Workplace Sex Composition and Appreciation at Work

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Abstract

We study appreciation of one's work using nationally representative survey data from Sweden linked with employer–employee data. The level of appreciation from colleagues rises sharply with the share of women in the workplace. A strong relationship remains even after adding an extensive set of controls. We also find that the strong pattern holds for women and men workers, as well as for appreciation received by subordinates or managers. More appreciation from colleagues is associated with higher levels of job satisfaction and other indicators of worker well-being. The results demonstrate the potential benefits of hiring more women in male-dominated workplaces, and suggest new directions for research on gender inequality in the labor market.

Keywords: gender equality, appreciation at work, diversity, work conditions.

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Introduction

Positive reinforcement in the workplace matters for workers' well-being and the employer's bottom line. Collegial appreciation of one's work constitutes the type of positive reinforcement at the center of workhorse psychology models created to understand well-being at work. It can mitigate negative health consequences of high-effort work environments (Siegrist 1996) and make employees interpret their work as more valuable and meaningful (Ryan and Deci 2000, Wrzesniewski et al., 2003, Nikolova and Cnossen 2020, Lysova et al. 2023). Supportive and caring interactions constitute a community-based corporate culture that company executives find crucial for firm performance (Graham et al. 2022). Conversely, employees describe how disrespectful interactions are a "toxic" workplace culture pushing them to leave their jobs (Sull et al. 2022a, 2022b, see also Alan et al. 2023a).¹

The importance of positive reinforcement for workers and firms motivates research on who benefits from this work condition in the labor market and which factors might increase its prevalence in workplace culture. We study people's experiences in receiving appreciation from colleagues for their work in nationally representative survey data from Sweden.² Our paper provides the first epidemiological description of this interpersonal work condition and offers novel insights about its close relationship with the sex ratio of the workplace.³

The strong socialization of women's and men's interpersonal behaviors in society leads us to expect higher levels of collegial appreciation in workplaces with more women. Society trains women from an early age to behave more *communally* by being kind and caring for others, and it trains men to behave more *agentically* by being self-centered, aggressive, and assertive (Bakan 1966, Eagly and Karau 2002, Eagly 2013, Hsu et al. 2021). Given that this behavioral difference plays out in the workplace, women workers will behave more communally than men (e.g., Babcock et al. 2017). A larger share of women in the workforce may also shift workplace

¹ Text analysis of over a million reviews on Glassdoor, which publishes anonymous employee reviews of workplaces, found that disrespectful interactions are a top factor in workers' negative perceptions of workplace culture, which features more prominently than negative views on economic compensation in workers' descriptions of why they left their jobs (Sull et al. 2022a, 2022b).

² We translate the Swedish term *uppskattning* as *appreciation*. Just like the concept of *appreciation* in English, the Swedish word includes informal and formal types of recognition at work, and may also include positive reinforcement that is not directly linked to a person's job performance (for a discussion of these two concepts, see https://www.hi5.team/blog/difference-recognition-appreciation-work).

³ Nationally representative descriptions are unusual for any interpersonal work environment trait. For a recent example, see Jonsdottir et al. (2022). The main correlation shown in this paper previously formed part of an index variable based on several aspects of the interpersonal work environment, which was used as a control variable in Folke and Rickne's (2022) study of sexual harassment (see Appendix Figure A5).

behaviors of both men and women toward the female communal gender-role (Kanter 1977, Gutek and Morash 1982, Boschini et al. 2011).

We link nationally representative survey data to administrative data on the gender breakdown in every survey respondent's workplace and find that appreciation from colleagues rises sharply with the proportion of women. This relationship is strikingly similar for women and men. The average level of self-reported received appreciation is 0.5 standard deviations higher for both male and female workers in workplaces with more than 90% women compared to those with fewer than 10% women. In these women-dominated workplaces, three times as many respondents self-report receiving appreciation "every day" (21% vs. 7%), and just one-third as many say they receive appreciation "rarely or never" (5% vs. 14%).

An important caveat to our analysis is that our survey question on appreciation from colleagues could partly capture appreciation from people not employed in the workplace, such as customers, clients, or patients. To address this issue, we demonstrate that our results are, if anything, are stronger in a sub-sample of respondents who self-report having zero contact with these groups in their daily work. We also show that people in workplaces with more women self-report more personal support from colleagues—a survey question that is not subject to this potential measurement error.

We analyze how sorting of women and men into occupations, industries, and workplaces may account for the relationship between collegial appreciation and the workplace share of women. Research has observed how women and men's job choices are guided by their relative socialization toward communal behaviors (Croft et al., 2015, Block et al., 2018). Consistent with this process of self-selection, we document higher levels of collegial appreciation in occupations and industries with larger shares of women. These patterns account for about half of our relationship of interest.

Another strand of previous research indicates that women may sort into workplaces with stronger pro-social missions due to their communal orientation (Abraham and Burbano 2021, but see Samek 2019). Our results are consistent with the idea that this sorting partly accounts for the higher levels of appreciation in workplaces with more women. The results also indicate that a greater presence of female supervisors in female-dominated workplaces can account for part of the relationship. Analyzing the gender of the supervisor yields the observation that workers with a female supervisor self-report 0.05—0.11 standard deviations higher levels of collegial appreciation. This result aligns with recent evidence that female managers have higher

levels of cognitive empathy than male managers and foster more positive social interactions in the groups they manage (Alan et al. 2023b).

Even if our analysis of the role played by the workplace share of women for collegial appreciation is descriptive rather than causal, several findings point to a causal interpretation. About half of the statistical relationship between appreciation and the share of women remains when we analyze experiences of appreciation within workplaces over time while also adding an extensive set of controls that includes the share of women in the industry or occupation. Roughly half of the relationship also remains when we compare levels of appreciation between workplaces belonging to the same firm in the same year, such as stores in the same supermarket chain.

Our paper demonstrates new economic and social benefits of gender diversity in the labor market. The results suggest that employing more women in male-dominated workplaces enhances the quality of the interpersonal work environment. To substantiate this point, we show that workplaces with more women have higher levels of collegial appreciation not only in women-dominated industries and occupations, but also in male-dominated ones like manufacturing or finance.

The paper ends by demonstrating strong correlations between appreciation from colleagues and worker well-being. People who feel more appreciated self-report higher job satisfaction, experience fewer feelings of unease when they go to work, and are less likely to consider quitting their job for health reasons. These results support the substantive importance of our main results. They also indicate that increased gender diversity in male-dominated workplaces might reduce costs related to stress and ill health by, for example, raising workers' perceived rewards for their efforts and increasing the sense of relatedness between colleagues (Ryan and Deci 2000, Siegrist 1996).

