

Same-gender supervisors protect women's leadership aspirations after negative performance feedback

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Abstract

Two studies examined how the gender of a workplace supervisor can affect a woman's response to performance evaluations and also her professional advancement aspirations. In Study 1, employed women reviewed a performance evaluation in which feedback was manipulated to reflect one of two stereotypes of women (high in warmth or low in competence). Findings showed that participants were more likely to attribute negative (i.e., low competence) feedback from men supervisors to gender biases than the same feedback from women supervisors. There was no effect of supervisor gender when the feedback was positive (i.e., high warmth) or neutral. In Study 2, negative feedback from men supervisors, regardless of evaluative dimension (competence or warmth) resulted in women reporting decreased professional aspirations. This relationship was mediated by women's attribution of supervisor feedback to gender biases. Together, these findings suggest that same-gender supervisors can potentially buffer women's long term professional aspirations after a discouraging performance review.

1 | INTRODUCTION

Women face a number of barriers to advancement in the workplace, especially if they aspire to leadership roles (Sandberg, 2013). A key barrier comes in the form of performance feedback from workplace supervisors (Cecchi-Dimeglio, 2017; Silverman, 2015). In general, women are more likely to receive negative performance evaluations than men (MacNell, Driscoll, & Hunt, 2015; Snyder, 2014), which may discourage their attempts to advance within the organization. More problematic, the accumulating evidence that gender biases underlie these evaluations may further impede women's motivation. Studies of women's experiences in the workplace show that even when women and men perform equally well, women are rated as less promotable (Roth, Purvis, & Bobko, 2010) and receive fewer rewards for their performance than men do, including less pay and promotions (Joshi, Son, & Roh, 2015; Lyness & Heilman, 2006). These effects are more pronounced in men-dominated fields (Joshi et al., 2015) and when men are the ones providing the ratings (Bowen, Swim, & Jacobs, 2000).

Because of the potential for gender biases to influence performance evaluations, women face the difficult task of having to determine the motivations behind the feedback that they receive, especially from men supervisors. The feedback could be an accurate assessment of their performance and therefore useful in professional development, or it could be that they are being judged in part because of their gender

(Crocker & Major, 1989). In the long run, the psychological toll of negative evaluations and the ensuing interpretational uncertainty may diminish women's motivation to advance in the workplace (Ilies, DePater & Judge, 2007; Vallerand & Reid, 1988). This analysis raises the question of whether there are strategies that can be leveraged to buffer women's leadership aspirations against negative performance feedback. In the current work, we examine whether, all else being equal, having a same-gender supervisor can attenuate the adverse effect of negative feedback on women's workplace ambitions. If so, this would suggest that having more women supervisors, who deliver performance evaluations—both positive and negative—can be a way to bolster the leadership pipeline of women in the workplace.

1.1 | How women interpret feedback from men versus women supervisors

Whether performance feedback comes from a man or a woman supervisor matters because it determines the types of attributions that are available to women for *why* they received the feedback (Crocker & Major, 1989; Crocker, Voelkl, Testa, & Major, 1991). In cross-gender interactions in which a woman receives feedback from a man supervisor, there are two possible explanations for the feedback that are readily available: She can attribute the feedback to her personal attributes (e.g., her individual characteristics and behavior; the quality of her

performance), or she can attribute the feedback to the fact that she is a woman (e.g., influence of gender biases held by the man supervisor). In contrast, when the feedback comes from another woman, attributing the feedback to gender becomes less viable as a reasonable explanation. The above analyses suggest that feedback from men supervisors, whether positive or negative, is open to different explanations and creates uncertainty for women seeking to make accurate inferences. In the case of positive feedback, a woman may, on the one hand, conclude that her behavior and contributions have earned her the encouraging feedback. However, she may alternatively conclude that the positive feedback is because she is a woman. For example, the supervisor has lower expectations for his women subordinates, or the supervisor does not want to appear prejudiced against women (Biernat & Manis, 1994; Glick & Fiske, 1996; Major et al., 2016). In the case of negative feedback from a man supervisor, a woman can similarly attribute the feedback to her performance or to her gender (i.e., that the man supervisor is biased against women or his judgment is influenced by stereotypes of women, Bowen et al., 2000; Major, Quinton, McCoy, & Zanna, 2002).

Even though multiple attributions are available to women for both positive and negative feedback from men supervisors, past research suggests that people tend toward self-serving biases in their attributions (e.g., claim responsibility for their successes but look to external causes for their failures, Bradley, 1978). This logic suggests that in the workplace, women may be more motivated to attribute negative rather than positive performance feedback to their gender (Mezulis, Abramson, Hyde, & Hankin, 2004). Thus, even though multiple attributions are available to women in cross-gender interactions for both positive and negative feedback, we expect that women will be more likely to make attributions to gender when the feedback from men supervisor is negative than when it is positive.

