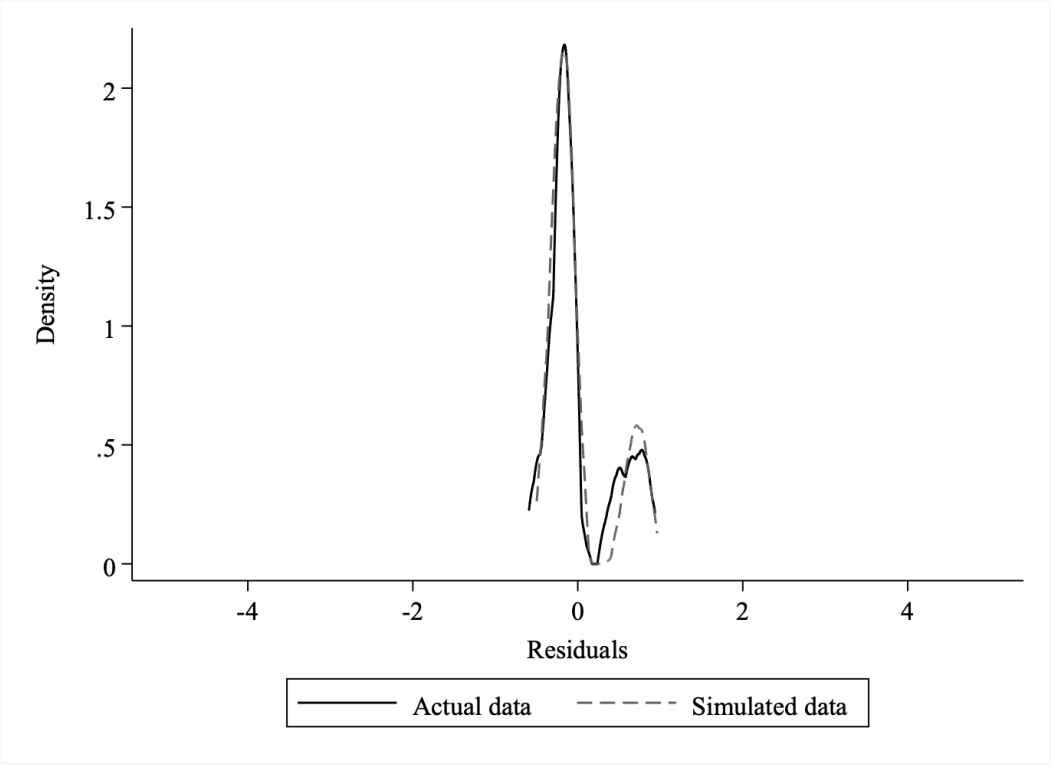
The figure plots the distribution of female leaders at department level. Y-axis is the number of departments. X-axis is the share of female leaders at department level. Bin width is 0.1.

Figure 3: Importance of Prospective Team Leader's Gender



The figure plots the distribution of responses from HR department of recruited companies to the question of "How important is the gender of prospective team leader in assessing applicants during the recruitment process in your company?" The response categories are *Not important at all, Not important, Makes no difference, Somewhat important, Very important.* No firm indicated that the leader's gender is "Very important". Numbers on top of the bars indicate the firm count for each response category.

Figure 4: Actual and Simulated Variation in Working Under Female Leader



Actual and simulated variation in exposure to female leaders. This figure displays the kernel density plots of residuals from regressions of exposure to female leaders conditional on firm fixed effects. The solid line corresponds to residuals from a single regression using the actual data, whereas the dashed line corresponds to residuals from 1,000 regressions using simulated data in which employees are randomly assigned to teams within departments infirms. Density calculations are based on an Epanechnikov kernel with the optimal bandwidth of 0.083 in the actual data.

Figure 5: Illustration of Coleman Homophily at Department Level: Professional Help

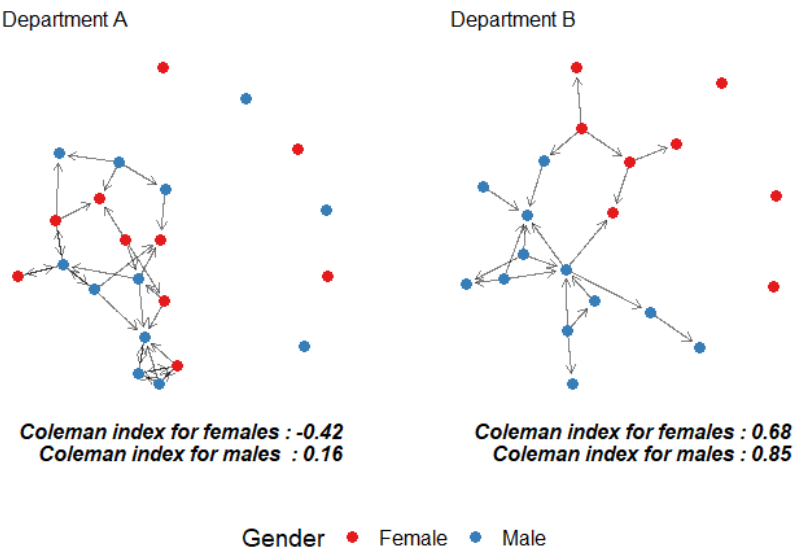
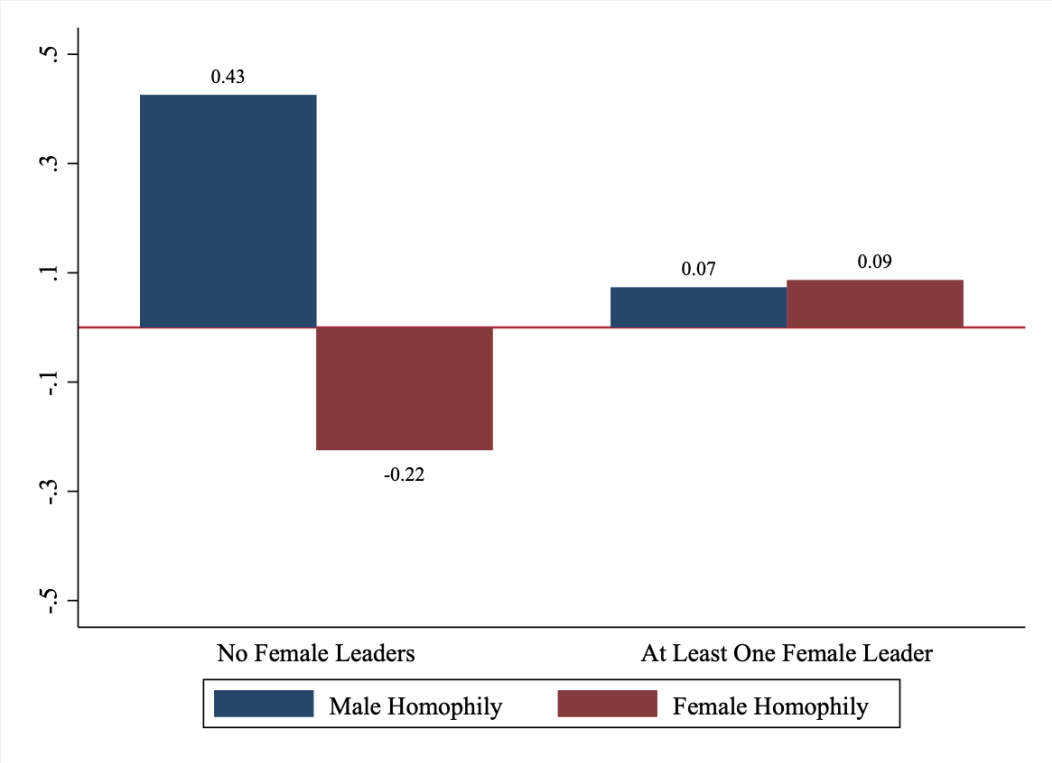