Our paper advances the understanding of gender gaps in non-monetary work conditions. This literature has described how women tend to hold jobs with more time–space flexibility and which are more meaningful (e.g., Goldin 2014, Maestas et al. 2023, Burbano et al. forthcoming) and experience more sexual harassment and violence in male-dominated workplaces (Folke and Rickne 2022, Adams-Prassl et al. 2023). We concentrate on positive interpersonal behaviors and show that workplaces with more women benefit from much higher levels of appreciation from their colleagues.

Our results might provide new insights into women's slower and career development. They indicate that women invest more time in making others feel appreciated for their work, which echoes Babcock et al.'s (2017, 2022) discussion of women's communal behaviors in taking on "non-promotable tasks" in the workplace. Exhibiting appreciation of colleagues provides value to the employer in a similar way, in this case by creating a workplace environment characterized by positive social relationships and positive reinforcement of people's work efforts (see references at the beginning of this introduction). Raising employers' valuations of these behaviors might help close gender gaps in promotions while sidestepping backlash associated with "lean-in" interventions focusing on increasing women's agentic behaviors (Nandkeolyar et al. 2022, Rudman and Glick 2001).⁴

This paper builds on, and contributes to, ongoing research efforts in various academic disciplines. We build on research in management and organizational psychology that ascribes a key role to recognition from peers in people's overall recognition at work (following the pathbreaking work by Brun and Dugas 2008) and empirical studies of how positive social relationships shape work experiences such as meaningfulness (Lysova et al. 2023 and Montani et al. 2020). Our description of macro-level variation in collegial appreciation in the labor market contribute to research on corporate culture. This work has emphasized that supportive social relationships (and social interactions more broadly) are a key component of corporate culture with significant implications for firm performance (Gorton et al. 2022).

We advance the management literature on positive practices in the workplace by studying how gender inclusivity contributes to positive interpersonal treatment (e.g., Cameron et al. 2011, Seppala and Cameron 2015). We advance the management literature on how to raise women's chances of recruitment into teams or workplaces (e.g., Chang et al. 2020, Ip et al. 2020) by analyzing how workplace gender composition may, in turn, be related to nonmonetary outcomes of these groups. And while studies show that women's presence in groups improve team performance by influencing group processes (e.g., Wooley et al. 2010, Keck and Tang 2018, reviewed by Bear and Woolley 2011), no prior research has examined relationships between workplace gender compositions and social interactions in nationally representative data.

⁴ Nandkeolyar et al. (2022) demonstrate that showing appreciation might not facilitate promotions—and may even make women less likely to be promoted. Note that we do not argue in this paper that agentic behaviors like competitiveness are mutually exclusive with communal behaviors like appreciation and care for others. A competitive work environment may raise productivity without negatively affecting the interpersonal work environment (as argued by Buser et al. 2021).

Finally, we contribute to the social psychology literature on how stereotypical behaviors for women and men affect the interpersonal work environment (e.g., Gutek and Cohen 1987). A growing research literature describes how a lack of civility and positive social interactions characterize a workplace culture with "masculinity contests" in strongly male-dominated workplaces (following Berdahl et al. 2018). Our paper provides, to our knowledge, the first large-scale description of how women-dominated workplaces may develop opposite interpersonal cultures characterized by higher levels of interpersonal appreciation and support.

Data and Variables

We measure appreciation at work using in the nationally representative Swedish Work Environment Survey, which the government administers every other year to track work conditions.⁵ We pool 13 biannual cross-sections for 1995–2019 and use two survey questions. The first asks whether "your manager shows appreciation for something you have done at work,"⁶ and the second asks if "other people show appreciation for something you have done at work (for example colleagues, patients, customers, clients)."⁷ Responses are scored from (1) not at all to (5) every day.

In the main analysis we use answers to the question on appreciation from "others" to create the variable *Appreciation from colleagues*. This source of appreciation should be the main component in the responses, given that "colleagues" is the first group mentioned in the examples and because the wording excludes appreciation from managers by referring to the first question. Several empirical tests support this interpretation. Most importantly, we restrict the sample to respondents who report having no contact in their work "with groups like patients, customers, and clients" (see Figure 2).

To obtain information on the gender composition of survey respondents' workplaces, we link the survey data to administrative data at the individual-year level via anonymized personal identification (ID) codes. This administrative data includes all Swedish permanent residents. Variables include basic demographic traits as well as information on earnings from tax records.

We define an individual's workplace as the unique combination of the firm and establishment ID codes of their primary source of labor or business income in a calendar year.

⁵ For more information about this survey, see https://www.scb.se/en/finding-statistics/statistics-by-subject-area/labour-market/work-environment/the-work-environment-survey/.

⁶ In Swedish: Händer det att din chef visar uppskattning för något du gjort?

⁷ In Swedish: Händer det att andra personer visar uppskattning för något du gjort (t ex arbetskamrater, patienter, kunder, klienter)?

This combination captures a single building or street address where a firm has operations, such as a specific Walmart store. We calculate the proportion of women in this unit after removing the respondent, using data on binary sex at birth from birth records. Appendix Figure A1 displays the distribution of this variable.

Although our survey data is a repeated cross-section of workers, many workplaces have numerous responses. This allows us to establish that changes in the share of women in a workplace over time are associated with changes in collegial appreciation. Since larger firms are more likely to have many responses over time, and these workplaces have less variation over time in the share of women, this reduces precision more than the sample size might suggest when we rely on within-workplace variation.

Additional variables from the administrative data include education level, (global) region of birth, age, household composition (parenthood and civil status), and workplace size. With few exceptions, these are objective measurements from administrative data with very few missing values.⁸ Data on industrial sector comes from tax records and applies to the survey respondent's main job in the survey year. Data on occupation comes from the mandatory Swedish Salary Statistics survey, which is available for all our survey respondents. We also use this source for data on wages in our sensitivity analyses, noting that the wage variable has a substantial proportion of missing values.⁹

Additional variables from the survey are as follows. We create a dummy for Zero contact with outside groups in the job, which takes a value of 1 for respondents whose work does not involve contact with outside groups. We classify a respondent as a *supervisor* if they report that their job involves leading or delegating the work of others; we define them as a subordinate if they report that this is not the case. We measure having a *female manager* using a direct question about this.

The extended analysis of worker well-being uses three additional survey questions. *Job satisfaction* is reported using a 5-step Likert scale ranging from *Very dissatisfied* to *Very satisfied*, and *Unease when going to work* is a 5-step Likert scale ranging from *Not at all, rarely in the last 12 months*, to *Every day*. We recalculate both of these ordinal variables as Z-scores. *Leave considerations* is a dummy for an affirmative answer to the question: "In the last year,

⁸ The main exception is the education variable, based on immigrants' self-reported level of education obtained in their country of origin.