In contrast, in same-gender interactions, there is a clearer attribution for the performance feedback whether it is positive or negative—the woman's personal characteristics or the quality of her performance. While gender bias is possible even in same-gender interactions, it is a more remote explanation (Inman & Baron, 1996; Mendes, Major, McCoy, & Blascovich, 2008). Thus, compared to cross-gender interactions, we suggest that in same-gender interactions women are less likely to make attributions to their gender regardless of whether the feedback is positive or negative. This suggests that negative feedback from a same-gender supervisor can provide valuable information to women about changes they need to make in order to progress in their career. In the case of positive feedback from a same-gender supervisor, a woman may be encouraged to pursue advancement. In contrast, when a same-gender supervisor provides negative feedback, a woman may conclude that there are areas of weaknesses that need to be addressed prior to pursuing advancement.

1.2 | How attributions for performance feedback shape professional aspirations

Past research suggests that the attributions individuals make for negative feedback from outgroup members have important psychological

consequences. This is particularly true for women and minorities who regularly receive feedback from outgroup members who may potentially harbor group-based biases. In experimental research, African American students who received negative or threatening feedback had decreased test performance and reported greater academic disengagement compared to White students (Major, Spencer, Schmader, Wolfe, & Crocker, 1998; Walton & Cohen, 2007). Related research showed that the removal of bias as a potential explanation for negative feedback from an outgroup member can change attributions and subsequent performance. Specifically, when negative feedback from White teachers was framed as constructive criticism, African American students showed higher academic performance than when the teachers' feedback was framed as evidence of racial bias (Yeager et al., 2014).

Just as African American students experience negative stereotypes about their academic abilities, women face negative stereotypes about their leadership potential (Heilman, 2001). Extrapolating from the mechanisms demonstrated in research among African American students in the academic domain, we suggest that similar processes may explain the depression of women's interest in pursuing professional opportunities in the workplace. Because of the historical and current underrepresentation of women in leadership roles in the workplace, on average, women are likely to have a man (vs. woman) supervisor. When women receive negative feedback from a man supervisor, bias becomes an available attribution in addition to individual characteristics. In this situation, when women attribute negative feedback to potential gender biases, they may subsequently feel greater disengagement from the workplace and be less motivated to pursue opportunities for professional development and to seek out leadership roles. This process will, in turn, contribute to the persistent gender gap in leadership in the workplace in a self-perpetuating cycle.

1.3 | Negative versus positive feedback and stereotype (in)consistency

Person perception research suggests that people are evaluated along two main dimensions: competence and warmth (Fiske, Cuddy, Glick, & Xu, 2002). Stereotype of groups fall along these same dimensions. Traditionally, relative to men, women have been stereotyped as higher in warmth but lower in competence (Eagly & Mladinic, 1989). Thus, the negative feedback a woman receives can come in one of two forms—stereotype consistent (low in competence) or stereotype inconsistent (low in warmth). In the current work, we examine whether the attributions that women make after receiving negative feedback are influenced by whether the feedback is consistent or inconsistent with gender stereotypes. This potential moderator is important because past research shows that exposing women to gender stereotypes decreases their subsequent leadership aspirations (Davies, Spencer, & Steele, 2005). Furthermore, the tendency to view women as warm but not competent is problematic because leadership continues to be more strongly associated with competence than warmth (Cuddy, Glick, & Beninger, 2011; Eagly & Karau, 2002). Therefore, in this research we test whether women who receive negative performance evaluations that are consistent with gender stereotypes (i.e., low in competence)

feel more discouraged from wanting to pursue professional advancement opportunities than women who receive negative performance evaluations which are inconsistent with gender stereotypes (i.e., low in warmth).

1.4 | Research overview

In two studies of professional women, we examine whether a same-gender supervisor, relative to an opposite-gender supervisor, can reduce attributions to gender after negative feedback and subsequently protect women's leadership aspirations. Study 1 examines women's attributions after being asked to consider performance evaluations in which the feedback was consistent with stereotypes of women but varied in whether the feedback was positive (high in warmth), negative (low in competence), or neutral (control condition). We predict that women will be more likely to attribute negative (low in competence) feedback to their gender and believe that the supervisor endorses gender stereotypes when the feedback is from a man supervisor than from a woman supervisor. In addition, we hypothesize that beliefs about gender stereotype endorsement are mediated by attributions to gender when negative feedback is received from a man supervisor but not from a woman supervisor. In Study 2, we examine whether the predictions from Study 1 will hold when the performance feedback that women receive challenges, rather than confirms, gender stereotypes (e.g., low warmth and high competence). Also in Study 2, we test whether reactions to feedback delivered by same or opposite gender supervisors can influence the desire to pursue leadership roles and professional development opportunities. Again, we expect that negative feedback from men (but not women) supervisors will lead to a decrement in these professional aspirations among women. Lastly, we test whether the relationship between supervisor gender and professional aspirations among women who receive negative feedback are mediated by attributions of the feedback to their gender.

2 | STUDY 1 METHOD

2.1 | Participants

Three-hundred and six women who reported that they were employed either full- or part-time were recruited via Amazon Mechanical Turk. Power analysis determined that this sample size would provide at least 80% power to detect an effect size consistent with typical published effects in social and personality psychology (f of .21 or d of .43; Richard, Bond, & Stokes-Zoota, 2003). Because our hypotheses are predicated on culturally normative gender relations, we restricted the study to women who were born in the United States (Siy & Cheryan, 2013). Participants were told that the study was ostensibly about men and women's evaluations of different work-related performance review formats. All those interested in the study completed a brief questionnaire to determine whether they met study requirements; those who qualified for the study proceeded to the main survey.