Figure 6: Presence of Female Leaders and Homophily: Professional Support



The figure plots the mean female and male Coleman homophily index at department level separately for departments with no female leaders and at least one female leader. Numbers on top of the bars indicate the mean Coleman homophily index.

Online Appendix: Not for Publication

A Additional Tables and Figures

Table A.1: Leader's Gender and Professional Links in the Department

	Fem-Fem	Fem-Male	Male-Male	Male-Fem
Proportion of Female Leaders	0.115	-0.083	-0.139*	0.107**
	(0.079)	(0.052)	(0.069)	(0.049)
Wild Bootstrap P-value	0.158	0.099	0.052	0.015
N	227	227	227	227
R^2	0.645	0.179	0.655	0.262

Reported results are obtained from ordinary least squares (OLS) regressions at department level. Dependent variable is the proportion of inter- and intra-gender links within the department. All regressions control for log department size, the share of females in the department, and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table A.2: Leader's Gender and Homophily in the Department: Personal Support

	Male Homophily		Female Homophily	
	(1)	(2)	(3)	(4)
Proportion of Female Leaders	-0.554***	-0.577***	0.281	0.276
	(0.144)	(0.134)	(0.167)	(0.165)
Wild Bootstrap P-value	0.000	0.000	0.114	0.138
Outcome Mean	0.244	0.244	0.196	0.196
N	192	187	168	162
R^2	0.303	0.354	0.322	0.358
Covariates	No	Yes	No	Yes

Reported results are obtained from ordinary least squares (OLS) regressions at department level. Dependent variable is *Coleman's homophily index*.All regressions control for log department size, the share of females in the department, and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table A.3: Leader's Gender and Reported Workplace Climate

	W-Satisfaction	Meritocracy	Collegiality	Job Satisfaction	Behavioral Norms	Leader Prof.
Under Female Leader	-0.058	-0.015	0.024	0.052	-0.051	-0.118
	(0.090)	(0.074)	(0.114)	(0.071)	(0.107)	(0.115)
Female	-0.168**	-0.004	-0.106	-0.055	-0.116	-0.087
	(0.071)	(0.061)	(0.069)	(0.067)	(0.073)	(0.078)
Under Female Leader × Female	-0.139	-0.166**	0.008	-0.072	0.021	0.141
	(0.106)	(0.075)	(0.114)	(0.078)	(0.133)	(0.122)
Wild P-value (Female Leader)	0.538	0.823	0.850	0.478	0.656	0.347
N	1505	1462	1609	1577	1555	1582
Male leader (Male=Female)	0.028	0.950	0.141	0.421	0.126	0.275
Female leader (Male=Female)	0.006	0.029	0.331	0.107	0.333	0.514

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a workplace climate item as indicated. *Male leader (Male=Female)* rows test whether a gender gap exists in perceived climate under male leaders. *Female leader (Male=Female)* rows test whether a gender gap exists in perceived climate under female leaders. All regression controls for age, marital status, tenure, fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, share of females within department, log department size, job task and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided for the coefficient of female leader. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table A.4: Effect of Leader's Gender and Support on Reported Workplace Climate: Personal Support

	W-Satisfaction	Meritocracy	Collegiality	Prescriptive Norms	Behavioral Norms	Leader Prof.
Female Leader	-0.098	-0.006	0.069	-0.149	-0.084	0.003
	(0.079)	(0.056)	(0.099)	(0.127)	(0.098)	(0.101)
Personally Supportive Leader	0.299***	0.326***	0.426***	0.309***	0.250***	0.611***
	(0.072)	(0.059)	(0.053)	(0.070)	(0.051)	(0.064)
Female Leader X Personal Support	-0.099	-0.234**	-0.120	0.068	0.040	-0.176*
	(0.101)	(0.095)	(0.116)	(0.123)	(0.092)	(0.101)
Wild P-value (Pers. Supportive Leader)	0.001	0.000	0.000	0.001	0.000	0.000
N	1449	1407	1561	1508	1510	1532
R^2	0.146	0.133	0.111	0.096	0.082	0.152

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a workplace climate item as indicated. All regression controls for gender, age, marital status, tenure, fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, share of females within department, log department size, job task and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided for the coefficient of personally supportive leader. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table A.5: Leader's Gender, Personal Support, and Reported Workplace Climate

Panel I: Under Supportive Leadership						
	W-Satisfaction	Meritocracy	Collegiality	Job Satisfaction	Behavioral Norms	Leader Prof.
Female	-0.150	-0.004	-0.098	0.068	-0.144	0.083
	(0.088)	(0.098)	(0.110)	(0.097)	(0.107)	(0.083)
Female Leader	-0.102	-0.268**	-0.083	-0.003	-0.024	-0.246*
	(0.101)	(0.115)	(0.151)	(0.154)	(0.140)	(0.120)
Female X Female Leader	-0.168	0.004	0.186	-0.084	0.132	0.140
	(0.134)	(0.164)	(0.207)	(0.156)	(0.185)	(0.187)
Wild P-value (FemaleXFemale Leader)	0.197	0.982	0.403	0.569	0.510	0.505
N	687	671	737	715	710	733
R^2	0.171	0.165	0.085	0.164	0.073	0.105
Panel II: Under Non-Supportive Leadership						
Female	-0.104	0.123	0.023	-0.061	-0.008	0.018
	(0.107)	(0.108)	(0.096)	(0.102)	(0.095)	(0.100)
Female Leader	-0.013	0.252	0.210*	0.126	-0.003	0.061
	(0.127)	(0.160)	(0.103)	(0.074)	(0.118)	(0.091)
Female X Female Leader	-0.209	-0.482**	-0.289**	-0.161	-0.208	-0.102
	(0.176)	(0.204)	(0.133)	(0.118)	(0.159)	(0.103)
Wild P-value (FemaleXFemale Leader)	0.264	0.061	0.041	0.193	0.208	0.280
N	762	736	824	800	800	799
R^2	0.120	0.112	0.090	0.116	0.095	0.111