⁹ Occupation is available for all respondents. Wage data is available after 1997 for all respondents working in large and medium-sized firms, and a random sample of respondents who work in small firms.

did you consider leaving your job for health reasons?" Appendix Table A1 lists all survey questions in our analysis along with our coding choices.

Pooling the survey data generates 96,680 responses about collegial appreciation. Restricting this sample by respondent age (18–64) and workplace size (five or more employees) removes approximately 10% of the sample and leaves 87,294 observations. Further removing missing data on any of the demographic variables, workplace/firm ID codes, or occupation or industry codes removes another 10%. The final analysis sample contains 81,830 observations.

Appendix Table A2 compares traits in the survey sample with those of the full Swedish labor force restricted to the same age interval and workplace sizes. The sample is also representative with respect to the distribution of workplace sizes and the workplace share of women. It is also highly representative on most socio-demographic traits except region of birth: people born outside of Europe are under-represented (2% in the analysis sample and 6% in the population). We use Statistics Sweden's sample weights as analytical weights throughout the paper.

Descriptive Statistics

Responses about appreciation from colleagues have a normal distribution across the question's five categories. Similar proportions fall into the bottom category of *Never or rarely* receiving appreciation and the top category of receiving it *Every day* (11% and 10%, respectively). There are also similar proportions of respondents in the three middle categories, in which respondents receive appreciation *a couple of days per month* (31%), *one day per week* (25%), or *a couple of days per week* (23%). The mean of the ordinal variable is 2.99, which corresponds to receiving appreciation *one day per week*, and the standard deviation is 1.17.

Women's average level of appreciation from colleagues is 0.22 standard deviations higher than men's. Figure 1 shows how levels of appreciation vary across other personal and workplace traits. We standardize the categorical variable for appreciation to have a mean of 0 and a standard deviation of 1 to facilitate the interpretation. The level of appreciation varies relatively little across categories of education, birth region, age, and family situation. Appreciation is lower in larger workplaces and supervisors self-report receiving more appreciation than subordinates. Comparing levels of appreciation over time shows no apparent time trend. Over the 13 years in our sample, the highest and lowest yearly values differ by only 0.12 standard deviations.



Figure 1. Levels of Appreciation at Work across Socio-Economic Traits (SD).

Note: The categorical variable for self-reported receipt of collegial appreciation is standardized to have a mean of 0 and a standard deviation of 1. Job status as a subordinate or supervisor is self-reported in the survey and other variables come from administrative records. Source: The Swedish Work Environment Survey linked with tax records and other administrative records. N(Women)=43,725; N(Men)=38,105.

Results

Figure 2 displays how appreciation from colleagues varies depending on the share of women in the respondent's workplace. We continue to use the standardized *Appreciation* variable with a mean of 0 and a standard deviation of 1. The figure shows binned averages of this standardized variable by the workplace share of women. The relationship between appreciation and the share of women employees is strong and positive for both male and female survey respondents. There is no sign of a gender-congruency effect in which women benefit more from female colleagues and men more from male colleagues. The graph on the left shows that in the full sample of respondents, the level of self-reported appreciation from colleagues is about 0.6 standard deviations higher in workplaces with 100% women compared to those with 0%.

The right side of Figure 2 replicates the relationship using the sub-sample of respondents whose job involves no interactions with people not employed in their workplace. The whole distribution of responses shifts downward in this sub-sample, which demonstrates that people other than colleagues offer a significant amount of appreciation. Yet since the slope in this sample is the same as in the full sample, this supports our interpretation that differences in appreciation from *colleagues*, rather than from the other groups mentioned in the survey, explain why self-reports differ across workplaces with different shares of women. A notable

fact from the figure is that the average level of collegial appreciation is 0.17 SD lower among workplaces with less than 10% women compared to gender-mixed workplaces with 45—55% women. This indicates that male-dominated workplaces stand to gain a more positive workplace culture by increasing gender diversity.



Figure 2. Appreciation at Work and the Share of Women in the Workplace.

Notes: The figure shows binned averages of a standardized categorical variable for self-reported appreciation by non-managers in the workplace. Each sub-sample of men and women is split into 100 equally sized bins of the X-variable. A workplace is defined as a unique combination of plant and organizational ID codes, and we calculate the share of women in each workplace using population-wide register data. In the right-hand-side graph, the dataset is restricted to survey respondents who self-report having no contact with "groups like patients, customers, and clients" in their jobs. The data consists of 13 pooled cross-sections of the Swedish Work Environment Survey (1995–2019), N(Women left graph): 43,725; N(Men left graph): 38,105; N(Women right graph): 6,822; N(Men right graph): 5,198.

Critique of our analysis might be based on the self-reported nature of appreciation at work. *Social desirability* bias or *demand bias* would affect answers if respondents in workplaces with more women feel socially obliged to present the interpersonal environment in their workplace in a more positive light, or feel that the surveyor desires this result. Both behaviors are unlikely in our case due to the nature of the survey data. Social desirability bias is unlikely because the survey is completely anonymous and the employer is never informed that an employee was sampled. Demand bias is equally unlikely because the topic of appreciation has very low salience among more than 100 survey questions.

We evaluate the relationships between collegial appreciation and the workplace share of women by estimating a sequence of regressions. All regressions include year dummies and standard errors are always clustered at the workplace level. Column 1 in Table 1 replicates the bivariate relationship of 0.6 standard deviations from the graphical analysis. The specification in Column 2 controls for traits of the respondent and their workplace using dummies for respondent sex at birth, education level, (global) region of birth, age, family situation, and workplace size. The constant size of the coefficient of interest rules out the possible concern

that differences across these demographic groups in interpretations of interpersonal behavior at work drive our main relationship of interest. An extended analysis holds constant the respondent's wage, which addresses the potential issue of *justification bias*, in which people self-report a nicer work environment to justify their employment in low-wage workplaces that also have more women (results in the top panel of Appendix Table A3).

We continue the analysis by assessing the extent to which we can ascribe the relationship between collegial appreciation and the workplace share of women to the sex ratios of occupations or industries. Communally oriented women may select into occupations or sectors with jobs and tasks that match this orientation, such as nursing or education, which would imply that occupation or industry shares of women can account for our relationship of interest. Figure 3 shows that women and men workers enjoy substantially higher levels of collegial appreciation when they work in occupations or industries with a larger share of women. Appendix Figure A2 replicates these patterns in the smaller sample of workers whose jobs involve no contact with outside groups.