Of the 306 women recruited for the study, 77.1% were White, 56.2% had a bachelor's degree or higher, and 59.3% of whom had

annual incomes of \$50,000 per year or less. Ages ranged from 19 to 63 years, with the average age at 35.21 years ($SD = 11.52$). Years of work experience ranged from 1 to 45, with average years of work experience of 15.19 ($SD = 10.49$). In terms of political ideology, there were 15.7% leaning conservative/conservative, 24.3% moderate, and 59.8% leaning liberal/liberal.

One participant was removed from our analysis for taking more than 3 days to complete the study and one other participant was removed for indicating that he was a man in the demographics section. In addition, 22 participants failed a manipulation check question which asked them to identify the gender of the supervisor who purportedly provided the performance evaluation. The final sample on which we conducted our analyses consisted of 282 women.

2.2 | Experimental design and procedures

Study 1 featured a 2 (gender of supervisor: man/woman) by 3 (type of feedback given: positive/neutral/negative) experimental design. Participants were asked to consider a situation in which they were about to receive a performance evaluation from a supervisor—a common experience for the employed women who were participants in our study. Participants were told that the supervisor was either a man (a gender outgroup member for participants) or a woman (a gender ingroup member).

All participants saw the following prompt in which the gender of the supervisor was manipulated: *Please imagine the following situation: You are a woman who has been at your current job for six months and it is time for a performance review. Your supervisor, who is a (man/woman), will be evaluating you. The performance review contains ratings of your performance in six areas, all of which are important for success in your role. The performance review is used to identify your areas of strength or weakness. Most employees receive ratings of "Meets Expectations."*

Participants then had a chance to read and evaluate a completed performance review. The performance review contained ratings in six areas which are common in workplace performance evaluations. Two of the areas were competence-based (operationalized as analytical skills and technical competence), two of the areas were warmth-based (operationalized as interpersonal skills and teamwork), and two of the areas were general workplace behaviors less closely aligned with gender stereotypes (professionalism and reliability) (see Appendix for a sample review).

The experimental manipulation of feedback valence (positive, control, negative) was embedded into the supervisor's ratings in the different areas of evaluation: (a) Positive feedback ("exceeds expectations") in the traditionally feminine domain of interpersonal warmth with neutral feedback ("meets expectations") in all other areas, (b) A control condition which featured neutral feedback ("meets expectations") in all areas, and (c) Negative feedback ("below expectations") in the traditionally masculine domain of technical and analytical competence with neutral feedback ("meets expectations") in all other areas.

Participants answered questions about their reaction to the performance review, including their perceptions of the review, of the supervisor and of the company. Lastly, they answered demographic questions and were debriefed.

2.3 | Dependent variables

All items were measured on a 1–5 scale, with 1 being *Not at all* and 5 being *Very much*.

2.3.1 | Attributions of feedback to gender

The two attributions of feedback to gender items measured how likely participants were to attribute the feedback that they had received to their gender: “The supervisor’s feedback was based on the fact that I am a woman” and “The supervisor’s feedback was based on the general attributes of women.” The two items were strongly correlated, $r(278) = .83$, $p < .01$ and combined to form an index of attributions of feedback to gender.

2.3.2 | Beliefs that the supervisor endorses gender stereotypes of women

Endorsement of gender stereotypes measured how likely participants were to believe that the supervisor endorsed gender stereotypes of women as measured by two items: “The supervisor thinks that all women are high in interpersonal skills.” and “The supervisor thinks that all women are low in analytical skills.” These items were also highly correlated, $r(279) = .61$, $p < .01$ and combined to form an index of perceived endorsement of gender stereotypes.

3 | STUDY 1 RESULTS

The data were analyzed using two-way (gender of supervisor by valence of feedback) between-subjects analyses of variance (ANOVA).

3.1 | Do attributions to gender depend on supervisor gender and feedback valence?

To begin, there was a significant main effect for the gender of the supervisor, $F(1,275) = 5.63$, $p = .018$, $\eta_p^2 = .02$, 95% CI [.0004; .0637] such that feedback from men supervisors, $M = 2.36$, $SEM = .10$, was attributed to gender more than feedback from women supervisors, $M = 2.05$, $SEM = .09$. There was also a main effect of feedback valence, $F(2,275) = 4.52$, $p = .012$, $\eta_p^2 = .03$, 95% CI [.0016; .0779] such that attributions to gender differed significantly based on feedback valence. Pairwise comparisons with a Bonferroni correction to maintain an alpha level of .05 show that negative feedback ($M = 2.42$, $SEM = .11$) was attributed to gender significantly more than neutral feedback ($M = 1.94$, $SEM = .11$), $p = .01$. There were no significant differences between responses to neutral and positive feedback ($M = 2.25$, $SEM = .11$), $p = .177$, or between negative and positive feedback, $p = .919$.

Consistent with our predictions, there was a significant supervisor gender by type of feedback interaction on attributions of feedback to gender, $F(2,275) = 5.51$, $p = .004$, $\eta_p^2 = .04$, 95% CI [.0041; .0879].