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a workplace climate item as indicated. All regression controls for gender, age, marital status, tenure, fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, share of females within department, log department size, job task and firm fixed effects. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided for the interaction coefficient. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table A.6: Leader's Gender, Professional Popularity, and Reported Workplace Climate

	W-Satisfaction	Meritocracy	Collegiality	Job Satisfaction	Behavioral Norms	Leader Prof.
Panel I: Under Popular Leader						
Female	-0.147*	-0.010	-0.107	-0.056	-0.174*	-0.090
	(0.073)	(0.073)	(0.071)	(0.074)	(0.092)	(0.081)
Female Leader	-0.015	-0.026	0.046	0.124	-0.087	-0.139
	(0.105)	(0.095)	(0.139)	(0.093)	(0.137)	(0.131)
Female X Female Leader	-0.170	-0.168*	0.004	-0.099	0.070	0.156
	(0.146)	(0.093)	(0.135)	(0.108)	(0.155)	(0.136)
Wild P-value (FemaleXFemale Leader)	0.294	0.089	0.977	0.391	0.661	0.317
N	1133	1105	1214	1187	1172	1199
R^2	0.151	0.130	0.087	0.130	0.072	0.090
Panel II: Under Unpopular Leader						
Female	-0.192	0.049	-0.057	-0.045	0.026	-0.112
	(0.142)	(0.134)	(0.140)	(0.119)	(0.118)	(0.137)
Female Leader	-0.149	0.053	-0.122	-0.158	0.061	-0.105
	(0.138)	(0.222)	(0.232)	(0.220)	(0.198)	(0.222)
Female X Female Leader	-0.071	-0.182	-0.038	-0.107	-0.131	0.176
	(0.187)	(0.287)	(0.239)	(0.279)	(0.273)	(0.302)
Wild P-value (FemaleXFemale Leader)	0.668	0.528	0.883	0.711	0.627	0.576
N	372	357	395	390	383	383
R^2	0.167	0.212	0.202	0.154	0.177	0.176

Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a workplace climate item as indicated. All regression controls for gender, age, marital status, tenure, fluid cognitive ability, cognitive empathy, verbal creativity, risk taking, competitiveness, cooperation, altruism, share of females within department, log department size, job task and firm fixed effects. Professional popularity of the leader is a binary variable indicating whether the leader's firm-level in-degree is higher than the median leader in-degree within the firm. Standard errors are clustered at firm level, and wild bootstrapped p-values, adjusted for the small sample, are provided for the interaction coefficient. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table A.7: Gender Differences in Promotions

Panel I: Until June 30, 2021

	(1)	(2)	(3)	(4)
Female	-0.017	-0.024	-0.027	-0.030
	(0.024)	(0.024)	(0.026)	(0.027)
Log Department Size	-0.011	-0.012	-0.014	-0.014
	(0.022)	(0.021)	(0.023)	(0.024)
Department Female Share	-0.017	-0.020	-0.025	-0.024
	(0.048)	(0.048)	(0.057)	(0.062)
Age		-0.004***	-0.003**	-0.003**
		(0.001)	(0.002)	(0.001)
Married		-0.003	0.002	0.004
		(0.014)	(0.014)	(0.014)
Tenure		-0.000	0.000	0.000
		(0.001)	(0.002)	(0.002)
Fluid Cognitive Ability			0.020**	0.020**
			(0.009)	(0.009)
Cognitive Empathy			0.010	0.010
			(0.008)	(0.009)
Verbal Creativity			0.002	0.001
			(0.012)	(0.013)
Risk Tolerance				0.004
				(0.011)
Competitiveness				-0.002
				(0.025)
Cooperation				-0.010
				(0.010)
Altruism				0.000
				(0.000)
N	1354	1354	1240	1227
R^2	0.085	0.095	0.100	0.103

Panel II: Until November 30, 2021

Female	-0.020	-0.025	-0.030*	-0.031
	(0.014)	(0.015)	(0.018)	(0.019)
Log Department Size	-0.009	-0.010	-0.011	-0.013
	(0.009)	(0.010)	(0.011)	(0.011)
Department Female Share	0.101	0.100	0.110	0.107
	(0.066)	(0.066)	(0.071)	(0.071)
Age		-0.004**	-0.003**	-0.003**
		(0.002)	(0.002)	(0.001)
Married		0.005	0.006	0.007
		(0.013)	(0.014)	(0.015)
Tenure		0.000	0.001	0.001
		(0.001)	(0.001)	(0.001)
Fluid Cognitive Ability			0.006	0.005
			(0.008)	(0.008)
Cognitive Empathy			-0.002	-0.001
			(0.008)	(0.007)
Verbal Creativity			0.012	0.011
			(0.009)	(0.009)
Risk Tolerance				-0.007
				(0.006)
Competitiveness				0.010
				(0.009)
Cooperation				0.002
				(0.004)
Altruism				0.000
				(0.000)
N	1284	1284	1174	1161
R^2	0.169	0.179	0.165	0.163

Reported results are obtained from ordinary least squares (OLS) regressions at department level. Dependent variables are the share of layoffs and quits within the department. All regressions control for log department size, female share in department, job task and firm fixed effects. Standard errors are clustered at firm level. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Table A.8: Homophily and Layoffs and Quits in the Department, sessionid level