Figure 3. Appreciation at Work and the Share of Women in the Occupation or Industry.

Notes: The figure shows binned averages of a standardized categorical variable for self-reported appreciation by non-managers in the workplace. Each sub-sample of men and women is split into 100 equally sized bins of the X-variable. Occupation is measured by the 3-digit SSYK96-code and industry by the 5-digit SNI-code, and we calculate the share of women in pooled annual cross-sections of population-wide administrative data in the survey years. The survey data consists of 13 pooled cross-sections of the Swedish Work Environment Survey (1995–2019), N(Women): 43,725; N(Men): 38,105.

Returning to the regression table, the point estimate on the workplace share of women shrinks to about half its size when we include either the share of women in the occupation (Column 3), or the share of women in the industry (Column 4), as control variables. The estimates on the share of women in the workplace remain substantively large, however, and statistically significant. An issue with interpreting the impact on the point estimate for the workplace share women when we include these controls is that they have very strong correlations with the workplace share of women. The pairwise correlation with the share of women in the industry is 0.9, and it is 0.7 with the share in the occupation. This makes it hard to statistically disentangle the relationships from each other.

DV: Collegial Appreciation (SD)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Share of Women	0.60***	0.66***	0.49***	0.24***	0.30**	0.48***	0.28**	0.25***
in the Workplace	(0.01)	(0.02)	(0.02)	(0.03)	(0.12)	(0.04)	(0.12)	(0.05)
Share of Women			0.32***				0.18***	0.23***
in the Occupation			(0.02)				(0.03)	(0.03)
Share of Women				0.56***			-0.08	0.26***
In the Industry				(0.04)			(0.16)	(0.08)
Observations	81,830	81,830	81,830	81,830	51,847	51,073	51,847	51,073
Year Fixed Effects	х	х	х	х	х	х	Х	Х
Control Variables		х	х	х	х	х	Х	Х
Workplace Fixed Effects			х		х		Х	
Firm-Year Fixed Effects				x		x		x

 Table 1. Regression Estimates for Collegial Appreciation and the Share of Women in the Workplace

Notes: The table reports estimates of the coefficient on the share of women in regressions in which the dependent variable is *Appreciation from colleagues* in standard deviations. Control variables are dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors clustered at the workplace level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

The next two columns add fixed effects for workplaces (Column 5) and for the combination of firm and year (Column 6). Note here that industry is defined at the workplace level and rarely changes over time, so adding workplace fixed effects largely holds industry constant. The relationship between appreciation from colleagues and the share of women remains sizeable at 0.3–0.5 standard deviations in these specifications. Changes in the share of women within workplaces over time are associated with sizeable shifts in self-reported appreciation. There is also a sizeable association between the share of women in the workforce and the level of appreciation when only comparing different workplaces that belong to the same firm in the same year (such as different Walmart stores).

The reduction in coefficient sizes when we add workplace or firm-year fixed effects might indicate that some constant workplace or firm trait explains part of our relationship of interest. One interpretation is that workplaces or firms with stronger social missions attract (female) workers with a communal goal-orientation who are, due to their communal values, more likely to show appreciation for their peers at work (Abraham and Burbano 2021, but see Samek 2019). At the same time, the remaining size of the coefficient shows that raising the share of women

is associated with more collegial appreciation when holding such workplace or firm-level traits constant.

An extended analysis summarized here with details in the Web Appendix tests another mechanism that mostly operates at the workplace of firm level. Workplaces with more women are more likely to have female supervisors and these supervisors may foster a more positive relational culture among their subordinates (Alan et al. 2023b). We find some support for this mechanism: the estimated relationship between appreciation and the workplace share of women shrinks by about 0.1 standard deviations across all regression specifications when holding the gender of the supervisor constant. Supporting our interpretation, the results additionally show that subordinates who have a female supervisor self-report about 0.06—0.11 standard deviations more collegial appreciation than those with male supervisors (lower panel of Appendix Table A3).

The final regressions reported in Table 1 adds the controls for the shares of women in industries and occupations to the specifications with workplace fixed effects (Column 7) and firm-year fixed effects (Column 8). The estimated relationships between appreciation and the workplace share of women shrinks marginally in the first case and by half its size in the second. The remaining magnitudes of about 0.25 standard deviations indicate a substantial relationship, however.

We repeat the analysis in Table 1 for the sub-samples of people who have or do not have interactions with workplace outsiders in their job and report the full set of results in Appendix Table A4. We see similar estimates in the bivariate specification and after including the controls for individual traits and workplace size. If anything, the coefficient sizes on the workplace share of women in these specifications are larger in the sub-sample of individuals who lack interactions with outsiders during their workday. However, those who lack such interactions only make up about 15% of our full sample. This means that we simply do not have enough statistical power to get meaningful estimates when including the workplace fixed effects (standard error of 0.57), or firm-year fixed effects (standard error of 0.25). Despite the lack of precision, it is at least comforting the magnitude of the estimates are larger than in the full sample for both these specifications.

Overall, our results show a strong and meaningful relationship between the share of women in the workplace and the appreciation that workers receive from their colleagues. While about half of this relationship can potentially be explained by other factors, we argue that the results support a causal interpretation of the remaining relationship after holding these factors constant. The introduction outlined reasons that such a causal effect might exist. More women in the workforce could lead to more collegial appreciation if female workers give more appreciation to others than men do. Workers of both genders might become more prone to communal behaviors in workplaces with more women if these workplaces take on cultures for personal interpersonal interactions associated with the female gender role.

Heterogeneity analysis

Heterogeneity tests show that the benefits of a corporate culture with more collegial appreciation in a workplace with a larger share of women accrue to (1) women as well as men, and to (2) subordinates as well as supervisors. Table 2 shows the results for each of these sample splits in a separate panel. We report the results for the bivariate regression (Column 1), the specification personal and workplace traits in Column 2, and the specifications combining industry and occupation shares of women with the workplace and firm-year fixed effects (Columns 3 and 4).

DV: Collegial Appreciation (SD)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)		
Panel A: Sex at Birth		Wo	men			Men				
Share of Women	0.73***	0.77***	0.05	0.24***	0.51***	0.59***	0.47**	0.36***		
in the Workplace	(0.03)	(0.03)	(0.18)	(0.08)	(0.03)	(0.03)	(0.20)	(0.09)		
Observations	42 725	42 705	24767	20.071	29.105	29 105	20.200	17 550		
Observations	43,725	45,725	24,707	28,871	38,105	38,105	20,309	17,558		
Panel B: Supervisor Status		Super	visors			Subordinates				
Share of Women	0.57***	0.61***	1.03***	0.41***	0.62***	0.69***	0.35**	0.20***		
in the Workplace	(0.03)	(0.03)	(0.27)	(0.11)	(0.02)	(0.02)	(0.15)	(0.07)		
Observations	25 229	25 220	11 102	11.002	56 400	56 400	22 567	24.022		
Observations	23,328	23,328	11,125	11,902	30,409	30,409	52,307	54,052		
Year Fixed Effects	Х	Х	Х	Х	Х	Х	Х	Х		
Control Variables		Х	Х	Х		Х	х	Х		
Share of Women in Occ.			Х	Х			Х	х		
Share of Women in Ind.			Х	Х			Х	х		
Workplace Fixed Effects			х				х			
Firm-Vear Fixed Effects				v				v		

 Table 2. Heterogeneity Analysis.

Notes: The table reports estimates of the coefficient on the share of women in regressions in which the dependent variable is *Appreciation from colleagues* in standard deviations. Control variables are dummies for sex at birth (only included in the lower panel), education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors clustered at the workplace level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Splitting the sample by sex at birth indicates that men's and women's results are very similar to those in the full sample. An exception is the specification with workplace fixed effects for women, where the coefficient of interest drops to near zero and loses statistical significance.

The large standard error of 0.18 makes the 0.05 estimate statistically undisguisable from the full sample estimate of 0.28. The large reduction in estimate size and clear difference from men's corresponding point estimate nevertheless warrants further comment. Women's smaller estimate derives from a sub-sample of strongly female-dominated (more that 75% women). Temporal changes in the share of women might matter less in these workplaces due to their already high level of appreciation. When we instead restrict the sample to workplaces with less than 75% women, the point estimate comes closer to the full sample (0.22 compared to 0.28, but not significant at conventional levels).

The full-sample results replicate in sub-samples of supervisors and subordinates. People at lower and higher rungs of the career ladder report substantially more appreciation from colleagues when they are employed in workplaces with more women. The relationship is, if anything, stronger for supervisors than for subordinates when we estimate the specifications that include workplace and firm-year fixed effects.

Comparison of industries and occupations

There are strong gender norms associated with industries and occupations that prescribe particular behaviors to workers and influence organizational cultures. They might also mediate the relationship between workplace sex composition and collegial appreciation. Our main result might therefore derive primarily from variation (between workplaces or within firms) in sectors or occupations with certain traits, which would have important policy implications. For example, changing the gender composition of workplaces in male-dominated industries or occupations might not increase collegial appreciation.

We split our sample in three ways to analyze this variation. First, we split the sample into public or private workplaces, and the main results from Table 1 largely replicate in each of these groups (results in Appendix Table A5). Second, we split the sample by 2-digit industry codes and third, we split it by two-digit occupation codes. Dropping codes with fewer than 1,000 respondents leaves 22 industries (86% of the sample) and 18 occupations (97% of the sample). The relatively small remaining samples preclude reliable estimations from the specifications with workplace or firm-year fixed effects.

We instead run the specification with the basic control variables (Column 2, Table 1) in each sub-sample. The results, displayed in Figure 3, indicate sizeable relationships between collegial appreciation and the workplace share of women in most industry and occupation categories. We organize these estimates on the x-axis by the share of women workers in the 2digit industry or occupation category. The vertical lines depict 95% confidence intervals. The estimates vary in size and precision, but most are statistically significant at the 5% level and nearly all are significant at the 10% level. Most coefficient sizes are around 0.4. Interestingly, both women-dominated and male-dominated industries can be found among the larger estimates. These include male-dominated sectors like construction and manufacturing, gender-balanced industries like financial services, and female-dominated ones like education. Appendix Tables A5 and A6 list all estimates.



Figure 3. Relationship between Appreciation from Colleagues and the Share of Women in the Occupation within Industries (Left) and Occupations (Right).

Notes: The table reports split-sample regression results for 2-digit industries and 2-digit occupations. The dependent variable is *Appreciation from colleagues* in standard deviations, and the markers denote the point estimate on the share of women in the workplace. Control variables are dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors are clustered at the workplace level, and vertical lines denote 95% confidence intervals. Appendix Tables A5 and A6 list all point estimates.

Collegial support and conflicts

We have interpreted responses about receiving appreciation for one's work from non-managers as evidence that appreciation from *colleagues* varies strongly according to the share of women in the workplace. In addition to the previous sensitivity analysis in Figure 2, we reflect further on this point by analyzing two survey questions that specifically ask about behaviors among colleagues. One question asks if the respondent has "opportunities to get support and encouragement from colleagues when work feels hard", and the other asks if they are "involved in any conflict with colleagues at work".¹⁰ We standardize the Likert response scales for these two questions and re-run the regression specifications from Table 1 (Table A1 lists the exact response scales for each question).

¹⁰ In Swedish: Har du möjlighet att få stöd och uppmuntran från arbetskamrater, när arbetet känns besvärligt?

The results establish that support from colleagues has a positive relationship with the workplace share of women, but it is weaker and more sensitive to the inclusion of controls relative to the appreciation from colleagues. Appendix Figure A3 shows the relationship graphically and Appendix Table A8 shows regression results. Going from 0% to 100% women is associated with a 0.30 standard deviation higher level of collegial support. This result bolsters our interpretation that the main results reflect a more communal work environment among colleagues in workplaces with more women.

We find either a weak, or no relationship between the share of women and self-reported conflicts with colleagues. Some results even indicate that men self-report more conflicts at work in workplaces with a higher share of women. This might seem contradictory if we believe that appreciation, support, and conflicts are related social behaviors, but intuitive if we consider the higher rates of sexual harassment against men in women-dominated workplaces documented in recent research (Folke and Rickne 2022). Harassment is closely related to conflicts among colleagues, both by forming part of the conflict itself and because the harassing behavior triggers conflict between colleagues (Raver and Gelfand 2005). And while harassment and conflicts are important aspects of the interpersonal work environment, they are very rare relative to appreciation¹¹ and support from colleagues. This explains how men in women-dominated workplaces might experience higher levels of collegial appreciation while, at the same time, a smaller but important sub-set of those men experiences more sexual harassment and conflicts.

Consequences of collegial appreciation

Appreciation from colleagues should be positively associated with worker well-being. Fundamental theories in psychology describe how a sense of feeling connected to and cared for by others is central to human life. For example, Self-determination Theory (Ryan and Deci 2000) describes how this type of connectedness is one of three central social–contextual conditions that enhance people's intrinsic motivation, self-regulation, and well-being (for specific applications to the world of work, see e.g., Van der Broeck et al. 2010). Similarly, the Effort–Reward Imbalance model describes how esteem from colleagues is an important component of reducing stress brought on by a demanding job (Siegrist 1996; Siegrist and Li 2016). Previous empirical analysis bears out the expected correlations between appreciation and various measurements of well-being and stress (Stocker et al. 2010).

¹¹ Only 5% of respondents self-reported having had conflicts with colleagues more frequently than "at some point in the last 12 months."

Figure 4 displays relationships between collegial appreciation and three measures of worker well-being. We regress each well-being measurement on collegial appreciation in standard deviations and plot the coefficient on appreciation together with a 95% confidence interval. The four markers in each graph come from different regression specifications; their respective sets of control variables are listed in the legend below the graphs.





Notes: The figure shows the estimated coefficients from regressions in which the dependent variables are three measurements of self-reported well-being at work and the independent variable is self-reported appreciation from colleagues in standard deviations. Table A1 describes the coding of these variables. Horizonal lines represent 95% confidence intervals. Gray and light gray dots represent estimates from specifications with the right-hand side variables listed in the legend. Control variables are dummies for the categories of the variables listed in Figure 1. end. For the full estimation output, see Appendix Table A9.

More appreciation from colleagues is associated with higher self-reported well-being at work. A 1-standard-deviation higher level of collegial appreciation is associated with about a 0.15-standard-deviation higher level of self-reported job satisfaction and a 0.1-standard-deviation lower level of feelings of *Unease when going to work*. It is also associated with a lower probability of self-reported *Considerations of leaving one's job for health reasons in the last 12 months*. Such leave considerations drop by about 10–15% when self-reported collegial appreciation increases by one standard deviation (1.5 to 2.0 percentage points relative to a variable mean of 0.21).

Discussion and Conclusion

We have shown that people employed in workplaces with a larger share of women experience more appreciation for their work from colleagues. This result comes from nationally representative survey data on experiences of appreciation and an exact continuous measurement of the share of women in each respondent's workplace. Some results point toward a causal relationship. Workers self-report more collegial appreciation if the share of women in their workplace increases over time. Workers hired in the same firm in the same year report more collegial appreciation if their workplace has a larger share of women (for example across local offices belonging to the same large bank). Extending the analysis to discuss potential impacts of appreciation showed that appreciation correlates positively with several self-reported measurements of well-being.

There are several potential reasons why workers in workplaces with more women selfreport more appreciation. One is, of course, that women colleagues express more appreciation than male colleagues, an interpretation that aligns with a large literature on gender gaps in expectations of women's communal behavior (Eagly 2013, Eagly et al. 2020, Hsu et al. 2021). Another reason might be that women and men both behave differently when the share of women is high. This could happen when expected behaviors associated with women spill over to workplace culture. Just as workplaces strongly dominated by men may take on a culture of "masculinity contests" characterized by displays of toughness, a rejection of emotional displays, and a lack of civility (Berdahl et al. 2018), workplaces dominated by women may take on communal cultures of collegial appreciation and support.

Our results suggest that firms could improve corporate culture by hiring more women. Such impacts might take time to materialize, however, and might come at some cost to the women employees. Impacts could take time to materialize if women's presence affects the work climate by slowly changing benchmarks for the expected social interactions among all employees. A naïve expectation that women will rapidly transform toxic work cultures strongly male-dominated organizations might lead to new female hires who will fare badly as gender minorities in these work contexts (Born et al. 2022, Karpowitz et al. forthcoming). Notably, positive impacts from hiring women is conditional on the current social situation of strong socialization on communal traits by gender, but would not necessarily extend to a future where improved gender equality might soften these expectations.

Broadening the discussion further, recent research has discussed how women's inclusion in the paid labor force affects economic growth via an improved allocation of human capital (Hsieh et al. 2019). Our results suggest an additional channel. More women in the labor force may increase productivity via, for example, improved job satisfaction and reduced turnover as the social interactions of workplaces become more prone to displays of collegial appreciation. Such potential links between gender equality, positive organizational environments, and firm outcomes may be relevant directions for future research in the lab, with observational data, or at the macro level.

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Appendix: Workplace Sex Composition and Appreciation at Work

Variables	Coding	Mean (SD)
Appreciation	Z-score variable based on the Likert response scale for the question:	(52)
from	Does it happen that other people show appreciation for something you have	2.99
colleagues	done at work (for example colleagues, patients, customers, clients)?	(1.17)
	1 = Not at all, rarely in the last 3 months	N= 81,580
	2 = A couple of days per month (1 day of 10)	
	3 = One day per week (1 day of 5)	
	4 = A couple of days per week (1 day of 2)	
	5 = Every day	
Zero contact	Binary indicator (coding below) based on the question:	0.17
with outside	Does your work involve interactions with people who are not employed at	(0.37)
groups in the	your workplace? (such as patients, customers, clients)?	N=73,600
job	I = Not at all	
	0 = A little (perhaps 1/10 of the time); About ¹ / ₄ of the time; Half of the time;	
<u> </u>	About ³ / ₄ of the time; Almost all the time	2.10
Support from	Z-score variable based on the Likert response scale for the question:	3.19
Colleagues	Do you have opportunities to get support and encouragement from colleagues	(0.72)
	1 – Never	N=80,099
	I = Never 2 = Mest of the time not	
	2 - Most of the time hot	
	$\Delta = A_{\rm lways}$	
Conflicts with	Z-score variable based on the Likert response scale for the question:	1 56
Colleagues	Are you involved in any conflict with colleagues at work?	(0.99)
contragatos	1 = Not at all, rarely in the last 12 months	N=81.221
	2 = At some point in the last 12 months	
	3 = A couple of times in the last 3 months	
	4 = A couple of days per month (1 day out of 10)	
	5 = One day per week (1 day out of 5)	
	6 = A couple of days per week (1 day out of 2)	
	7 = Every day	
Female	Is your closest manager male or female?	0.40
supervisor	1 = Female	N=62,522
	0 = Male	
Supervisor	Does your job involve leading or delegating the work of others?	0.31
	1 = Yes; $0 = $ No	N=81,487
Job	Z-score variable based on the Likert response scale for the question:	4.01
satisfaction	I am, generally speaking	(1.01)
	1 = very dissatisfied with my job	N=81,153
	2 = dissatisfied with my job	
	3 = neither satisfied nor dissatisfied with my job	
	4 = satisfied with my job	
	5 = very satisfied with my job	1.70
Unease when	Z-score variable based on the Likert response scale for the question:	1.72
going to work	Do you leel unease when going to work?	(1.04)
T	[same categories as conegial appreciation]	N=80,810
Leave	in the last year, have you considered changing jobs or becoming self-	0.21
considerations	employed for health reasons? $1 - N_{22} = N_{22}$	(0.41)
	I = I es; U = INO	IN=03,040

Table A1. Coding and Summary Statistics for Work Environment Survey Questions.

Notes: For variables that are standardized in the empirical analysis, the table shows means based on the underlying ordinal variable.

		Survey samp	le	Employed Population (18–65)
	Coding	Average	Share	Share
	6	appreciation from		
		colleagues		
Share of women in the	Share of women after excluding the			
workplace	respondent			
0—25%		2.76	0.27	0.34
26—50%		2.88	0.21	0.20
51—75%		3.03	0.23	0.21
76—100%		3.31	0.29	0.25
Sex at birth				
Women		2.88	0.54	0.50
Man		3.10	0.46	0.50
Education level		2.00	0.40	0.10
Primary	3 binary indicators, one for each	2.90	0.12	0.13
Secondary	education level	3.01	0.47	0.49
Tertiary		2.98	0.41	0.38
Birth region		2.09	0.02	0.07
Sweden	3 binary indicators, one for each	2.98	0.92	0.87
Europe (excl. Sweden)	birth region	3.02	0.06	0.07
Outside of Europe		3.09	0.02	0.06
Age				
16–35	3 binary indicators, one for each	3.11	0.28	0.36
36–50	age bracket	2.93	0.40	0.36
51-64		2.92	0.33	0.27
Family composition				
Married/partner with	4 binary indicators, one for each	2.94	0.59	0.52
children	combination of civil and parental			
Married/partner	status. Children include any child	3.03	0.05	0.07
without children	still living in the household,			
Single with children	regardless of age. Partner refers to	3.02	0.14	0.15
Single, no children	cohabitants. Single includes	3.08	0.21	0.26
	divorcees or widows/widowers.	0100	0.21	0.20
Workplace size				
5–10	4 binary indicators, one for each	3.12	0.10	0.11
11–25	size bracket	3.05	0.17	0.17
26-100		2.98	0.31	0.29
101+		2.93	0.42	0.43
Observations		81 550	0.72	51 037 101
Observations		01,550		51,057,101

Table A2. Summary Statistics: Analysis Sample vs. the Population.

DV: Collegial Appreciation (SD)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Share of Women	0.70***	0.69***	0.50***	0.28***	0.32*	0.42***	0.29	0.20***
in the Workplace	(0.02)	(0.03)	(0.03)	(0.05)	(0.19)	(0.05)	(0.19)	(0.07)
Log Wage		-0.12***	-0.08***	-0.10***	-0.07**	-0.12***	-0.04	-0.08**
		(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Observations	40,932	40,932	40,932	40,932	27,771	33,550	27,771	33,550
Share of Women	0.60***	0.57***	0.42***	0.17***	0.19	0.37***	0.18	0.16**
in the Workplace	(0.02)	(0.02)	(0.03)	(0.04)	(0.15)	(0.05)	(0.15)	(0.06)
Female Supervisor		0.11***	0.09***	0.10***	0.07***	0.07***	0.06***	0.06***
		(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Observations	62,701	62,701	62,701	62,701	37,872	39,051	37,872	39,051
Year Fixed Effects	х	х	х	х	х	х	х	х
Control Variables		Х	Х	Х	Х	Х	Х	Х
Share of Women in Occ.			Х				х	х
Share of Women in Ind.				х			х	Х
Workplace Fixed Effects					х		х	х
Firm-Year Fixed Effects						Х		Х

Table A3. Sensitivity Analysis, Controls for Wage and Female Supervisor.

Notes: Control variables are dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors clustered at the workplace level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A4. Sensitivity Analysis: Sample Split by Zero or Non-Zero Interactions with Outside Groups in the Job.

DV: Collegial Appreciation (SD)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Interactions with Outside Groups in the job:		Zero Inter	actions		N	on-Zero I	nteraction	ns
Share of Women	0.67***	0.72***	0.76	0.32	0.52***	0.59***	0.18	0.24***
in the Workplace	(0.05)	(0.06)	(0.57)	(0.24)	(0.02)	(0.02)	(0.13)	(0.06)
Observations	12,072	12,072	5,571	4,721	61,775	61,775	35,302	37,773
Year Fixed Effects	х	х	х	х	х	х	х	х
Control Variables		х	х	х		Х	х	Х
Share of Women in Occ.			х	х			х	Х
Share of Women in Ind.			х	х			х	Х
Workplace Fixed Effects			х				х	
Firm-Year Fixed Effects				х				х

Notes: The table reports estimates of the coefficient on the share of women in regressions in which the dependent variable is *Appreciation from colleagues* in standard deviations. Control variables are dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. The sample is split by whether the respondent has zero interactions with outside groups in their job or not. Standard errors clustered at the workplace level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

DV: Collegial Appreciation (SD)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	
Sector of Work		Priv	vate		Public				
Share of Women	0.59***	0.61***	0.32*	0.38***	0.68***	0.70***	0.16	0.21***	
in the Workplace	(0.02)	(0.03)	(0.16)	(0.10)	(0.03)	(0.03)	(0.17)	(0.06)	
Observations	47,021	47,021	25,813	18,034	34,809	34,809	25,442	32,903	
Year Fixed Effects	Х	Х	х	Х	Х	Х	Х	Х	
Control Variables		х	х	Х		х	х	х	
Share of Women in Occ.			х	Х			х	х	
Share of Women in Ind.			х	х			х	Х	
Workplace Fixed Effects			х				Х		
Firm-Year Fixed Effects				х				х	

Table A5. Sensitivity Analysis, Private and Public Sector.

Notes: Control variables are dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors clustered at the workplace level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Code	Name	Estimate	Std. Error	Share Women
45	Construction	0.44	0.16	0.10
60	Land transport; transport via pipelines	0.09	0.19	0.18
20	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0.81	0.34	0.18
28	Manufacture of fabricated metal products, except machinery and equipment	0.04	0.21	0.19
29	Manufacture of machinery and equipment n.e.c.	0.44	0.21	0.21
34	Manufacture of motor vehicles, trailers and semi-trailers	0.16	0.28	0.21
50	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	0.34	0.19	0.26
72	Computer and related activities	0.46	0.19	0.32
51	Wholesale trade and commission trade, except of motor vehicles and motorcycles	0.28	0.1	0.36
15	Manufacture of food products and beverages	0.45	0.2	0.38
70	Real estate activities	0.05	0.15	0.41
63	Supporting and auxiliary transport activities; activities of travel agencies	0.39	0.17	0.42
64	Post and telecommunications	0.39	0.16	0.43
74	Other business activities	0.26	0.08	0.49
92	Recreational, cultural and sporting activities	0.16	0.15	0.57
75	Public administration and defense; compulsory social security	-0.06	0.07	0.57
65	Financial intermediation, except insurance and pension funding	0.36	0.22	0.61
91	Activities of membership organizations n.e.c.	0.31	0.18	0.63
55	Hotels and restaurants	-0.13	0.18	0.67
52	Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	0.33	0.09	0.68
80	Education	0.36	0.07	0.78
85	Health and social work	0.21	0.09	0.87

Table A6. Bivariate Relationships within 2-digit Industrial Sectors.

Notes: The regression run corresponds to the regression in column 2 of Table 1, which includes the following controls: year fixed effects, dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors clustered at the workplace level are reported in parentheses. Bold text for the estimate and standard error indicate p<0.05.

Code	Name	Estimate	Std. Error	Share Women
12	Corporate managers	0.35	0.08	0.38
21	Physical, mathematical and engneering science professionals	0.25	0.09	0.27
22	Life science and health professionals	1.03	0.16	0.71
23	Technical professionals	0.45	0.11	0.67
24	Other professionals (business, legal, social science, public service, administration etc.)	0.24	0.07	0.62
31	Physical and engineering science associate professionals	0.36	0.08	0.20
32	Life science and health professionals	0.88	0.15	0.88
33	Teaching associate professionals	-0.26	0.16	0.91
34	Other associate professionals	0.32	0.05	0.54
41	Office clerks	0.3	0.06	0.71
42	Customer services clerks	0.32	0.14	0.86
51	Personal and protective service workers	0.24	0.07	0.85
52	Models, salespersons and demonstrators	0.14	0.09	0.67
71	Extraction and building trades workers	0.42	0.1	0.05
81	Stationary-plant and related operators	0.14	0.29	0.10
82	Machine operators and assemblers	0.37	0.12	0.27
83	Drivers and mobile-plant operators	0.09	0.15	0.08
91	Sales and services elementary occupations	0.45	0.13	0.74

Table A7. Bivariate Relationships within 2-digit Occupations

Notes: The regression run corresponds to the regression in column 2 of Table 1, which includes the following controls: year fixed effects, dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors clustered at the workplace level are reported in parentheses. Bold estimate and standard error indicate ** p<0.05.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DV: Collegial Support (SD)								
Share of Women	0.32***	0.22***	0.18***	0.13***	0.24**	0.21***	0.24**	0.08
in the Workplace	(0.01)	(0.02)	(0.02)	(0.03)	(0.11)	(0.04)	(0.11)	(0.05)
Observations	80,917	80,917	80,917	80,917	51,124	50,419	51,124	50,419
))))	- 1	, -	- 1	, -
DV: Collegial Conflicts (SD)								
Share of Women	0.06***	0.14***	0.11***	0.03	0.10	0.05	0.11	-0.07
in the Workplace	(0.02)	(0.02)	(0.02)	(0.04)	(0.13)	(0.04)	(0.13)	(0.06)
Observations	81,471	81,471	81,471	81,471	51,568	50,820	51,568	50,820
Year Fixed Effects	X	X	X	X	X	X	X	x
Control Variables		х	х	х	х	х	х	х
Share of Women in Occ.			х				х	х
Share of Women in Ind.				Х			х	х
Workplace Fixed Effects					х		х	х
Firm-Year Fixed Effects						Х		х

 Table A8. Support from Colleagues; Conflicts with Colleagues.

Notes: Control variables are dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors clustered at the workplace level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
DV: Job Satisfaction (SD))									
Share of Women	0.15***	0.16***	0.16***	0.16***	0.16***	0.16***	0.16***	0.16***		
in the Workplace	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)		
Observations	81,401	81,401	81,401	81,401	51,468	50,754	51,468	50,754		
DV: Unease When Going to Work (SD)										
Share of Women	-0.09***	-0.10***	-0.10***	-0.11***	-0.11***	-0.11***	-0.11***	-0.11***		
in the Workplace	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)		
Observations	81,059	81,059	81,059	81,059	51,220	50,511	51,220	50,511		
DV: Leave Consideration	s (1/0)									
Share of Women	-0.01***	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***		
in the Workplace	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		
Observations	63,217	63,217	63,217	63,217	37,577	38,611	37,577	38,611		
Year Fixed Effects	Х	Х	Х	Х	Х	Х	Х	Х		
Control Variables		х	х	х	х	х	х	х		
Share of Women in Occ.			х				х	х		
Share of Women in Ind.				х			х	х		
Workplace Fixed Effects					х		х	х		
Firm-Year Fixed Effects						Х		Х		

Table A9. Analysis of Well-Being at Work.

Notes: Job satisfaction is measured with the question "Do you feel very dissatisfied or very satisfied with your job?" answered on a 5-point scale ranging from "Very satisfied, completely agree" to very "Very dissatisfied, completely agree." Unease when going to work is measured with responses to the question "Does it happen that you feel unease going to work?" answered on a 5-point scale ranging from "Not at all, seldom the last 3 months" to "Every day." Both variables are transformed to Z-scores. Leave considerations is a dummy for having considered leaving one's job in the last 12 months due to health reasons. Control variables are dummies for sex at birth, education (3 categories), (global) region of birth (3 categories), age (3 categories), family situation (4 categories), and workplace size (5 categories). Categories are listed in Figure 1. Standard errors clustered at the workplace level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.



Figure A1. Distribution of the Share of Women in the Workplace.



Figure A2. Appreciation at Work and the Share of Women in the Occupation or Industry; Sample of Respondents with Zero Contact with Outside Groups in the Job.

Notes: The figure shows binned averages of a standardized categorical variable for self-reported appreciation by non-managers in the workplace. Each sub-sample of men and women is split into 100 equally sized bins of the X-variable. Occupation is measured by the 3-digit SSYK96-code and industry by the 5-digit SNI-code, and we calculate the share of women in each occupation or industry using population-wide register data. The data consists of 13 pooled cross-sections of the Swedish Work Environment Survey for individual who state that they have no contact with outside groups in their job (1995–2019), N(Women): 6,822; N(Men): 5,198.



Figure A3. Support from Colleagues and the Share of Women in the Workplace.

Notes: The figure shows binned averages of a standardized categorical variable for self-reported support from colleagues. Each sub-sample of men and women is split into 100 equally sized bins of the X-variable. The data consists of 13 pooled cross-sections of the Swedish Work Environment Survey (1995–2019), N(Women): 43,233; N(Men): 37,713.