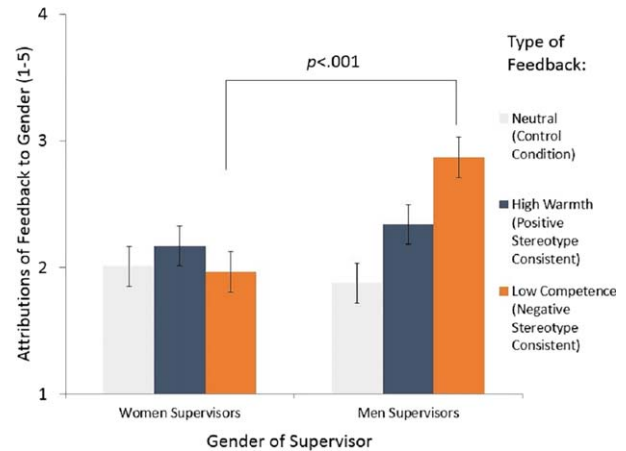


FIGURE 1 Effect of supervisor gender and feedback valence on attributions of feedback to gender (Study 1)

When the feedback was negative, participants were significantly more likely to attribute the feedback to their gender when the supervisor was a man, $M = 2.87$, $SEM = .16$, than when the supervisor was a woman, $M = 1.97$, $SEM = .16$, $F(1,275) = 16.02$, $p < .001$, $\eta_p^2 = .06$, 95% CI [.0144; .1146] (Figure 1). However, when the feedback was positive, there were no differences in how women interpreted the feedback from men versus women supervisors, $F(1,275) = .54$, $p = .463$. Similarly, when the feedback was neutral, there were also no differences in how women interpreted the feedback from men versus women supervisors, $F(1,275) = .34$, $p = .560$.

3.2 | Do beliefs that the supervisor endorses gender stereotypes depend on supervisor gender and feedback valence?

Regarding beliefs that the supervisor giving the evaluation endorsed gender stereotypes of women, there was no main effect of supervisor gender, $F(1,275) = 1.99$, $p = .159$. That is, participants believed that overall, neither men nor women supervisors were more likely to endorse gender stereotypes of women. However, there was a main

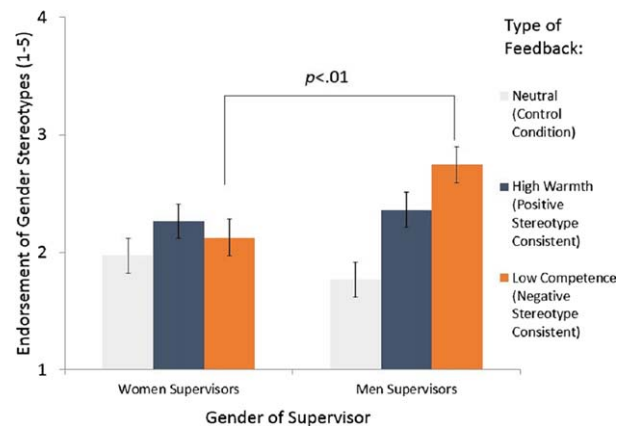


FIGURE 2 Effect of supervisor gender and feedback valence on perceptions of supervisor’s endorsement of gender stereotypes (Study 1)

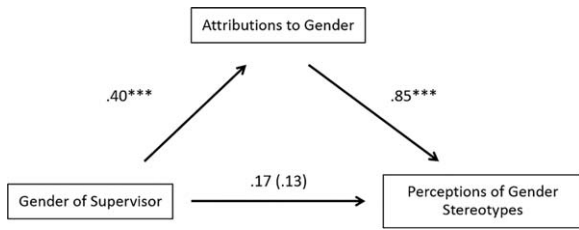


FIGURE 3 Mediation for negative feedback (Study 1)

effect of feedback valence, $F(2,275) = 7.39, p = .001, \eta_p^2 = .05, 95\% \text{ CI } [.0098; .1053]$. Post hoc analyses with a Bonferroni correction to maintain .05 alpha levels showed that both positive ($M = 2.31, SEM = .11$) and negative ($M = 2.43, SEM = .11$) feedback were more likely to lead to beliefs that the supervisor endorsed gender stereotypes than neutral feedback ($M = 1.87, SEM = .11$), $p = .013$ and $p = .001$, respectively. There were no differences in beliefs between the positive and negative feedback conditions, $p = 1.00$.

Importantly, there was a significant feedback valence by gender of supervisor interaction for women's beliefs that the supervisor endorsed gender stereotypes of women, $F(2,275) = 3.90, p = .021, \eta_p^2 = .03, 95\% \text{ CI } [.0003; .0714]$. When the feedback was negative, participants were significantly more likely to believe that the supervisor endorsed gender stereotypes of women when the supervisor was a man, $M = 2.75, SEM = .15$, than when the supervisor was a woman, $M = 2.11, SEM = .15, F(1,275) = 8.83, p = .003, \eta_p^2 = .03, 95\% \text{ CI } [.0035; .0811]$ (Figure 2). However, when the feedback was neutral [$F(1,275) = .87, p = .352$] or positive [$F(1,275) = .19, p = .660$], there were no differences in the degree to which women believed that men or women supervisors endorsed gender stereotypes of women.