Panel I: Male Homophily

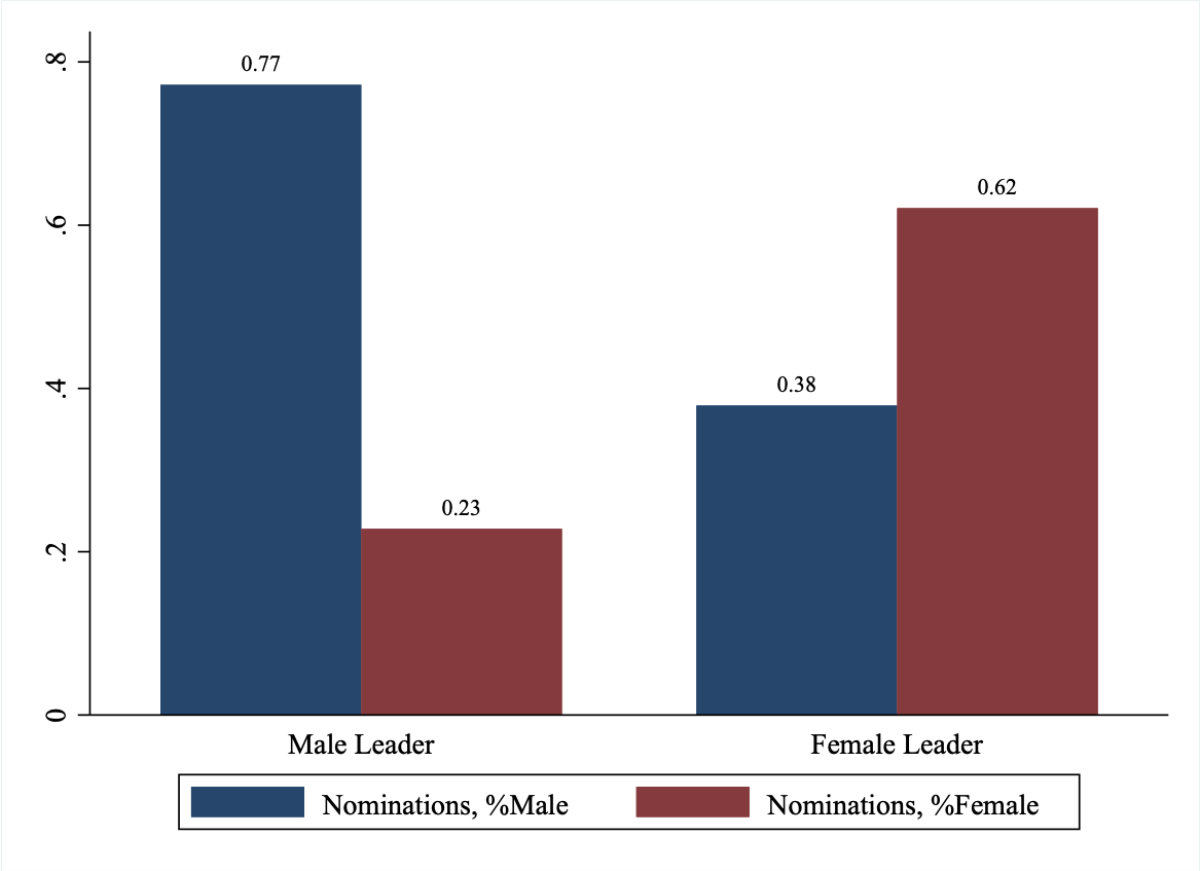
	Layoffs			Quits		
	All	Female	Male	All	Female	Male
Male Homophily	0.020	-0.016	0.032	0.025	0.115*	0.017
	(0.031)	(0.017)	(0.044)	(0.044)	(0.054)	(0.043)
Wild Bootstrap P-value	0.601	0.366	0.621	0.644	0.060	0.751
Outcome Mean	0.013	0.011	0.015	0.072	0.084	0.241
N	46	44	46	46	44	46
R^2	0.524	0.632	0.454	0.477	0.420	0.543

Panel II: Female Homophily

Female Homophily	0.004	-0.014	0.009	-0.017	-0.107*	0.011
	(0.016)	(0.010)	(0.022)	(0.038)	(0.057)	(0.041)
Wild Bootstrap P-value	0.873	0.199	0.786	0.661	0.105	0.732
Outcome Mean	0.013	0.011	0.015	0.072	0.084	0.076
N	40	40	40	40	40	40
R^2	0.525	0.647	0.437	0.497	0.563	0.582

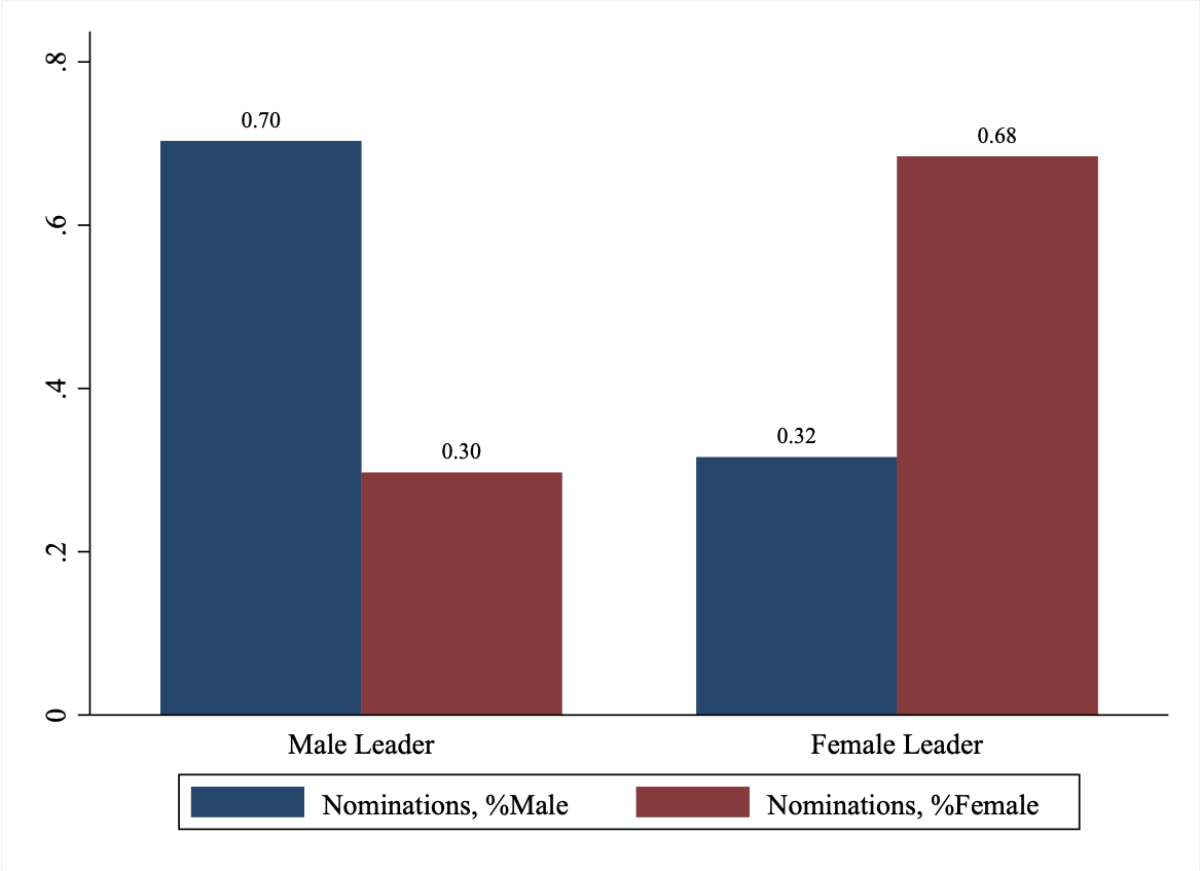
Reported results are obtained from ordinary least squares (OLS) regressions for the subordinate sample. Dependent variable is a binary indicator of being promoted in the indicated time period. All regressions control for job task and firm fixed effects. Standard errors are clustered at firm level. Asterisks indicate that coefficient is statistically significant at the 1% ***, 5% **, and 10% * levels.