3.3 | Mediation analyses

We proposed that attributions of feedback to the participant's gender mediated the relationship between the gender of the supervisor and women's beliefs that the supervisor endorsed gender stereotypes of women but only for negative feedback, not positive or neutral feedback (see Figure 3). We ran separate mediation analyses within each of the feedback valence conditions to test for indirect effects of supervisor gender on beliefs that the supervisor endorses gender stereotypes with 5,000 bootstrap samples. Consistent with our prediction, we found that in the negative feedback condition, the relationship between supervisor gender and perceptions that the supervisor

endorsed gender stereotypes was mediated by attributions of the feedback to gender. As Figure 3 illustrates, the standardized regression coefficient between supervisor gender and attributions was statistically significant, as was the standardized regression coefficient between attributions for feedback and endorsement of gender stereotypes. We tested the significance of this indirect effect using bootstrapping procedures. Unstandardized indirect effects were computed for 5,000 bootstrapped samples, and the bootstrapped 95% confidence interval (-1.1846 to $-.4344$) for the indirect effect did not include zero, suggesting that attributions to gender mediated the relationship between gender of the supervisor and women's beliefs that their supervisor endorsed gender stereotypes of women. In the positive ($-.5592$ to $.2380$) and neutral ($-.1871$ to $.3220$) feedback conditions, the bootstrapped 95% confidence interval for the indirect effect did include zero, suggesting that the mediation does not hold when the feedback is either positive or neutral (see Table 1).

4 | STUDY 1 DISCUSSION

In summary, Study 1 examined responses to performance feedback from work supervisors which was either consistent with gender stereotypes of women as being high in warmth (positive) or as low in competence (negative), with neutral feedback as a control condition. We found that women were more likely to attribute negative (but not neutral or positive) feedback to their gender and believe that the supervisor endorsed gender stereotypes of women when the supervisor was a man versus a woman. We also found that in the negative feedback condition only, the effect of supervisor gender on beliefs about the supervisor's endorsement of gender stereotypes was mediated by attributions of feedback to gender.

In Study 1, our goal was to evaluate whether women's reactions to positive versus negative feedback was moderated by supervisor gender, and to compare this to a control condition. However, because feedback valence was confounded with stereotype content, we were unable to determine whether it was the valence (positive or negative) of the feedback that led to our observed effects, or the fact that the content of the performance evaluations reflected gender stereotypes of women (high in warmth or low in competence). In Study 2, we sought to disentangle the effects of stereotype consistency and feedback valence. We did this by adding counter-stereotypical feedback conditions (low in warmth/high in competence). This resulted in a more

TABLE 1 Study 1 conditional indirect effect of supervisor gender on endorsement of gender stereotypes through attributions of feedback to gender for positive, neutral, and negative feedback

Valence of feedback	Indirect effect	Bootstrapped standard error	Bias-corrected lower limit	Bias-corrected upper limit
Outcome = perceptions that the supervisor endorses gender stereotypes				
Positive feedback	-.14	.20	-.56	.24
Neutral feedback	.08	.13	-.19	.32
Negative feedback	-.79	.19	-1.18	-.43

Note. Bias-corrected 95% confidence intervals were calculated using 5,000 bootstrap samples (with replacement). Significant conditional indirect effects ($p < .05$) are highlighted in boldface.

complete 2 (stereotype content) by 2 (stereotype valence) design in which participants were asked to respond to one of four types of feedback: high in warmth, high in competence, low in warmth, and low in competence. By providing women with both positive and negative feedback on competence and warmth dimensions, we could determine whether it was the valence of the feedback or the fact that the feedback reflected gender stereotypes which was the primary determinant of women's differing responses to feedback from men versus women supervisors.

In Study 2, we also assessed women's professional aspirations to test whether the gender of the supervisor and the type of feedback received affected not only the attributions women make but also their professional aspirations. We hypothesized that attributions to gender would mediate the relationship between supervisor gender and women's professional aspirations, but only in the negative feedback conditions. The added factor of stereotype domain would allow us to evaluate whether these hypothesized relationships depend on whether the feedback is consistent with gender stereotypes of women. We predicted that participants would report decreased desire to pursue leadership and professional development opportunities in the organization after receiving negative feedback from men (but not women) supervisors, and that this relationship would be mediated by women's attributions of the feedback to their gender. Moreover, we believed that the hypothesized mediational relationship would not occur in the case of positive feedback or feedback from women supervisors. In summary, we predicted that receiving negative feedback from men supervisors would result in women attributing the feedback to their gender and subsequently lowering their leadership aspirations.

5 | STUDY 2 METHOD

5.1 | Participants

Again, women born in the United States who were employed either full- or part-time ($N = 245$) were recruited via Amazon Mechanical Turk. The demographics of the resulting sample were similar to those of Study 1, with 76.3% Whites, 55.9% with a bachelor's degree or higher, and 58.7% with household incomes of \$50,000 per year or less. Ages ranged from 20 to 72, with the mean age at 36.69 years ($SD: 11.55$). Years of work experience ranged from 1 to 50, with mean years of work experience of 16.28 years ($SD: 10.37$). There were 22.6% leaning conservative/conservative, 23% moderate, and 53.9% leaning liberal/liberal.

In the final sample, 16 participants were removed for incorrectly identifying the gender of the supervisor during the manipulation check, resulting in a final sample of 229 women.

5.2 | Experimental design and procedures

Study 2 utilized a three-factor experimental design: 2 (gender of supervisor: man or woman) by 2 (valence of feedback: positive or negative) by 2 (dimension of feedback: competence or warmth). The gender of

the supervisor was manipulated in the experimental prompt in which the performance review was described as being conducted by either a man or a woman supervisor. As with Study 1, the performance review contained ratings in six areas which are commonly evaluated in the workplace. Two of the six areas (analytical skills and technical competence) are commonly associated with the masculine domain of competence, two of the areas (interpersonal skills and teamwork) are commonly associated with the feminine domain of warmth, and the remaining two areas (professionalism and reliability) are not commonly associated with either masculine or feminine domains. Ratings in each area were assigned to reflect one of the four possible patterns of feedback consistent with our manipulation of stereotype domain and feedback valence: (a) Positive feedback ("exceeds expectations") in feminine domains of warmth with neutral feedback in all other areas, (b) Positive feedback ("exceeds expectations") in masculine domains of competence with neutral feedback in all other areas, (c) negative feedback ("below expectations") in feminine domains of warmth with neutral feedback in all other areas, and (d) negative feedback ("below expectations") in masculine domains of competence with neutral feedback in all other areas.

5.3 | Dependent variables

5.3.1 | Attributions of feedback to gender

Attributions were measured by the same two items as in Study 1. Again, the items were highly correlated, $r(227) = .89$, $p < .01$ and were combined into one measure of attributions of feedback to gender.

5.3.2 | Professional aspirations

Professional aspirations were assessed with two items (1 = *Not at all likely* to 7 = *Very likely*): "Based on this feedback, how likely would you be to pursue leadership opportunities at this organization?" and "Based on this feedback, how likely would you be to pursue professional development opportunities at this organization?" $r(229) = .32$, $p < .01$. These two items were combined into one measure of professional aspirations.

6 | STUDY 2 RESULTS

Study 2 data were analyzed using three-way (gender of supervisor by valence of feedback by dimension of feedback) between-subjects ANOVAs.

6.1 | Are attributions to gender affected by supervisor gender, valence of feedback, and dimension of feedback?

First, we examined whether the hypothesized two-way interaction between supervisor gender and feedback valence would be qualified by stereotype content. The analysis showed that this three-way interaction was not significant, $F(1,221) = .11$, $p = .739$, on attributions of feedback to gender. However, consistent with predictions, there was a marginally significant gender of supervisor by valence of feedback interaction, $F(1,221) = 3.42$, $p = .066$, $\eta_p^2 = .02$, 95% CI [.0000; .0613].

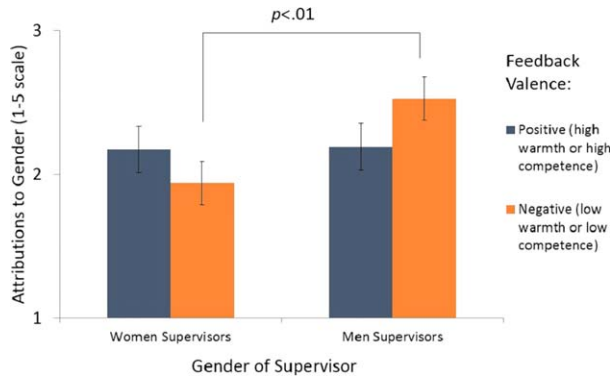


FIGURE 4 Effect of supervisor gender and feedback valence on attributions of feedback to gender (Study 2)

As with Study 1 findings, when the feedback was negative, participants were significantly more likely to attribute the feedback to their gender when the supervisor was a man, $M = 2.53$, $SEM = .16$, than when the supervisor was a woman, $M = 1.94$, $SEM = .15$, $F(1,225) = 7.03$, $p = .009$, $\eta_p^2 = .03$, 95% CI [.0019; .0861]. However, when performance feedback from the supervisor was positive, there were no differences in how women interpreted the feedback from men or women supervisors, $F(1,225) = .01$, $p = .937$. As Figure 4 shows, participants' attributions of feedback to their gender depended on both the gender of the supervisor and the valence (positive or negative) of the feedback that was received, but not on the dimension of the feedback (competence or warmth).

6.2 | Does negative feedback from men supervisors decrease women's subsequent professional aspirations?