Figure A.1: Leader Gender and Nominations: Professional Support



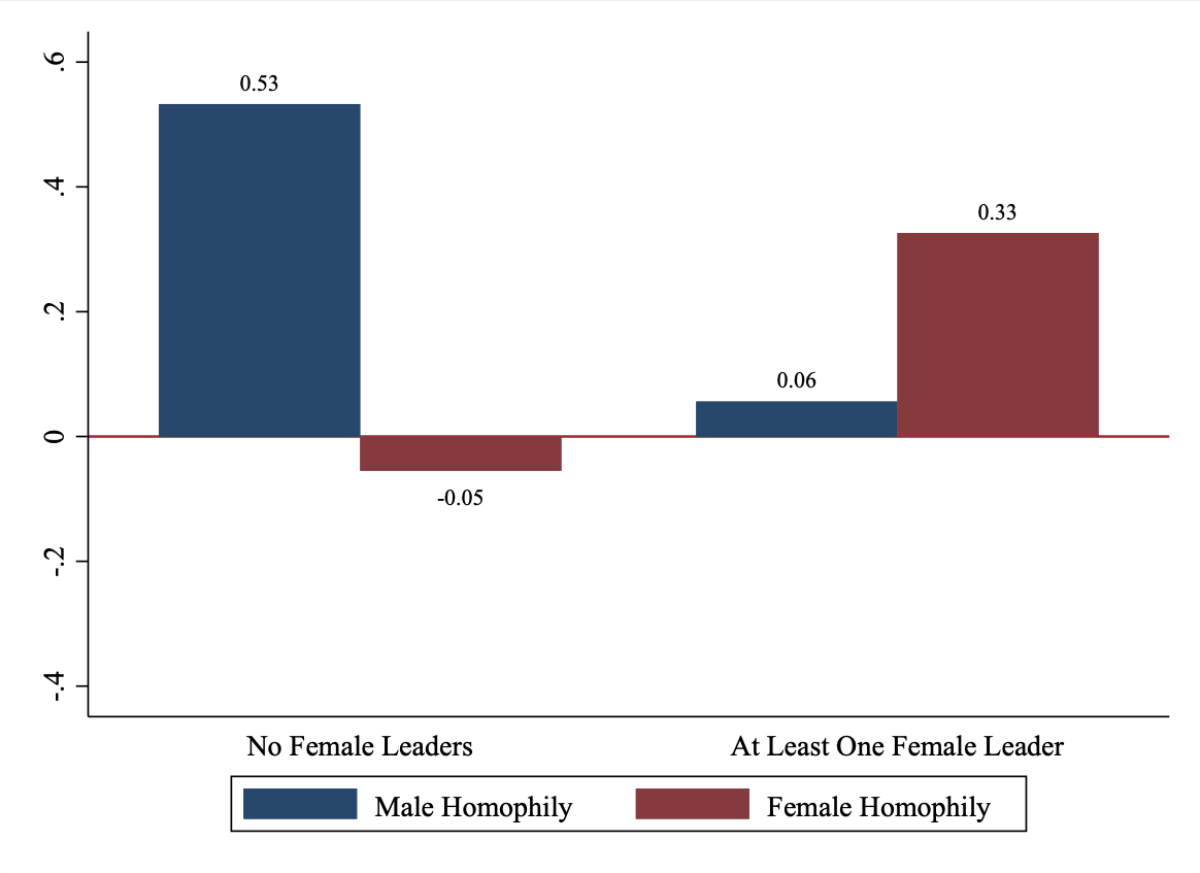
The figure plots the mean proportion of females and males nominated by subordinates in professional support network, separately under female and male leaders. Numbers on top of the bars indicate the mean proportions.

Figure A.2: Leader Gender and Nominations: Personal Support



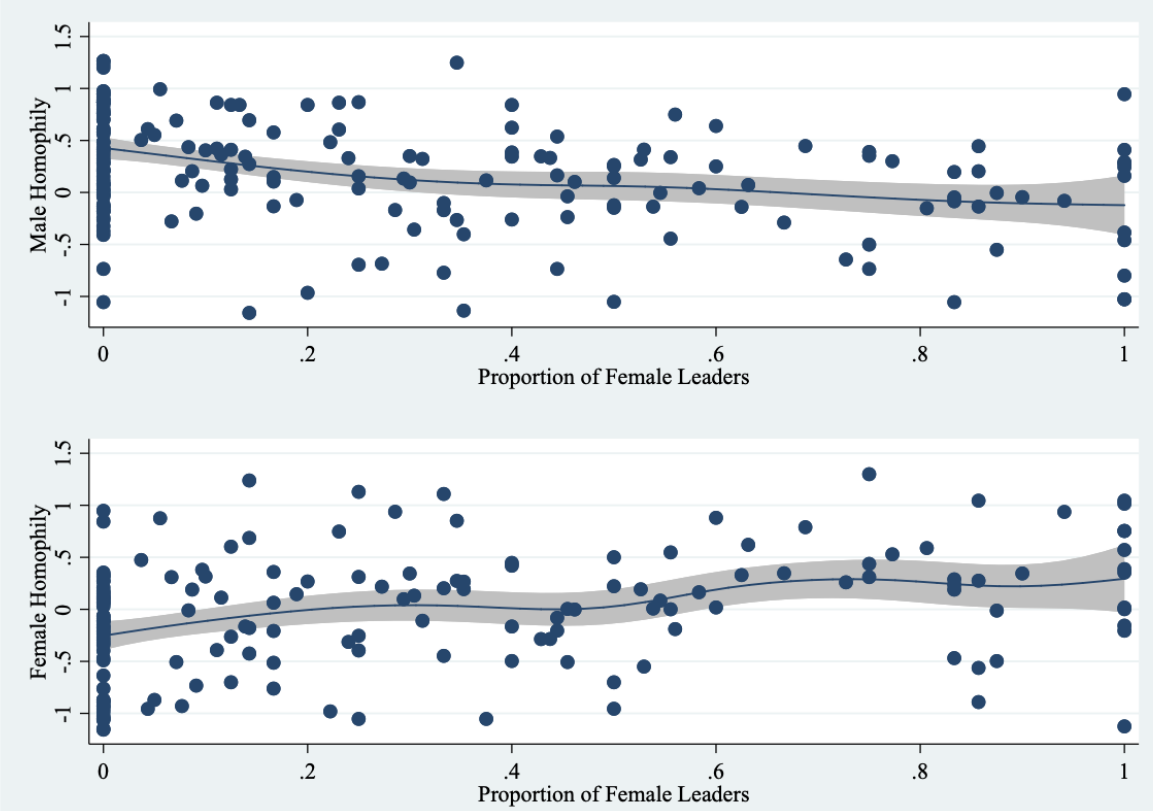
The figure plots the mean proportion of females and males nominated by subordinates in personal support network, separately under female and male leaders. Numbers on top of the bars indicate the mean proportions.

Figure A.3: Presence of Female Leaders and Homophily: Personal Support



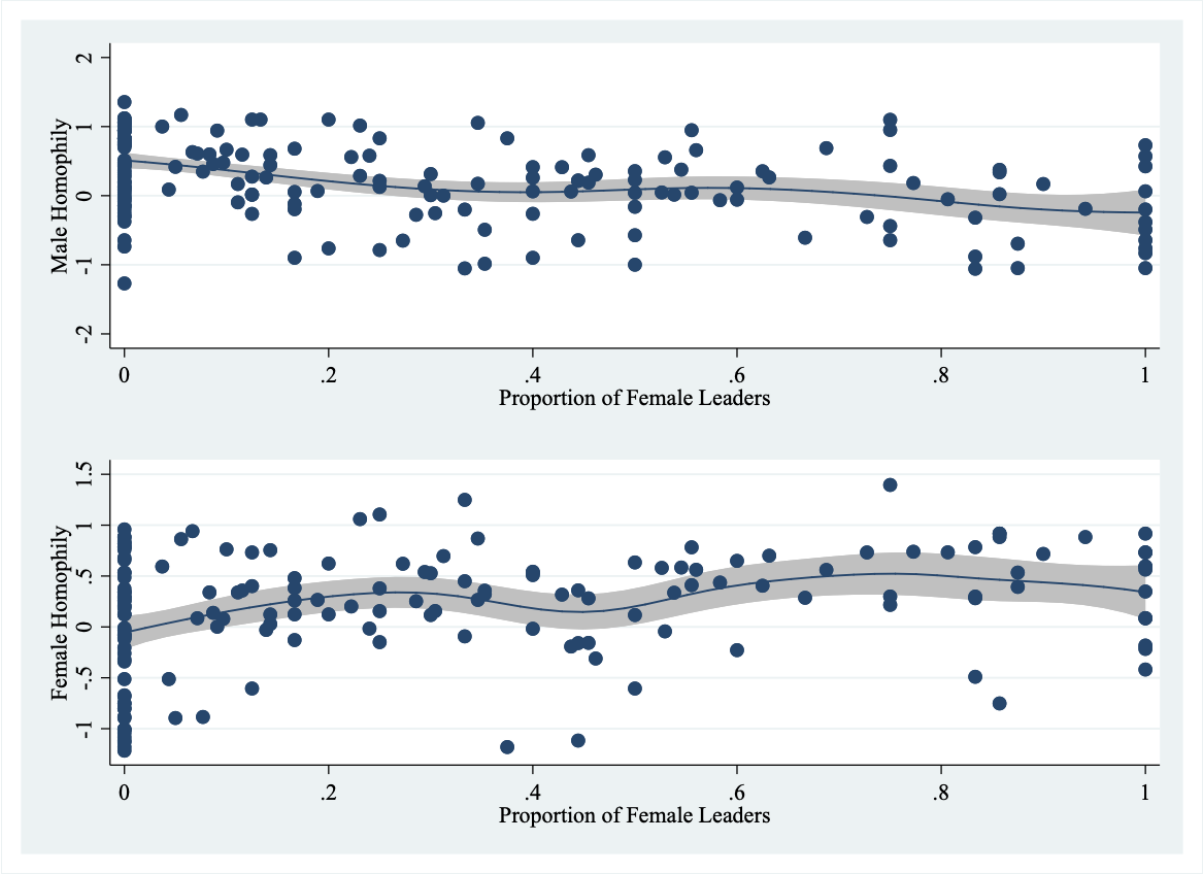
The figure plots the mean female and male Coleman homophily index at department level separately for departments with no female leaders and at least one female leader. Numbers on top of the bars indicate the mean Coleman homophily index.

Figure A.4: Proportion of Female Leaders and Homophily, Professional Support



The figure plots female and male Coleman homophily index at department level using semi-parametric estimation with the proportion of female leaders within department and firm fixed effects. The gray-shaded area indicates the 95% confidence intervals based on clustered standard errors at firm level.

Figure A.5: Proportion of Female Leaders and Homophily, Personal Support



The figure plots female and male Coleman homophily index at department level using semi-parametric estimation with the proportion of female leaders within department and firm fixed effects. The gray-shaded area indicates the 95% confidence intervals based on clustered standard errors at firm level.

B Instructions for Incentivized Games

We will play some fun games with you today. In these games, you will make some choices. Depending on your choices and the choices of other participants, you will earn different amounts of money.

Each game has a set of rules, but there is also an important ground rule. We ask you to make sure that you keep your choices to yourselves and never share them with anyone during the games.

We will play 3 games in this part. At the end of this part, 1 of the 3 games will be randomly selected and your earnings will be equal to the money you earned in the randomly

selected game. The reason we are randomly picking a game to determine your earnings is that we want to make sure that you pay equal attention to every game. We will start the games all together at the same time. We will also wait for the instruction to move on to the next sections.

Competition Game:

This game consists of 3 periods. At the end of this part, if competition game is chosen to determine the earnings, 1 of these 3 periods will also be chosen randomly to determine your earnings. Each period lasts for 2 minutes.

Period 1 - Piece rate:

For Task 1 you will be asked to calculate the sum of three randomly chosen two-digit numbers. You will be given 2 minutes to calculate the correct sum of a series of these problems. You cannot use a calculator to determine these sums. An example:

Figure A.6: Competition game task example

If Period 1 is the one randomly selected for payment, then you get 3 TL (Turkish Lira) per problem you solve correctly in the 2 minutes. Your payment does not decrease if you provide an incorrect answer to a problem. We refer to this payment as the piece rate payment.

Please do not talk with one another for the duration of the game. If you have any questions, please raise your hand. ARE THERE ANY QUESTIONS BEFORE WE BEGIN?

Period 2 - Tournament:

As in Period 1 you will be given 2 minutes to calculate the correct sum of a series of three two-digit numbers. However for this task your payment depends on your performance relative to that of a group of other participants. Each group consists of three people, the two other members of your group are randomly selected members of your class. You will not know who is in your group.

If Period 2 is the one randomly selected for payment, the individual in the group who

correctly solves the largest number of problems will receive 9 TL per correct problem. The other participants receive no payment. We refer to this as the tournament payment. If there are ties the winner will be randomly determined.

Please do not talk with one another for the duration of the game. If you have any questions, please raise your hand. ARE THERE ANY QUESTIONS BEFORE WE BEGIN?

Period 3 - Choice:

As in the previous period you will be given 2 minutes to calculate the correct sum of a series of three 2-digit numbers. However you will now get to choose how you want to be payed: piece rate or tournament.

If Period 3 is the one randomly selected for payment, then your earnings for this task are determined as follows. If you choose the piece rate you receive 3 TL per problem you solve correctly. If you choose the tournament your performance will be compared to the performance of the other two participants of your group in Period 2. Period 2 is the one you have just completed. If you correctly solve more problems than the others in in your group did in Period 2, then you receive 9 TL per correct problem. You will receive no earnings for this task if you choose the tournament and do not solve more problems correctly than the others in your group did in Period 2.

Please do not talk with one another for the duration of the game. If you have any questions, please raise your hand. Please indicate below which payment scheme you choose: piece rate or tournament. ARE THERE ANY QUESTIONS BEFORE WE BEGIN?

Public Good Game:

In this game, you will be in a randomly formed group of three participants. Each participant in the group is given 30 TL. The group has the opportunity to undertake a joint project. Each participant in the group decides how much she or he is going to contribute to the project. Contribution could be any amount from 0 to 30 TL. The earnings from the project are calculated as follows: The contributions of all 3 participants are added up, the total contribution is multiplied by 2, and the resulting amount is the total earnings from the project, which is evenly split among all 3 participants. Your payoff equals your earnings from the project, plus the amount you did not contribute.

Let us work out an example. Suppose that the total contribution to the project is 15 TL. It is multiplied by 2 and divided equally between the three participants in the group.

Therefore, each participant receives back 10 TL from the joint project. Suppose that you have contributed 8 TL. Then your earning is 22+10=32 TL.

Please do not talk with one another for the duration of the game. If you have any questions, please raise your hand. ARE THERE ANY QUESTIONS BEFORE WE BEGIN?

Risk Game:

In this game, you will make an investment decision. You will be given 30 TL in the beginning of this game. You will then allocate this 30 TL between a risky and risk-free option. The amount invested in the risky option will be multiplied by 3 with %50 probability and will be lost with %50 probability. You will keep the amount invested in the risk-free option as it is.

Please do not talk with one another for the duration of the game. If you have any questions, please raise your hand. ARE THERE ANY QUESTIONS BEFORE WE BEGIN?

Donation Game:

We give you an option to donate your earnings from the previous games to the disadvantaged schools (CONFIRM WHETHER SCHOOLS OR STUDENTS) in the South-East of Turkey. Please indicate what percentage of your earnings you would like to donate. This number can range from %0 to %100.

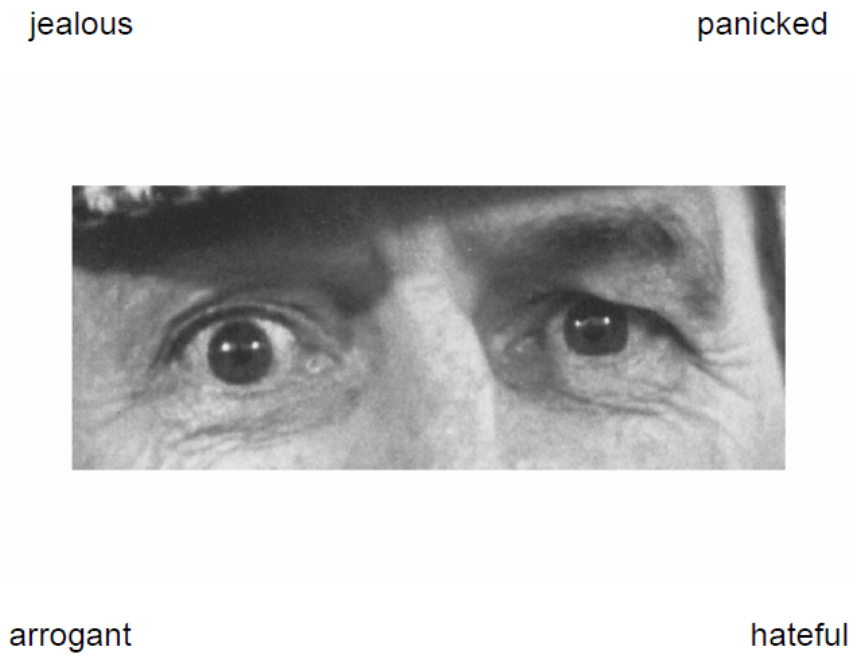
C Instructions for Cognitive Tests

Reading the Mind in the Eyes:

We use "Reading the Mind in the Eyes" test developed by Baron-Cohen et al. (1997) and Baron-Cohen et al. (2001) to measure the cognitive empathy of the respondents. An example question from this test is given in Figure A.7. We instruct the respondents as follows:

"For every pair of eyes, please choose the word that you think reflects most accurately what the person in the picture thinks or feels. If you think more than one word describes it, please choose only the one that you find most accurate. Please also make sure that you read all of the four words before making your choice."

Figure A.7: Reading the mind in the eyes example

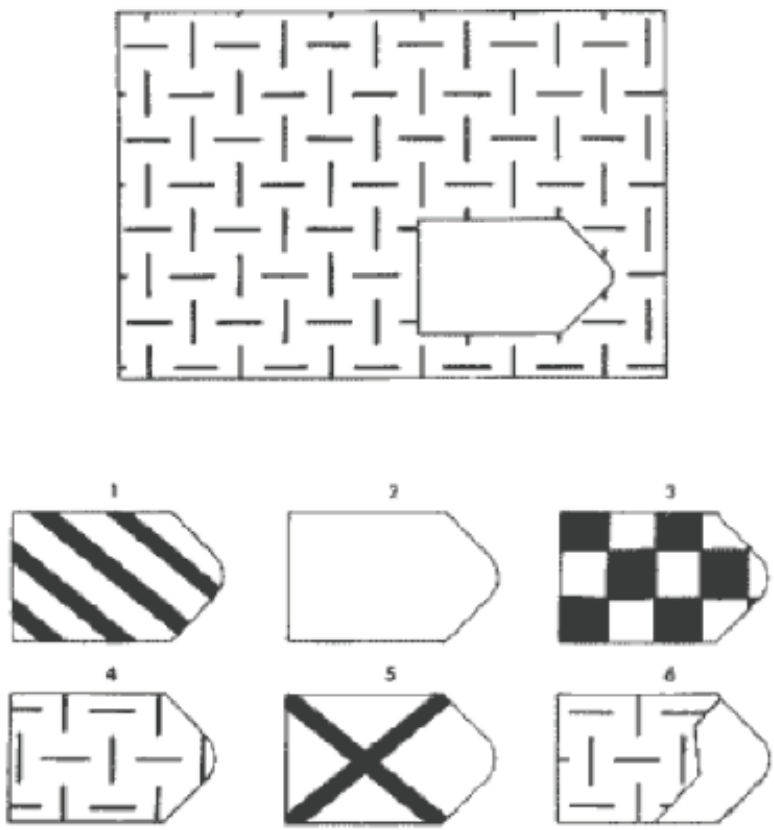


Raven's Advanced Progressive Matrices:

We use Raven's progressive matrices to measure abstract reasoning and non-verbal fluid intelligence (Raven, 1960). An example of Raven's progressive matrices is given in Figure A.8. We ask the following question to the participants:

"Which of the smaller figures does fit the pattern in the picture?"

Figure A.8: Raven advanced progressive matrices example



The Remote Associates Test

We use the Remote Associates Test to measure the verbal creativity of the respondents. This test was originally developed by Mednick (1962). It is accepted as a valid measure of creative thinking (Lee et al., 2014; Bowden and Jung-Beeman, 2003; Marko et al., 2019).

We instruct the respondents as the following:

"Please look at the three remotely associated words below and find a fourth word that is related to all these three words. The fourth word must either prefix or suffix the three words given. If you cannot find any, you can leave the question empty and move on to the next one.

Let us illustrate it with an example:

sense / courtesy / place

For the three words above, an answer can be "common": *common* sense, *common* courtesy, and *common* place."

D Survey Items

Instrument	**Items**
Workplace Satisfaction	*To what extent do the following statements describe your thoughts about your company? (Definitely not True-Not True-Somewhat True-True-Definitely True)*
	I am not able to practice my own profession at this workplace. I am very pleased to have chosen to work at this company. Working in this company excites me. I plan to continue to be part of this workplace in the following years. In this workplace, the chances that I make progress in my professional career are high. If possible, I prefer working at another company where I can get practice my profession better. I believe that, in this workplace, my ideas are taken seriously and my contributions are recognized.
Meritocratic Values	*To what extent do the following statements describe your thoughts about your company? (Definitely not True-Not True-Somewhat True-True-Definitely True)*
	I believe if I work hard and perform well here, I will be promoted very quickly. I don't believe I'll be promoted unless I've enough connections with executives. If possible, I prefer working at another company where I can get promoted more easily.
Collegiality	*The following statements are related to your department colleagues. Please use the following scale to state your opinion. (Never-Rarely-Sometimes-Often-Always)*
	My department colleagues protect each other against an outside criticism. Those working in this department only think of and work for themselves. Different ideas are discussed extensively within the department. Everyone's ideas are listened to and taken into consideration in our department. People attack others verbally and with disrespect during departmental meetings.
Job Saisfaction	*The following statements are related to your department colleagues. Please use the following scale to state your opinion. (Never-Rarely-Sometimes-Often-Always)*
	I am happy to have chosen this job. My job excites me. I plan to continute to practice my job in the future as well. My job inspires me. If it were possible, I would have preferred practicing another job.
Behavioral Norms	*How often do you observe your department colleagues in the following situations? (Never-Rarely-Sometimes-Often-Always)*
	Gossiping Criticizing someone Helping someone Protecting someone else's rights Violating someone's rights Spending time on social media (during working hours on matters unrelated to work) Staying silent in situations of injustice
Leader Professionalism	*The following statements are related to your your team leader. Please use the following scale to state your opinion. (Never-Rarely-Sometimes-Often-Always)*
	Our department leaders are good listeners. Our department leaders have favorites and they are given favorable treatment. Our department leader is modest and accepts her mistakes. I completely trust our department leader's professionalism. Our department leader claims achievements, but blames mistakes on others. Our department leaders serve the interests of department rather than their own.

E HR Testimonials

Instrument	Items
Assignment to leader: Importance of Candidate Qualities	Are candidate's qualifications, education, and experience important when assigning candidates to a unit? *Not important at all - Not important - Makes no difference - Somewhat important - Very important* Is candidate's age important when assigning candidates to a unit? *Not important at all - Not important - Makes no difference - Somewhat important - Very important* Is candidate's gender important when assigning candidates to a unit? *Not important at all - Not important - Makes no difference - Somewhat important - Very important* Are candidate's personal characteristics, measured by psychometric tests or observations, important when assigning candidates to a unit? *Not important at all - Not important - Makes no difference - Somewhat important - Very important*
Assignment to leader: Importance of Leader Qualities	Are prospective leader's age and experience important when assigning candidates to a unit? *Not important at all - Not important - Makes no difference - Somewhat important - Very important* Is prospective leader's gender important when assigning candidates to a unit? *Not important at all - Not important - Makes no difference - Somewhat important - Very important* Are prospective leader's personal characteristics, measured by psychometric tests or observations, important when assigning candidates to a unit? *Not important at all - Not important - Makes no difference - Somewhat important - Very important*