Similar to attributions of feedback to gender, there was also no significant three-way interaction among supervisor gender, stereotype domain, and feedback valence on women's professional aspirations, $F(1,221) = 1.97$, $p = .162$. However, as expected, we found a significant gender of supervisor by valence of feedback interaction, $F(1,221) = 5.80$, $p = .017$, $\eta_p^2 = .03$, 95% CI [.0007; .0792]. Negative feedback

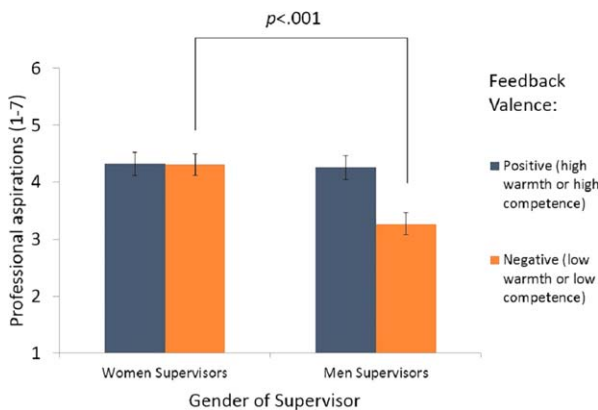


FIGURE 5 Effect of supervisor gender and feedback valence on women's professional aspirations (Study 2)

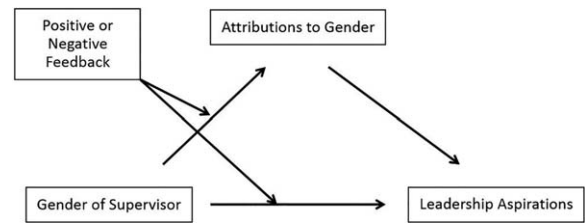


FIGURE 6 Moderated mediation (Study 2)

from men supervisors led women to report that they would be less likely to pursue leadership and professional development opportunities at the organization, $M = 3.27$, $SEM = .21$, than the same feedback from women supervisors, $M = 4.31$, $SEM = .19$, $F(1,225) = 13.42$, $p < .001$, $\eta_p^2 = .06$, 95% CI [.0121; .1232]. There were no differences in professional aspirations based on supervisor gender when the feedback was positive, $F(1,225) = .05$, $p = .828$ (Figure 5).

6.3 | Moderated mediation analyses

We suggested that women's attributions of feedback to their gender would mediate the relationship between supervisor gender and motivation to pursue leadership opportunities within the organization, and that this mediational path would hold only when the feedback was negative and not when it was positive (see Figure 6). Gender of the supervisor, feedback valence, attributions, and professional aspirations were entered into the PROCESS Macro in SPSS developed by Hayes (2013) to test for indirect effects with 5,000 bootstrap samples. Consistent with our prediction, we found that for those who received negative feedback, the bootstrapped 95% confidence interval (-.3177 to -.0260) for the indirect effect did not include zero, suggesting that attributions to gender mediated the relationship between the gender of the supervisor and women's leadership aspirations. For those who received positive feedback, the bootstrapped 95% confidence interval (-.1357 to .1143) for the indirect effect did include zero, suggesting that the mediation does not hold when the feedback is positive (see Table 2).

7 | GENERAL DISCUSSION

Findings from the two studies together converge to suggest that women's professional aspirations are affected not only by the type of feedback that they receive but also by whether the feedback comes from a man or a woman supervisor. These effects were mediated by the extent to which women attributed the feedback to possible gender biases. In Study 1, women who received negative (low competence) feedback from men supervisors were more likely to attribute this feedback to their gender, and to believe that their supervisor endorsed gender stereotypes of women, than those who received the same feedback from women supervisors. In contrast, attributions to gender were similar regardless of whether the supervisor was a man or a woman when the feedback was positive or neutral. Together, this pattern of findings suggest that negative feedback uniquely affected the likelihood that women would make gender-based attributions when

TABLE 2 Study 2 conditional indirect effect of supervisor gender on women's professional aspirations through attributions of feedback to gender for positive and negative feedback

Valence of feedback	Indirect effect	Bootstrapped standard error	Bias-corrected lower limit	Bias-corrected upper limit
Outcome = women's professional aspirations				
Positive feedback	-.004	.06	-.14	.11
Negative feedback	-.13	.07	-.31	-.03

Note. Bias-corrected 95% confidence intervals were calculated using 5,000 bootstrap samples (with replacement). Significant conditional indirect effects ($p < .05$) are highlighted in boldface.

receiving feedback from men supervisors. In Study 2, we found that all negative feedback from men supervisors (i.e., both feedback that corresponded with traditional stereotypes of women and feedback that challenged those stereotypes) resulted in women making greater attributions to their gender than the same feedback from women supervisors. Furthermore, in Study 2 we found that negative feedback (whether low competence or low warmth) from men supervisors but not women supervisors led women to feel less inclined toward leadership positions and professional development opportunities in the organization. This effect was mediated by the extent to which women made attributions to their gender.

These findings suggest a potential explanation for the persistent underrepresentation of women in leadership roles: Women, who are underrepresented in leadership positions, are likely to be supervised by and receive feedback from men supervisors. When they receive negative or critical feedback from opposite-gender supervisors, they are more likely to conclude that the feedback is due to gender biases. When women conclude that part of why they received negative feedback from men supervisors is because of potential biases, they may feel less motivated to pursue leadership roles. The perception of bias suggests to individuals that upward mobility in organizations may be limited despite their merit and abilities. This pattern results in a self-perpetuating cycle that hinders efforts to increase women's underrepresentation in leadership domains. The attributional ambiguity associated with receiving negative feedback from men supervisors highlights the difficult situation women face when receiving negative feedback from men supervisors at work. On the one hand, if the negative feedback is rooted in bias, consistent with the notion of backlash against high performing women who violate gender stereotypes (Brescoll, Okimoto, & Vial, 2018; Rudman & Phelan, 2008), then women, as we suggest, are not wrong to conclude that their leadership opportunities may be limited despite their qualifications. On the other hand, if the negative feedback is in fact accurate, women will have missed an opportunity to benefit from the feedback and make corresponding changes to become stronger candidates for leadership roles in the organization.

A finding of note is that we found similar patterns of responses to supervisor feedback regardless of the stereotype content of the feedback—that is, whether the feedback concerned competence-related areas such as analytical skills or warmth-related areas such as interpersonal skills. One possible interpretation for this finding is that feedback valence is fairly straightforward to interpret and thus easy to respond to (positive feedback is good and therefore accepted, whereas negative feedback is bad and therefore threatening). In contrast, the implications

of stereotype content embedded within performance feedback require deeper cognitive analysis to interpret. In the workplace, women are often subject to competing stereotypes (Fiske et al., 2002). If women are perceived as lacking in competence, they are seen as confirming traditional stereotypes of women that are inconsistent with workplace success (Eagly & Mladinic, 1989; Foschi, 1996, 2000; Roberson, Galvin, & Charles, 2007). However, if women are competent but seen as low in warmth, they are punished for violating stereotypes of how women "should" be or act (Heilman, 2001; Rudman & Glick, 2001). For example, women who are rated as competent but not warm are often disliked and face penalties in hiring, promotions, and leadership evaluations. Thus, women who receive either type of negative feedback "lose" whether it is by others questioning their ability to advance in the organization when they are rated as low in competence (Eagly & Karau, 2002) or by being disliked when they are seen as low in warmth (Rudman & Phelan, 2008). Each situation highlights a distinct negative stereotype of women. The reminders of these stereotypes may explain why negative feedback from men supervisors on either the competence or the warmth dimension results in higher attributions to gender.

A potential key limitation of the current research is that the feedback that the women were asked to respond to was hypothetical. However, the content and the format of the performance evaluations used in our study closely mirror the evaluations that women receive in the real world. All of our participants were women who worked either full- or part-time and therefore receive performance reviews and performance feedback from supervisors regularly. Therefore, we believe that the observed patterns are suggestive of how women would respond in a similar situation at their actual workplace. Future studies should explore whether these processes replicate in real-world supervisor-employees dyads where women have pre-existing relationships with their supervisors and therefore may have a better sense of whether their supervisors are biased against women.

Our research suggests the importance of having more women in leadership roles in the workplace. Having more women in these roles would result in more women having same-gender supervisors. Same-gender supervisors may be able to provide valuable critical feedback that their subordinates can strategically use to advance their careers without depressing their professional aspirations. Having women supervisors can add to the flow of the pipeline of women leaders by removing concerns about gender bias that prevent women from fully utilizing supervisory feedback constructively to improve their performance and advance in their careers.

Findings from the current work also add to a growing body of research which suggests that women leaders in the workplace can encourage other women to persist, especially in fields dominated by men (Latu, Mast, Lammers, & Bombari, 2013; Stout, Dasgupta, Hunsinger, & Mcmanus, 2011). Specifically, we identified an important but previously overlooked pathway through which women leaders can facilitate the advancement of other women in organizations—by reducing attributions to gender biases and subsequent disengagement after women receive negative feedback at work. Our results suggest one way to deliver negative feedback without discouraging women from leadership roles could be to change the source of the feedback (i.e., for the feedback to come from a woman supervisor). Thus, having a woman supervisor could prevent women from abandoning the pursuit of leadership roles in organizations after they receive critical feedback. In this way, women supervisors can facilitate the leadership pipeline and help other women break through the glass ceiling.

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APPENDIX

SAMPLE PERFORMANCE REVIEW (STUDIES 1 AND 2)

JOB PERFORMANCE EVALUATION FORM

Employee Name: XXXXXXXXXX
 Employee Gender: Female
 Job Area: Marketing
 Supervisor Name: XXXXXXXXXX
 Supervisor Gender: Female

Performance Rating Definitions

Exceeds Expectations Performance is routinely above job requirements
 Meets Expectations Performance is regularly satisfactory and dependable
 Below Expectations Performance fails to meet job requirements on a frequent basis

PERFORMANCE FACTORS

	Below Expectations	Meets Expectations	Exceeds Expectations
Interpersonal Skills – friendly, gets along with fellow employees			X
Teamwork – cooperation, ability to work as part of a team			X
Analytical Skills – analyzing facts and data, problem solving		X	
Technical Competence – technical skills, knowledge and understanding		X	
Professionalism - professional appearance and behavior		X	
Reliability - meets deadlines regularly		X	

GENERAL FEEDBACK FROM SUPERVISOR:

Overall, I have found your performance during the last six months to be satisfactory. Your interpersonal skills are a source of strength, and you come across as warm and friendly in your interactions with your teammates.

Supervisor Signature:
