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Gender and Leadership Aspiration: Supervisor Gender, Support, and Job Control

Claudia Fritz*#

Erasmus University Rotterdam, The Netherlands

Daan van Knippenberg#

Drexel University

Understanding the role of leadership aspiration in the under-representation of female leaders is important, because aspiration is a key predictor of hierarchical advancement. A neglected perspective in the relationship between gender and leadership aspiration is the gender of the individual's supervisor. Supervisors can play an important role in providing support and in engendering a sense of control, and both support and control are precursors to leadership aspiration. Yet, supervisors may also act on gender biases that discourage women's leadership aspiration. We argue that there is an interaction between supervisor and subordinate gender such that men experience relatively high levels of support and control regardless of supervisor gender, whereas women experience more support and control and as a result display higher leadership aspiration with a female supervisor. A survey of N=402 men and women supported these hypotheses regarding the subordinate gender by supervisor gender interactive influence on leadership aspiration, support, control, and the mediated moderation model.

INTRODUCTION

Women account for 46 per cent of the workforce in the EU (European Commission, 2013). Yet, only one in five board members is female within listed companies in the EU (European Commission, 2016). Even when more women are rising into leadership roles—the number of female board members in the EU increased from 12 per cent in 2010 to 23 per cent in 2016 (European

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^{*} Address for correspondence: Rotterdam School of Management, Erasmus University Rotterdam, PO Box 1738, 3000 DR Rotterdam, The Netherlands. Email: dr.claudia.fritz@gmail.com

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Commission, 2016)—these numbers obviously fall short from reflecting the overall representation of women in the workforce. The analysis of the causes of the barriers that women face in leadership advancement is well developed (Eagly & Carli, 2007; Heilman, 2001; Khattab, van Knippenberg, Nederveen Pieterse, & Hernandez, in press). Research, meticulously articulated in role congruity theory (Eagly & Karau, 2002), outlines how gender stereotypes and leader stereotypes converge to put women at a disadvantage compared to men when it comes to leadership advancement: leader stereotypes are gendered and emphasise stereotypically masculine over stereotypically feminine traits, resulting in gender biases in leadership perceptions and selection decisions, and disadvantageous work environments, employment practices, and compensation levels (Hoyt & Murphy, 2016; Yeagley, Subich, & Tokar, 2010). There is also evidence that this gender-biased reality may discourage leadership aspiration—personal interest in achieving a leadership position and the willingness to accept such a position (Singer, 1991)—among women (Hoobler, Lemnon, & Wayne, 2014; Konrad, Ritchie, Lieb, & Corrigall, 2000; Savery, 1990). Such gender differences in leadership aspiration are important because aspiration is a major predictor of career attainment (Schoon & Polek, 2011), occupational status (Schoon, Martin, & Ross, 2007), and hierarchical advancement (Tharenou, 2001). Gender differences in leadership aspiration may thus arguably exacerbate the problem of the under-representation of women in leadership positions.

Importantly, however, there are also indications that such gender differences in leadership aspiration may not always arise. Complementing findings of gender differences in aspiration, there are studies of leadership aspiration and the related notion of career aspiration that do not observe gender differences (Gbadamosi, Evans, Richardson, & Ridolfo, 2015; Morrison, White, & Velsor, 1987; Singer, 1991). Such variations in whether or not gender differences in aspiration are observed may indicate a relatively small effect size (cf. Eagly, Karau, Miner, & Johnson, 1994). However, such findings may also be indicative of moderating influences that determine whether or not women's leadership aspiration is lower than men's. The latter possibility is particularly interesting from the perspective of research and practice, because it would point to conditions that could help eliminate gender differences in leadership aspiration as a step towards levelling the playing field in leadership advancement. This observation is the starting point for the current study.

The current state of the science suggests that there is value in an analysis of the contingent nature of the relationship between gender and leadership aspiration. In considering such contingencies, we do not intend to be exhaustive; no single empirical study can accomplish an exhaustive analysis. Rather, we position our study as addressing a particularly salient moderating influence in the relationship between gender and leadership aspiration: supervisor gender

(where we broadly define supervisor as the individual directly higher in the hierarchy who the individual reports to, regardless of the hierarchical level at which the individual operates). Direct supervisors are particularly relevant in the consideration of gender and leadership aspiration, because they are the organisational decision-makers that individuals are most directly in contact with. They are positioned to most directly affect the experience of work and individuals' perceptions of advancement opportunities and encouragement. From that perspective, the consideration of supervisor gender becomes particularly relevant when we consider that most people in leadership positions in organisations are male (a recent European study found that only one in three managers is female; Eurostat, 2015). There is evidence that men more than women display the gender biases captured by role congruity theory (Koenig, Eagly, Mitchell, & Ristikari, 2011) that may discourage women's leadership aspiration. Working with a male as compared with a female supervisor may thus put women at a disadvantage.

Put differently, extending role congruity insights with notions of gender differences in the gender biases that put women at a leadership disadvantage, we propose that women's leadership aspiration more than men's are contingent on supervisor gender. We develop this analysis in outlining how gender biases that may discourage women's leadership aspiration express themselves in lower supervisor support (the expression of concern or empathy as well as the offering of advice or solutions; House, 1981) and job control (the perceived freedom to decide how, where, and when the work is done; Kossek, Lautsch, & Eaton, 2006). Support and control are closely tied in with gender biases in perceptions of competence and career potential (i.e., one would give more support and control to individuals one deems more competent and having greater career potential, and gender biases favour men over women on these counts). Support and control can also be expected to be related to leadership aspiration (Tharenou, 2001; van Yperen & Hagedoorn, 2003) and thus to mediate the gender by supervisor gender interactive influence on leadership aspiration.

The contribution of our study lies in the development of the role congruity (Eagly & Karau, 2002) perspective on gender and leadership. We extend role congruity theory's gender bias analysis to identify the contingent nature of gender differences in leadership aspiration. In pointing to the role of supervisor gender and the process through which gender and supervisor gender interact to influence leadership aspiration, we also identify anchors for interventions that may help level the playing field in gender and leadership.

THEORETICAL BACKGROUND AND HYPOTHESES

Gender biases in leadership perceptions create obstacles to women's leadership advancement. As outlined in role congruity theory, these biases can

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be understood as the result of social categorisation and stereotyping (Eagly & Karau, 2002). There are widely shared gender stereotypes that associate women with other traits than men (more communal vs. more agentic traits, respectively). There are also stereotypes of leadership that associate leaders more with stereotypically masculine traits (agentic traits) than stereotypically feminine traits (communal traits). The result of this convergence of stereotypes is that gender-based perceptions associate men more with the traits required for leadership than women (Ridgeway, 1991, 2001; Roth, Purvis, & Bobko, 2012). When these perceptions are the basis for leadership selection and promotion decisions, men have an advantage over women, not because of their objective qualifications but because of stereotype-based biases (Eagly & Carli, 2007; Heilman, 2001; Holt & Lewis, 2011; McDonald, 2011; McGuire, 2000; Oakley, 2000; Phelan, Moss-Racusin, & Rudman, 2008; Schein, 1978).

The stereotype-based gender biases documented in role congruity theory may not only give rise to barriers to women's leadership advancement; such gender-biased barriers may also discourage women's leadership aspiration. Aspiration is one of the major predictors of career attainment, occupational status, and hierarchical advancement (Schoon & Polek, 2011; Schoon et al., 2007; Tharenou, 2001). Aspiration, as a personal goal, is linked to achievements through steering concentration, activating effort, influencing endurance, and organising behaviour (Abele & Spurk, 2009). Aspiration does not automatically translate into achievement, but it does make achievement more likely. When gender-biased barriers to leadership advancement discourage women's leadership aspiration, this thus is problematic from the perspective of the under-representation of women in leadership positions. Gender biases become a self-fulfilling prophecy, where lower leadership aspiration of women as compared with men helps sustain the lower representation of women in leadership positions.

Abele and Spurk's (2009) understanding of leadership aspiration as a personal goal helps understand that when the goal seems less achievable because one perceives less opportunity for leadership advancement (i.e., because of gender-biased barriers), one is less inclined to embrace the goal (Locke & Latham, 1990). Thus, extending the role congruity theory analysis of gender biases in leadership perceptions and of the barriers to leadership advancement that follow from these biased perceptions (Eagly & Carli, 2007), we would expect gender differences in leadership aspiration. As noted in the opening paragraphs, there is evidence of gender differences in leadership aspiration and related constructs like career or managerial ambitions and valuation of positions of leadership and power (Cooke & Xiao, 2014; Eagly et al., 1994; Farmer, 1997; Fritz & van Knippenberg, 2017; Hoobler et al., 2014; Karami, Ismail, & Sail, 2011; Litzky & Greenhaus, 2007; Pas,

Lagro-Hanssen, Doorewaard, Eisinga, & Peters, 2008; Savery, 1990; van Vianen & Keizer, 1996). At the same time, there is also research reporting that there is no difference between men and women in aspiration (Barnett et al., 1998; Gbadamosi et al., 2015; Klimusová, Burešová, & Bartošová, 2015; Morrison et al., 1987; Singer, 1991). This variation in findings constitutes an invitation to consider moderating influences in the relationship between gender and leadership aspiration, and as we outline below, role congruity theory can be extended to identify the role of supervisor gender as an important moderating influence in this respect.

Gender Differences in Leadership Aspiration and Supervisor Gender

A key element in role congruity theory and its analysis of gender-biased barriers to leadership advancement is that it is first and foremost the gender bias of *others* that creates an environment that is disadvantageous to women's leadership advancement (Eagly & Carli, 2007). In considering moderation in the relationship between gender and leadership aspiration, it is therefore important to consider who the other people are that individuals interact with at work. One particular role stands out in this respect: that of the individual's direct supervisor (understood as hierarchical superior, regardless of the hierarchical level at which the individual is positioned).

One's supervisor plays a particularly influential role, because it is the most proximal person with decision authority for outcomes that concern the individual. Supervisors are in day-to-day relationships with employees and are "the gatekeepers who can create or deny opportunities to their direct reports and who wield incredible influence over whether the corporate culture and immediate work environment is perceived by those employees as inclusive or exclusionary" (Mattis, 2001, p. 385). Supervisors play an important role in influencing the work environment and thus the conditions conducive to leadership aspiration. Supervisors are positioned to support and empower subordinates in their work, including in actions that are conducive to career advancement. Importantly, supervisor support and empowerment is to a substantial degree discretionary. Supervisors may choose to support and empower some individuals more than others. Supervisors are likely to support and empower individuals more when they see more potential for advancement in them, and we propose that such support and empowerment is important in encouraging leadership aspiration. Because of the discretion in support and empowerment, gender biases may express themselves in the behaviour of one's supervisor. Gender-biased perceptions of potential may lead supervisors to behave such that they encourage leadership aspiration more in men than in women.

746

This then raises the question of what would affect the extent to which a supervisor is gender-biased. Whereas multiple factors undoubtedly play a role here, in this study we focus on one factor that should be particularly fundamental in this respect: supervisor gender. Role congruity theory identifies stereotype-based perceptions as the root cause of gender biases in leadership. A key insight from this analysis is that men tend to have a more masculine construal of leadership and as a result stronger gender biases favouring men over women as leaders (Koenig et al., 2011). Integrating this insight into the current analysis, we may assume that female supervisors on average are less gender-biased than male supervisors. As a result, women can be expected to receive more support and empowerment from a female supervisor than from a male supervisor.

In contrast, men arguably benefit from the gender bias of a male supervisor, and thus benefit less from a less gender-biased female supervisor. We can expect men's leadership aspiration to be less affected by the gender of their supervisor, however. At work, men tend to have greater and more supportive networks than women (Cannings & Montmarquette, 1991; Jackson, 2001; Khattab et al., in press; Lyness & Thompson, 2000; McDonald, 2011), providing them with more alternatives to supervisor support and empowerment. We would therefore expect gender differences in leadership aspiration with a male supervisor, but not with a female supervisor.

Hypothesis 1: With a male supervisor, women's leadership aspiration are lower than men's, whereas there is no gender difference in leadership aspiration with a female supervisor.

The rationale for Hypothesis 1 is that supervisor gender bias expresses itself such that women experience the work setting as more conducive to their leadership advancement with a female supervisor than with a male supervisor, whereas men's experience of their work environment in this respect is less contingent on supervisor gender. We propose that this influence of supervisor gender is mediated by supervisor support and job control.

Supervisor Gender and Support

Support is defined as the "perceived availability and quality of close relationships" (Cohen, Hammen, Henry, & Daley, 2004, p. 143). It can range from vocational support (e.g., providing career suggestions), role modelling (e.g., motivating others), to social support (e.g., sharing problems; Scandura, 1992). Career encouragement is particularly important for women's hierarchical advancement (Morrison et al., 1987; Tharenou, 2001) but on average women receive less career encouragement than men (Hoobler et al., 2014;

Scholarios & Taylor, 2011; Tharenou, Latimer, & Conroy, 1994). Women are generally exposed to an environment in which they receive less organisational support (Burke, 2002; Pachulicz, Schmitt, & Kuljanin, 2008).

The fact that women experience less support is perhaps not surprising when we consider that most supervisors are male (Eurostat, 2015) and meta-analysis shows that men have a more masculine construal of leadership than women (Koenig et al., 2011). As a result, male supervisors may see less potential for advancement in female than in male subordinates. As a consequence, they may provide less support to female subordinates. Because these gender differences in support flow from gender biases that men hold more strongly than women, we may predict that women will experience more support from a female supervisor than from a male supervisor. Men's experience of support, in contrast, may be less affected by supervisor gender because men are less dependent on their supervisor for support.

Hypothesis 2: Women receive lower support than men from a male supervisor, whereas there is no gender difference in support with a female supervisor.

Job Control

Job control is defined as the perceived freedom to decide how, where, and when the work is done (Kossek et al., 2006). Job control is associated with the degrees of freedom and decision authority to meet work challenges. As a result, job control is related to higher motivation in challenging situations (Karasek et al., 1998; van Yperen & Hagedoorn, 2003). Because leadership advancement is challenging, we may expect that job control likewise is important in stimulating leadership aspiration. Following a very similar logic to that advanced for the relationship between gender, supervisor gender, and support, we may expect that women experience more job control with a female supervisor than with a male supervisor.

Research in empowerment has emphasised that supervisors play a key role in creating a sense of job control for subordinates (Kirkman & Rosen, 1999). By empowering their subordinates, supervisors imbue subordinates with the autonomy to act more self-directed, and in doing so encourage more ambitious goal-setting. Whereas job control has not been linked to leadership aspiration, it is a small step to predict that supervisor actions to give subordinates more job control are conducive to subordinate leadership aspiration. Supervisor empowerment is discretionary behaviour, and supervisors can differentiate in the extent to which they empower subordinates. As with support, we can expect that their empowerment is influenced by the competence and potential they perceive in their subordinates.

748

This is where gender biases come in. Stereotype-based perceptions may lead supervisors—and in particular male supervisors—to behave in ways that create more job control for male than for female subordinates. In line with the fact that most supervisors are male, there is evidence that men report higher job control than women (Li, Yang, & Cho, 2006; Maggiori, Johnston, & Rossier, 2016; Milner, Smith, & LaMontagne, 2015). Our reasoning as outlined for Hypothesis 1 and 2 suggests that this may be an outcome primarily associated with male supervisors, because men are more gender-biased in their leadership perceptions than women (Koenig et al., 2011). Extending these insights to the granting of job control, we propose that male supervisors tend to invest less in actions that instil a sense of job control for female subordinates than female supervisors. Whereas men's job control may benefit from gender bias, and thus from a male as compared with a female supervisor, here too we would expect this effect to be weaker because men can draw on a broader network and are less dependent on their supervisor for their ability to take control of their outcomes.

Hypothesis 3: Women experience lower job control than men from a male supervisor, whereas there is no gender difference in job control with a female supervisor.

Leadership Aspiration and the Mediating Roles of Support and Job Control

From our analysis it may be clear that we expect support and job control to mediate the interactive effect of gender and supervisor gender on leadership aspiration. In advancing Hypotheses 1–3, we argued that gender biases lead male supervisors, but not female supervisors, to behave in ways that create a work situation that is less encouraging of leadership aspiration for women. In contrast, the situation as experienced by men is less affected by supervisor gender. We linked this experience specifically to support and control. We argue that these influences on support and control explain—mediate—the interactive influence of gender and supervisor gender on leadership aspiration.

Supervisor support is a positive influence on leadership aspiration, because such support reduces perceived barriers to and increases perceived opportunities for advancement. In line with this logic, Tharenou (2001) found that women who receive more support are more likely to advance hierarchically. Support has also been linked to aspiration for senior management positions (Litzky & Greenhaus, 2007) and to leadership aspiration among nurses (Bulmer, 2013). Job control too can be expected to be an influence on leadership aspiration. Like support, higher experienced job control can be expected

to be associated with lower perceived barriers to leadership ambitions and greater opportunities to realise these ambitions, because one is less dependent on others in the advancement process. In line with this reasoning, Rogers (2005) argued that a lack of autonomy can result in setting less ambitious career goals for oneself and not pursuing leadership goals. Thus, based on our analysis that leads us to predict interactive effects of gender and supervisor gender on leadership aspiration, support, and control, we predict that the gender by supervisor gender interaction on leadership aspiration is mediated by support and job control (see Figure 1 for our research model).

Hypothesis 4: The interaction between subordinate gender and supervisor gender on leadership aspiration is mediated by (a) supervisor support and (b) job control.

METHOD

Procedure

Data for our study were collected through an online survey, in line with other cross-sectional survey research in the study of aspirations (e.g., Gray & O'Brien, 2007; Hoobler et al., 2014; Litzky & Greenhaus, 2007; Pas et al., 2008). This set-up was more conducive to getting equal numbers of men and women in our sample than alternatives like longitudinal data gathering that would be preferable from other perspectives. Importantly, one of

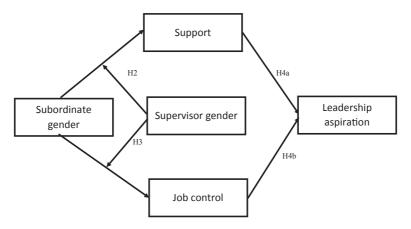


FIGURE 1. Research model.

Note: H2 and H3 capture interaction effects on the mediators, H4a and H4b refer to the mediated moderation hypotheses. H1, the interactive effect of subordinate gender and supervisor gender on leadership aspiration is implied by the model as a whole.

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the concerns with single source surveys, the possibility that percept-percept relationships are inflated, is no concern for the most important predictions here. Such an inflation does not apply to the gender relationships of interest because gender is not a perceptual variable (the concern does apply to the predicted mediator to outcome paths). For the present purposes then, the current design can be considered to be of satisfactory quality.

Respondents for this survey were recruited by a British online panel provider. Respondents had to have a supervisor, and work full-time with at least three years of work experience and at least one year tenure at their current job. Respondents received a monetary incentive for completing the survey. Online surveys are sometimes criticised for being considered as spam, being demographically skewed, or having technological variations in the display of the survey (Evans & Mathur, 2005). To overcome these disadvantages, several measures, such as only contacting the people who willingly opted in to be part of the panel, were used. Further, to ensure functionality of the survey, the survey was tested in various internet browsers before its launch. Birnbaum (2004) also mentioned respondents' repeated participation as a drawback of online surveys. By using personalised survey links which were sent to each respondent via email it could be ensured that every respondent could only answer the survey once. Thus, by taking these measures, the quality of the online data can be similar to the one that could be obtained by a traditional offline survey.

Participants

We received completed surveys from 201 men and 201 women. Respondents' age ranged from 20 to 66 years (M = 40.60, SD = 11.33). Their work experience ranged from the required minimum 3 to a maximum of 49 years (M = 19.74, SD = 11.65), their organisational tenure ranged from 1 to 46 years (M = 10.23, SD = 7.69), and their tenure on their current job ranged from 1 to 34 years (M = 7.12, SD = 5.09). Almost half of the respondents (49.3%) had a non-supervising position, 25.6 per cent held a first-level manager position, 18.2 per cent were middle managers, 5.0 per cent held a position within upper management, and the remaining 2.0 per cent were executives. The educational background was relatively even split between a group of respondents with and without a university degree: 27.4 per cent had a high school degree, 20.6 per cent an apprenticeship, 31.3 per cent held an undergraduate/bachelor degree and 20.6 per cent had obtained a graduate/Master's degree. Respondents' cultural background was relatively homogenous as 88.3 per cent of them were British, followed by 6.5 per cent Continental European, 2.2 per cent Asian, 1.5 per cent African, 1.0 per cent American, and 0.5 per cent Australian (see the online Appendix for separate demographics for men and women).

Measures

Leadership Aspiration. Our dependent variable, leadership aspiration, was measured with a 17-item scale (answer options ranging from 1 = strongly disagree to 5 = strongly agree). The scale consisted of items measuring intentions as well as items measuring behaviours. To measure intentions we used the "leadership and achievement scale" developed by Gray and O'Brien (2007) and added an additional three items in response to their suggestion to enlarge the scale. The scale included items such as "I would like to obtain a (higher) leadership position" and "I hope to become a leader in my career field". Because intentions do not equal behaviour (Ajzen & Madden, 1986), we decided to measure not only intentions, but also (self-reported) behaviours. To measure leadership aspiration behaviours, we were inspired by the work of Tharenou and Terry (1998) and Day and Allen (2004), being adapted from London (1993) and Noe, Noe, and Bachhuber (1990), including items such as "I have discussed my aspirations with a senior person in the department/ organization" and "I have requested to be considered for promotions" (see the online Appendix for all measures).

Support. Supervisor support was measured with an 8-item scale (answer options ranging from 1 = never to 4 = most of the time). The scale was developed by House (1981), and included items such as "offer support and encouragement" and "share advice or ideas".

Job Control. Job control was measured with a 7-item scale (answer options ranging from 1 = very little to 5 = very much) developed by Kossek et al. (2006). It included items such as "The job gives me considerable opportunity for independence and freedom in how I do the work" and "To what extent does your job permit you to decide on your own about where the work is done?".

Subordinate and Supervisor Gender. Respondents indicated both their own gender and the gender of their direct supervisor. Gender was coded with 1 = female and 0 = male. Similarly, supervisor gender was coded with 1 = female supervisor and 0 = male supervisor.

Control Variables. Following Becker (2005) and Carlson and Wu (2011) in their arguments for the inclusion of control variables on theoretical grounds only, we included control variables that covaried with gender and could be expected to be predictive of leadership aspiration, but that were not pertinent to the current perspective of gender differences in leadership

aspiration. Including such controls, we hope to account for potential alternative explanations for gender differences in leadership aspiration.

We controlled for organisational and job experience (measured in years), as men in our sample are more senior than women, and seniority may predict leadership aspiration because more senior people may be seen (by themselves and others) as more qualified for leadership positions. We also controlled for educational background (1 = Master's, 0 = other) as more women than men hold a Master's degree. Level of education may predict leadership aspiration because people with a Master's degree may be seen (by themselves and others) as more qualified for a leadership position. We controlled for the gender composition of the respondents' environment—gender composition of peer group as well as experience working with female managers. This measure was adapted from (Tharenou, 2001; Tharenou et al., 1994) and we named it "female hierarchy" following her naming convention (note, though, that the variable captures experience with gender composition of peers as well as managers). Female hierarchy was measured as a combined score of two items, measuring the observed gender proportion among the direct peers and the experience with female managers. We deemed this a relevant control because the presence of a female supervisor might covary with broader representation of women in the work environment, and this way we could isolate the influence of supervisor gender more. We therefore also tested the gender by "hierarchy" interaction to exclude this as an alternative interpretation. Finally, we controlled for relationship status (1 = married, 0 = other)and particularly for the interaction of gender and relationship status. Women still do more housework (Bianchi et al., 2006; Holt & Lewis, 2011) compared to their husbands and also compared to non-married women (Eagly & Carli, 2007). Women's greater domestic responsibilities are associated with "their lesser access to power and authority in society" (Eagly & Carli, 2007, p. 49) and it can be regarded as a major barrier for women's hierarchical advancement (McCarty Kilian, Hukai, & McCarty, 2004).

RESULTS

Because our leadership aspiration measure combined items targeting behaviour and items targeting intention, we first aimed to establish that it is empirically justified to treat this measure as one scale. Although intentions and behaviours can be distinguished, they should group together under the higher-order concept of leadership aspiration. We first conducted an Exploratory Factor Analysis, finding that all items loaded on one factor. Even so, there was a notable difference between the majority of items that loaded > 0.70 on this factor and two items that had substantially weaker loadings (0.37 and 0.34). To produce a stronger scale with higher internal consistency, we decided to drop these two items from further consideration.

We then conducted Confirmatory Factor Analysis using the package lavaan in R to determine whether a solution with one higher-order factor with two lower-order dimensions (intentions and behaviour) had satisfactory fit. This analysis showed that this solution had an acceptable fit (CFI = 0.94, TLI = 0.93, RSMEA = 0.105), that was better than the fit of a one-factor model (CFI = 0.77, TLI = 0.73, RMSEA = 0.199), and virtually identical to the fit of a two-factor model (CFI = 0.94, TLI = 0.93, RSMEA = 0.104). In a supplemental analysis, we also conducted the hypotheses test reported below separately for leadership aspiration measures based on intention items alone and behavioural items alone, and these analyses led to identical conclusions as the ones reported below. We therefore proceeded with the analysis of the combined intentions and behaviour scale for the test of our hypotheses.

Next, we conducted a CFA to establish the fit of a model with a support factor, a control factor, and a higher-order leadership aspiration factor with intention and behaviour dimensions, allowing these factors to be correlated as predicted by our theory, to establish the fit of the distinctions between our perceptual survey variables. This analysis indicated that this model had decent fit (CFI = 0.88, TLI = 0.87, RSMEA = 0.09), but not as good as one would ideally see. The modest fit might be due to the moderately strong correlations between our proposed mediators and dependent variable.

Means, standard deviations, and intercorrelations for all variables, and Cronbach's α where relevant, are displayed in Table 1. All scale reliabilities were good: 0.82 for job control, 0.95 for support, and 0.96 for leadership aspiration. We looked at the variance inflation factor (VIF) as indicator of multicollinearity indicator. VIFs of the main effect terms were in the range of 1.04 (educational background) to 1.71 (supervisor gender) indicating that multicollinearity was not an issue.

HYPOTHESES TESTS

Leadership Aspiration

To test our hypothesis regarding leadership aspiration we conducted a hierarchical regression analyses in which the main effect terms of the control variables were entered at step 1 and gender and supervisor gender as well as the relevant interaction terms (gender × supervisor gender as well as gender × female hierarchy and gender × relationship status as controls) at step 2. Results are displayed in Table 2. Significant relationships for control variables that are not relevant to the hypotheses tests will not be discussed here.

Gender was significantly related to leadership aspiration. Women (dummy-coded 1) had lower leadership aspiration than men (dummy-coded 0; b = -0.41). Supporting Hypothesis 1, the interaction of gender × supervisor

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TABLE 1 Descriptive Statistics and Correlations

	Mean	QS	I	2	E	4	5	9	7	8	6
Leadership aspiration	3.17	0.92	(96)								
Support	2.65	0.65	**04.	(95)							
Job control	3.09	0.78	.55**	.36**	(.82)						
Gender	n/a	n/a	00	.07	.00						
Supervisor gender	n/a	n/a	.04	.16**	.02	**54.					
Org. experience	10.23	7.69	18**	08	.03	16**	14**				
Job experience	7.12	5.09	19**	18**	07	14**	15**	.56**			
Education	n/a	n/a	.14*	.07	.05	.15**	.05	13*	13*		
Female hierarchy	2.93	1.08	.03	.14*	.02	.28**	.55**	.01	12*	.03	
Relationship status	n/a	n/a	80	*	**	- 15**	- 10*	16**	16**	- 01	-03

Note: Gender (1 = female; 0 = male), supervisor gender (1 = female; 0 = male), education (1 = Master's; 0 = other) and relationship status (1 = married, 0 = other) are dummy-coded variables.

Coefficients alpha for each scale are given in parentheses on the diagonal. $*_{n} < 0.6$: $*_{n} < 0.0$

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TABLE 2 Regression Analyses

Predictor b SE t p p t p p p t p p t p			Leade	Leadership aspiration	oiration				Support				$J_{\mathcal{C}}$	Job control	lo	
3.33 0.09 35.83 .000 2.72 0.07 41.35 .000 3.00 0.08 37.68 -0.01 0.01 -0.01 .00 0.05 .963 0.01 .00 1.39 -0.02 0.01 -1.1 -1.90 .059 0.00 0.01 -0 0.05 .963 0.01 0.01 -0 0.02 0.01 -1.1 -1.90 .059 0.00 0.01 -0 0.05 .963 0.01 -0.14 -2.28 0.01 0.04 .02 0.03 .12 2.33 .018 0.03 .12 2.35 .019 .00 0.04 .01 .01 .01 .01 .01 .01 .02 .02 .03	Predictor	þ	SE	β	t	d	b	SE	β	t	d	Р	SE	β	t	d
3.33 0.09 35.83 0.00 2.72 0.07 41.35 0.00 3.00 0.08 37.68 -0.01 0.01 -0.01 0.00 0.05 963 0.01 0.01 0.08 1.39 -0.02 0.01 -1.1 -1.90 0.59 0.00 0.01 -0.0 0.05 963 0.01 0.01 -0.1 -0.02 0.01 -1.1 -1.20 0.05 0.00 0.01 0.01 0.02 -0.02 0.01 0.01 0.02 0.02 0.02 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.03	Step 1															
-0.01 0.01 -1.1 -1.90 0.65 0.00 0.01 0.0 0.05 963 0.01 0.01 0.03 -0.02 0.01 0.02 0.03 0.02 0.03 0.03 0.03 0.03 0.03 0.03 0.03 <t< td=""><td>Constant</td><td>3.33</td><td>0.09</td><td></td><td>35.83</td><td>000.</td><td>2.72</td><td>0.07</td><td></td><td>41.35</td><td>000</td><td>3.00</td><td>80.0</td><td></td><td>37.68</td><td>000</td></t<>	Constant	3.33	0.09		35.83	000.	2.72	0.07		41.35	000	3.00	80.0		37.68	000
-0.02 0.01 13 -2.17 .031 -0.02 0.01 18 -3.05 .002 -0.02 0.01 14 -2.28 0.25 0.11 .11 2.25 .025 0.07 0.08 .05 .359 0.08 0.10 .04 0.01 .04 0.02 .359 0.08 0.09 .05 .05 0.09 .010 .04 0.01 .01 .07 .08 .05 .05 .09 .09 .09 .00 0.00 .00	Org. experience	-0.01	0.01	11	-1.90	050.	0.00	0.01	00.	0.05	.963	0.01	0.01	80.	1.39	.165
0.25 0.11 .11 2.25 0.025 0.08 0.05 0.92 359 0.08 0.10 0.4 0.10 0.4 0.12 0.01 0.04 .02 0.34 737 0.08 0.03 1.2 2.53 0.12 0.00 0.04 0.1 0.12 0.22 0.09 .12 2.38 0.18 0.18 0.07 1.4 2.84 0.05 0.30 0.09 0.30 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.01 0.01 0.00 0.01 0.01 0.00 0.01 0.01 0.09 0.29 0.01 0.01 0.09 0.29 0.01 0.01 0.09 0.29 0.01 0.01 0.09 0.09 0.09 0.09 0.01 0.01 0.01 0.01 0.01 0.09 0.09 0.01 0.01 0.01 0.01 0.01 0.01 0.01	Job experience	-0.02	0.01	13	-2.17	.031	-0.02	0.01	18	-3.05	.002	-0.02	0.01	14	-2.28	.023
0.01 0.04 .02 0.34 .737 0.08 0.03 .12 2.53 .012 0.00 0.04 .01 0.01 0.04 .01 0.03 .12 2.53 .012 0.00 0.04 .01 0.01 0.01 .14 2.84 .005 0.03 .19 3.86 .09 .010 .00 0.01 .01 0.09 929 0.01 .01 .08 .09 .01 .01 0.09 .029 .001 .01 .00 .029 .001 .00 .01 .00 .01 .00 .00 .00 .01 .00	Education	0.25	0.11	11.	2.25	.025	0.07	0.08	.05	0.92	.359	0.08	0.10	.04	0.87	.383
0.22 0.09 .12 2.38 .018 0.01 .14 2.84 .005 0.30 0.08 .19 3.86 3.49 0.14 25.69 .000 2.76 0.10 .09 929 0.01 .012 .26.93 -0.02 0.01 -1.3 -2.10 .036 0.00 0.01 .01 0.09 929 0.01 .013 2.15 -0.02 0.01 -1.8 -3.01 .009 .929 0.01 .013 .021 0.29 0.01 -1.2 -2.01 .045 -0.02 0.01 -1.8 -3.01 .009 .021 .021 .022 .021 .022 .021 .022 .021 .022 .021 .022 .021 .022 .022 .022 .023 .022 .024 .026 .020 .021 .024 .026 .020 .021 .024 .026 .029 .021 .021 .022 .023 .023 <td>Female hierarchy</td> <td>0.01</td> <td>0.04</td> <td>.02</td> <td>0.34</td> <td>.737</td> <td>0.08</td> <td>0.03</td> <td>.12</td> <td>2.53</td> <td>.012</td> <td>0.00</td> <td>0.04</td> <td>.01</td> <td>0.12</td> <td>905</td>	Female hierarchy	0.01	0.04	.02	0.34	.737	0.08	0.03	.12	2.53	.012	0.00	0.04	.01	0.12	905
3.49 0.14 25.69 .000 2.76 0.10 29.10 .000 3.11 0.12 26.93 -0.02 0.01 -1.3 -2.10 .036 0.00 0.01 .01 0.09 929 0.01 0.01 .08 1.28 -0.02 0.01 -1.2 -2.01 .045 -0.02 0.01 -1.8 -3.01 .003 -0.02 0.01 -1.8 -3.01 .009 .029 0.01 0.01 .01 0.09 .029 0.01 0.01 0.01 -1.1 0.02 0.01 -1.1 0.03 -0.02 0.01 -1.8 -3.01 .009 0.09 0.01 -1.1 0.03 0.02 0.01 -1.1 0.09 0.09 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.02 0.01 0.01 0.01 0.01 0.01	Relationship status	0.22	0.09	.12	2.38	.018	0.18	0.07	1.	2.84	.005	0.30	80.0	.19	3.86	000
3.49 0.14 25.69 .000 2.76 0.10 29.10 .000 3.11 0.12 26.93 -0.02 0.01 -1.3 -2.10 .036 0.00 0.01 .01 0.09 929 0.01 0.01 .08 1.28 -0.02 0.01 -1.2 -2.10 .045 -0.02 0.01 -3.01 0.09 929 0.01 0.01 .08 1.28 -3.01 0.03 -0.02 0.01 -1.18 -3.01 0.09 0.01 -1.18 -2.15 -2.15 -2.15 -2.15 0.02 0.01 -1.06 1.28 0.09 0.01 -1.19 -2.15 0.11 0.08 0.08 1.05 1.10 0.09 0.01 1.15 1.15 1.15 1.15 1.16 1.15 1.16 0.09 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.02 0.01 0.02 0.01	Step 2															
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-0.02 0.01 -1.2 -2.01 .045 -0.02 0.01 -1.8 -3.01 .003 -0.02 0.01 -1.3 -2.15 0.29 0.11 .13 2.54 .011 0.08 .05 1.06 2.88 0.09 0.10 .05 0.94 0.09 0.01 .13 2.54 .011 0.08 .05 1.24 0.05 0.00 .09 .09 0.00 .09 .09 0.00 .00 .00 0.00 .00	Org. experience	-0.02	0.01	13	-2.10	.036	0.00	0.01	.01	0.09	926	0.01	0.01	80.	1.28	.201
0.29 0.11 1.3 2.54 0.11 0.08 0.08 0.05 1.06 2.88 0.09 0.10 0.05 0.94 0.09 0.00 0.07 0.11 1.32 1.88 0.07 0.05 1.2 1.54 1.24 0.05 0.06 0.07 0.91 1.30 0.17 0.13 0.09 1.30 0.19 0.00 0.09 0.08 0.09 0.00 0.10 0.19 0.11 1.2 1.76 0.09 0.00 0.01 0.10 0.12 0.24 0.26 0.08 0.034 0.14 0.22 0.234 0.04 0.02 0.15 0.15 0.10 0.11 0.12 0.02 0.03 0.03 0.01 0.13 0.09 0.18 0.09 0.18 0.09 0.18 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Job experience	-0.02	0.01	12	-2.01	.045	-0.02	0.01	18	-3.01	.003	-0.02	0.01	13	-2.15	.032
0.09 0.07 1.1 1.32 1.88 0.07 0.05 1.2 1.54 1.24 0.05 0.06 0.07 0.01 1.2 1.54 1.14 0.05 0.06 0.07 0.01 1.2 1.76 0.17 0.13 0.09 1.30 0.19 0.10 0.09 0.08 1.10 2.71 0.19 0.11 1.12 1.76 1.76 0.04 0.17 0.12 0.12 0.12 0.24 0.26 0.08 0.034 0.14 0.22 0.2.34 0.14 0.22 0.2.34 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	Education	0.29	0.11	.13	2.54	.011	0.08	0.08	.05	1.06	.288	0.09	0.10	.05	0.94	.349
0.17 0.13 0.09 1.30 1.93 0.10 0.09 0.08 1.10 2.71 0.19 0.11 1.2 1.76 1.76 1.04 0.17 1.22 1.24 1.016 1.017 1.22 1.24 1.016 1.017 1.22 1.24 1.016 1.017 1.22 1.24 1.016 1.017 1.22 1.24 1.016 1.017 1.24 1.25 1.24 1.016 1.017 1	Female hierarchy	0.09	0.07	11.	1.32	.188	0.07	0.05	.12	1.54	.124	0.05	90.0	.07	0.91	366
-0.41 0.1722 -2.41 0.16 -0.32 0.1224 -2.66 0.08 -0.34 0.1422 -2.34	Relationship status	0.17	0.13	60.	1.30	.193	0.10	0.09	80.	1.10	.271	0.19	0.11	.12	1.76	620.
-0.27 0.18 -1.5 -1.54 -1.15 -0.12 -0.09 -0.97 .333 -0.29 0.15 -1.97 -1.97 -0.15 0.10 -1.11 -1.44 .151 -0.07 0.07 -0.7 -0.94 .350 -0.13 0.09 -111 -1.46 0.09 0.18 .04 0.47 .640 0.20 0.13 .12 1.52 .128 0.25 0.16 .15 1.60 r 0.58 0.23 .30 2.49 .013 0.49 0.16 .36 3.00 .003 0.61 0.20 .37 3.08	Gender	-0.41	0.17	22	-2.41	910.	-0.32	0.12	24	-2.66	800°	-0.34	0.14	22	-2.34	.020
-0.15 0.1011 -1.44 .151 -0.07 0.0707 -0.94 .350 -0.13 0.0911 -1.46 .160 0.09 0.18 .04 0.47 .640 0.20 0.13 .12 1.52 .128 0.25 0.16 .12 1.60 1.60 1.60 0.23 .30 2.49 .013 0.49 0.16 .36 3.00 .003 0.61 0.20 .37 3.08	Supervisor gender	-0.27	0.18	15	-1.55	.121	-0.12	0.12	09	-0.97	.333	-0.29	0.15	19	-1.97	.049
0.09 0.18 .04 0.47 .640 0.20 0.13 .12 1.52 .128 0.25 0.16 .12 1.60 0.58 0.23 .30 2.49 .013 0.49 0.16 .36 3.00 .003 0.61 0.20 .37 3.08	Gender × female hierarchy	-0.15	0.10	11	-1.44	.151	-0.07	0.07	07	-0.94	.350	-0.13	0.09	11	-1.46	.146
0.58 0.23 .30 2.49 .013 0.49 0.16 .36 3.00 .003 0.61 0.20 .37 3.08	Gender × relation- ship status	0.09	0.18	.04	0.47	.640	0.20	0.13	.12	1.52	.128	0.25	0.16	.12	1.60	.112
	Gender × supervisor gender	0.58	0.23	.30	2.49	.013	0.49	0.16	.36	3.00	.003	0.61	0.20	.37	3.08	.002

are dummy-coded variables. Changes in R^2 =.072 (step 1) to .085 (step 2) for leadership aspiration, change in R^2 = .068 (step 1) to .103 (step 2) for support, change in R^2 = .049 (step 1) to .078 (step 2) for control. Note: Gender (1 = female, 0 = male), supervisor gender (1 = female, 0 = male), education (1 = Master's, 0 = other), and relationship status (1 = married, 0 = other)

gender was significant (b = 0.58, SE = 0.23, p = .01). To determine the nature of this interaction, we conducted simple slope analyses according to Aiken and West (1991), switching the dummy coding for supervisor gender to determine slopes for male and female supervisors. The analyses showed that subordinate gender was negatively related to leadership aspiration (i.e., lower aspiration for women) when the supervisor was male (b = -0.41, SE = 0.17, p = .02), and not related to leadership aspiration when the supervisor was female (b = 0.17, SE = 0.18, p = .33)—see Figure 2. Thus, in line with Hypothesis 1, we can conclude that gender differences in leadership aspiration were only observed with a male supervisor and not with a female supervisor.

Support

We conducted a hierarchical regression for support with the same set of predictors (see Table 2). Overall, women received less supervisor support than men (b = -0.32, SE = 0.12, p = .01). In line with Hypothesis 2, there was a significant effect for the gender by supervisor gender interaction term. To further explore the interaction, we determined simple slopes (see Figure 3). Results supported Hypothesis 2: women experienced lower support than men with a male supervisor (b = -0.32, SE = 0.12, p = .01), but gender was not related to support with a female supervisor (b = 0.18, SE = 0.13, p = .16).

Job Control

We conducted a hierarchical regression for job control with the same set of predictors (see Table 2). As with supervisor support, overall women

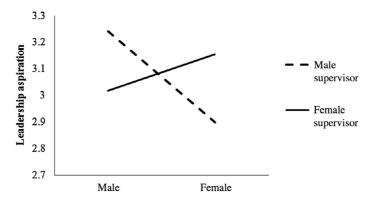


FIGURE 2. The interaction of gender and supervisor gender on leadership aspiration (male supervisor, b = -0.41, SE = 0.17, p = .02, female supervisor b = 0.17, SE = 0.18, p = .33).

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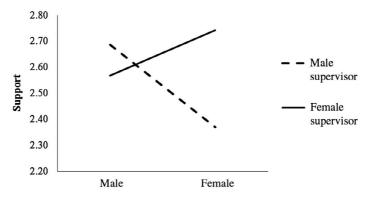


FIGURE 3. The interaction of gender and supervisor gender on support (male supervisor: b = -0.32, SE = 0.12, p = .01, female supervisor: b = 0.18, SE = 0.13, p = .16).

experienced less job control than men (b = -0.34, SE = 0.14, p = .02). In support of Hypothesis 3, there was a gender × supervisor gender interaction. Simple slope analyses (see Figure 4) indicated that women experienced lower job control than men with a male supervisor (b = -0.34, SE = 0.14, p = .02), but gender was unrelated to job control with a female supervisor (b = 0.28, SE = 0.15, p = .07).

We also conducted a supplementary analysis, running the same regression models without controls (Spector & Brannick, 2011; see the online Appendix for results). The pattern of results was by and large the same as for the analysis with controls, with the most notable deviation that the interaction on leadership aspiration is not significant. This is consistent with the notion that when we do not filter out some of the variation that is not related to the role of supervisor gender, we may have lower power for the test of this specific relationship.

Mediation Analyses

To test Hypotheses 4a and b (mediation of the moderated effect), we employed a basic mediation model, with a direct effect of the interaction on leadership aspiration as well as an indirect effect of interaction mediated by support and control (Edwards & Lambert, 2007). To conduct this test, we used the bootstrapping approach in PROCESS (Hayes, 2013). Bootstrapping indirect effects is considered to be a superior technique to test mediation because it builds the conclusion on the estimate of the indirect effect itself (Hayes, 2009). It is therefore considered to be a

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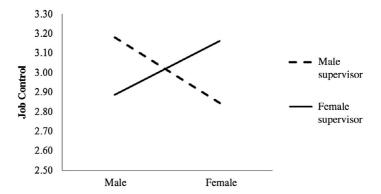


FIGURE 4. The interaction of gender and supervisor gender on job control (male supervisor: b = -0.34, SE = 0.14, p = .02, female supervisor: b = 0.28, SE = 0.15, p = .07).

powerful and valid technique for mediation testing (Hayes, 2009; Williams & MacKinnon, 2008) because it better respects distribution irregularities of the sample and thus results in "inferences that are more likely to be accurate" (Hayes, 2013, p. 106). To test mediation for the interaction, we used 5,000 bootstraps for the bias corrected bootstrap confidence intervals of 0.95 (see Table 3 for a summary of results). The confidence intervals of the indirect effect of both support (lower limit confidence interval (LCI) = 0.05 and upper limit confidence interval (UCI) = 0.30; effect = 0.15, Boot SE = 0.06) and job control (LCI = 0.12 and UCI = 0.61; effect = 0.35, Boot SE = 0.13) did not contain 0. Therefore, we conclude that job control and

TABLE 3 Mediation Analyses

	b	SE	t	p	BOOTLLCI	BOOTULCI
Total effect IV on DV	0.30	0.21	1.43	.152		
Total indirect effect of IV through both mediators	0.50	0.16			0.206	0.811
Indirect effect of IV through mediator "support"	0.35	0.13			0.121	0.610
Indirect effect of IV through mediator "control"	0.15	0.06			0.049	0.302
Direct effect of IV to DV after controlling for mediators	0.09	0.19	0.45	.657	-0.295	0.468

Note: IV = independent variable (interaction term of gender and supervisor gender); DV = dependent variable (leadership aspiration).

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support mediated the interactive effect of gender and supervisor gender on leadership aspiration, supporting Hypotheses 4a and 4b. Including mediators, the interaction term was non-significant (b = 0.09, SE = 0.19, p = .66), suggesting full mediation for the interaction. This suggests that the gender by supervisor gender interaction is adequately explained by variations in supervisor support and experienced job control.

DISCUSSION

There is not only evidence of the under-representation of women in leadership positions, but also evidence suggesting that gender-biased barriers to leadership advancement may result in lower leadership aspiration for women. This hints at an unfortunate self-fulfilling prophecy in which the biases that stand in the way of women's leadership advancement also work to reduce their aspiration to strive for leadership advancement. This exacerbates the problem of the under-representation of women in leadership positions. Gender biases in leadership perceptions are well understood, as outlined in role congruity theory (Eagly & Karau, 2002), and the analysis of stereotype-based biases provides a powerful explanation for the barriers women encounter in leadership advancement (Eagly & Carli, 2007). Less documented and less well understood are gender differences in leadership aspiration, and in the current study we contribute to research in gender and leadership by extending the role congruity theory perspective to address moderation and mediation in the relationship between gender and leadership aspiration. We focused on supervisor gender from the perspective that gender biases lie at the core of the influences that may discourage women's leadership aspiration, and men have a more gendered understanding of leadership than women. We find support for the hypotheses that women have higher leadership aspiration with a female supervisor than with a male supervisor, because they experience more support and job control with a female than with a male supervisor, whereas men's leadership aspiration is less affected by supervisor gender. These findings are both important in the further development of the role congruity perspective on gender and leadership and from a practical perspective.

Theoretical Implications

We highlight three theoretical implications of our study. First, building on its analysis of gender differences in leadership perceptions (Eagly & Karau, 2002), we extend role congruity theory to leadership aspiration. This highlights that the under-representation of women in leadership positions may not only be attributable to gender-biased barriers to leadership advancement, but also to the effect gender biases have in discouraging women's

leadership aspiration. This is important because it presents a counterpoint to gender-biased suggestions that women may be less motivated for leadership positions as the result of an innate sex difference rather than gender biases. That is, evidence of gender differences in leadership aspiration could also be misconstrued as a legitimation of the under-representation of women in leadership positions, and from that perspective it is key that we can show that an analysis in terms of gender biases predicts when gender differences in leadership aspiration are observed. Further developing this point, it would be valuable for future research to establish that supervisor gender effects are indeed explained by gender differences in how gendered leadership perceptions are (Koenig et al., 2011). It would also be valuable to establish that gender differences in leadership aspiration contribute to gender differences in leadership advancement (cf. Tharenou, 2001).

Second, in focusing on supervisor gender, we have explicated what remains implicit in role congruity theory: gender-biased barriers to women's leader-ship advancement point to who the others are that women are dependent on for their leadership advancement. In the present study, we focused on the individual's direct supervisor. Future research may extend this analysis to salient others at work as well as at home (cf. Eagly & Carli, 2007; Gartzia & van Knippenberg, 2016). Future research may also shift the focus from the others' gender to the underlying mechanism: gendered construal of leader-ship (Eagly & Karau, 2002) in which people may differ as a function of other variables than their gender.

Third, in identifying support and job control as mediating mechanisms, we have provided another anchor to further develop the current perspective. Our mediation analysis suggests that the experience of support and control are the more proximal drivers of leadership aspiration. We may thus explore whether other factors that influence support or control can substitute for the role of the supervisor. Indeed, our logic to predict that men's leadership aspiration would be less affected by supervisor gender was that men could draw on a broader network for support and control than women (Cannings & Montmarquette, 1991; Jackson, 2001; Lyness & Thompson, 2000; McDonald, 2011) and would therefore be less affected by supervisor gender in their leadership aspiration. Developing this perspective, future research may explore whether variations in women's social networks predict their experience of support and control at work, and thus their leadership aspiration.

Practical Implications

Our findings suggest implications for practice in terms of creating a work environment more conducive to women's leadership aspiration. A first implication runs the risk of sounding circular, but we believe it is not. The benefits of female supervisors for women's leadership aspiration suggest that women's leadership ambitions benefit from more women leaders. One implication of this observation is that our results suggest that moving from no or very few women leaders to more is the most difficult part. As more women assume leadership positions it should become easier to foster the leadership aspiration of future generations of women leaders. This could suggest that more drastic, and not universally positive, measures such as quota for women leadership could play a role in creating the critical mass for the more organic growth of women's representation in leadership positions.

Another implication that would need further research to back it up could be that there may be benefits in "institutionalised" ways to substitute for supervisor support and control. An example would be connecting women with women leaders within the organisation even when they are not their direct supervisor. When women are connected with a women leader who has the resources to provide support and job control at least to some extent, this could possibly help address this disadvantage of a male supervisor. Such institutionalised measures need not be limited to women-to-women connections. Work-life programmes can be particularly important to women's sense of job control and ambition (Pas et al., 2014; Thomas & Ganster, 1995), and female leadership programmes might be developed with the explicit aim to provide career support independent of the more discretionary role of supervisors in this respect.

Put differently, our results are important in identifying support and control as resources important to leadership aspiration for which women are at a disadvantage. Measures that organisations can take to provide support and control in bias-free ways may be important in facilitating women's leadership aspiration. Access to such measures should not be contingent on subjective judgments of potential that are easily gender-biased nor on employees' self-promotion behaviour as women, in contrast to men, experience negative social as well as economic consequences for self-promoting behaviour (Moss-Racusin & Rudman, 2010; Rudman & Glick, 2001). Such measures could, for instance, be categorical to all employees at a certain job level. In addition, it would make sense to offer supervisors sensitivity training regarding implicit biases to treat and support male and female subordinates equally. Bias awareness is no silver bullet, but when it motivates supervisors to more carefully consider their assessment of and behaviour towards their subordinates, it should increase the chance that they look beyond gender-based perceptions (cf. Fiske & Neuberg, 1990).

Limitations and Directions for Future Research

Our study is a cross-sectional survey and cannot speak to matters of causality. Also, whereas our key findings concern the influence of the

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non-perceptual variables gender and supervisor gender for which common method variance is not a concern, the relationships between our mediators and leadership aspiration are percept-percept relationships for which common method variance could play a role. The stronger evidence, thus, is for the gender by supervisor interactions on mediators and leadership aspiration. Future research would ideally establish that (field-)experimental manipulation of support and control results in higher leadership aspiration especially for women.

We anchored our analysis on gender biases and the assumption that female supervisors would show less gender bias than male supervisors. This assumption is research-based, but even so it is a limitation that we do not have data to speak to this directly. As we also noted in considering the theoretical implications of our findings, gender will not be the only predictor of differences between supervisors in gender bias, and in further developing the current analysis it would be particularly valuable to include direct measures of such gender biases.

Our sample was not selected to be representative of a particular research population, but to contain equal numbers of men and women. Findings should thus be interpreted in terms of how relationships speak to theory and not generalised to any particular population.

We measured supervisor support and job control by asking subordinates. Supervisors' assessment of support and control may vary from subordinates' (van Gils, van Quaquebeke, & van Knippenberg, 2010) and subordinates' assessment is not necessarily more accurate. The more proximal influence on leadership aspiration arguably is the subjective experience of support and control, and in that sense the current measurement is appropriate, but the role of supervisors' experience may be worth exploring further.

Leadership aspiration may be important, but ideally we would also have more objective outcome evidence for actual leadership attainment. Whereas leadership aspiration can be assumed to be related to leadership attainment, we should not equate the two. For the issue of gender and leadership in particular, there may be further contingencies of the relationship between aspiration and attainment that would be worth documenting. Given identical leadership aspiration, women would still face a harder time attaining leadership positions. Hence, it would be valuable to explore further which role is played by the factors feeding into leadership aspiration in translating aspiration to attainment.

CONCLUSION

The importance of increasing the percentage of women within leadership positions is widely recognised. Targets, such as having 40 per cent female

members on executive boards in the EU, have for instance been defined (European Commission, 2013). Our findings point to some important areas for future research in this respect as well as to implications for practice when seeking to enhance women's leadership aspiration.

REFERENCES

- Abele, A.E., & Spurk, D. (2009). The longitudinal impact of self-efficacy and career goals on objective and subjective career success. *Journal of Vocational Behavior*, 74, 53–62.
- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions.* Thousand Oaks, CA: Sage.
- Ajzen, I., & Madden, T.J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology*, 22, 453–474.
- Barnett, R.C., Carr, P., Boisnier, A.D., Ash, A., Friedman, R.H., Moskowitz, M.A., & Szalacha, L. (1998). Relationships of gender and career motivation to medical faculty members' production of academic publications. *Academic Medicine*, 73, 180–186.
- Becker, T.E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, 8, 274–289.
- Bianchi, S.M., Robinson, J.P., & Milke, M.A. (2006). *The changing rhythms of American family life*. New York City: Russell Sage Foundation.
- Birnbaum, M.H. (2004). Human research and data collection via the Internet. *Annual Review Psychology*, 55, 803–832.
- Bulmer, J. (2013). Leadership aspirations of registered nurses: who wants to follow us? *Journal of Nursing Administration*, 43, 130–134.
- Burke, R.J. (2002). Organizational values, job experiences and satisfactions among managerial and professional women and men: advantage men? *Women in Management Review*, 17, 228–236.
- Cannings, K., & Montmarquette, C. (1991). Managerial momentum: A simultaneous model of the career progress of male and female managers. *Industrial and Labor Relations Review*, 44, 212–228.
- Carlson, K.D., & Wu, J. (2011). The illusion of statistical control: Control variable practice in management research. *Organizational Research Methods*, 1, 1–23.
- Cohen, A.N., Hammen, C., Henry, R.M., & Daley, S.E. (2004). Effects of stress and social support on recurrence in bipolar disorder. *Journal of Affective Disorders*, 82, 143–147.
- Cooke, F.L., & Xiao, Y. (2014). Gender roles and organizational HR practices: The case of women's careers in accountancy and consultancy firms in China. *Human Resource Management*, 53, 23–44.
- Day, R., & Allen, T.D. (2004). The relationship between career motivation and self-efficacy with protégé career success. *Journal of Vocational Behavior*, 64, 72–91.
- © 2019 The Authors. *Applied Psychology* published by John Wiley & Sons Ltd on behalf of International Association of Applied Psychology.

- Eagly, A.H., & Carli, L.L. (2007). *Through the labyrinth*. Boston, MA: Harvard Business School Press.
- Eagly, A.H., & Karau, S.J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, 109, 573–598.
- Eagly, A.H., Karau, S.J., Miner, J.B., & Johnson, B.T. (1994). Gender and motivation to manage in hierarchic organizations: A meta-analysis. *The Leadership Quarterly*, 5, 135–159.
- Edwards, J.R., & Lambert, L.S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods*, *12*, 1–22.
- European Commission. (2013). Women and men in leadership positions in the European Union, 2013. Retrieved from: http://ec.europa.eu/justice/gender-equality/files/gender_balance_decision_making/131011_women_men_leadership_en.pdf
- European Commission. (2016, November 1). *Gender balance in decision-making positions*. Retrieved from: http://ec,europa,eu/justice/gender-equality/gender-decision-making/index_en,htm
- Eurostat. (2015). Women earned on average 16% less than men in 2013 in the EU. Retrieved from: https://www.google.nl/url?sa=t&rct=j&q=&esrc=s&sourc e=web&cd=1&ved=0CCIQFjAAahUKEwjf5bTVruzHAhWCfhoKHRKRALY &url=http%3A%2F%2Fec.europa.eu%2Feurostat%2Fdocuments%2F299 5521%2F6729998%2F3-05032015-AP-EN.pdf&usg=AFQjCNFgULQE9Ea MEBErmSO3K4tOodX5vg&cad=rja
- Evans, J.R., & Mathur, A. (2005). The value of online surveys. *Internet Research*, 15, 195–219.
- Farmer, H.S. (1997). Women's motivation related to mastery, career salience, and career aspiration: A multivariate model focusing on the effects of sex role socialization. *Journal of Career Assessment*, 5, 355–381.
- Fiske, S.L., & Neuberg, S.L. (1990). A continuum of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. *Advances in Experimental Social Psychology*, 23, 1–74.
- Fritz, C., & van Knippenberg, D. (2017). Gender and leadership aspiration: The impact of organizational identification. *Leadership & Organization Development Journal*, 38, 1018–1037.
- Gartzia, L., & van Knippenberg, D. (2016). Too masculine, too bad: Effects of communion on leaders' promotion of cooperation. *Group & Organization Management*, 41, 458–490.
- Gbadamosi, G., Evans, C., Richardson, M., & Ridolfo, M. (2015). Employability and students' part-time work in the UK: does self-efficacy and career aspiration matter? *British Educational Research Journal*. https://doi.org/10.1002/berj.3174
- Gray, M.P., & O'Brien, K.M. (2007). Advancing the assessment of women's career choices: The Career Aspiration Scale. *Journal of Career Assessment*, 15, 317–337.
- Hayes, A.F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76, 408–420.
- Hayes, A.F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- © 2019 The Authors. *Applied Psychology* published by John Wiley & Sons Ltd on behalf of International Association of Applied Psychology.

- Heilman, M.E. (2001). Description and prescription: How gender stereotypes prevent women's ascent up the organizational ladder. *Journal of Social Issues*, *57*, 657–674.
- Holt, H., & Lewis, S. (2011). "You can stand on your head and still end up with lower pay": Gliding segregation and gendered work practices in Danish "family-friendly" workplaces. *Gender, Work & Organization*, 18, 202–221.
- Hoobler, J.M., Lemmon, G., & Wayne, S.J. (2014). Women's managerial aspirations: An organizational development perspective. *Journal of Management*, 40, 703–730.
- House, J.S. (1981). Work stress and social support. Reading, MA: Addison Wesley.
- Hoyt, C.L., & Murphy, S.E. (2016). Managing to clear the air: Stereotype threat, women, and leadership. *The Leadership Quarterly*, 27, 387–399.
- Jackson, C.J. (2001). Women middle managers' perception of the glass ceiling. *Women in Management Review*, 16, 30–41.
- Karami, R., Ismail, M., & Sail, R. (2011). Gender identity and career aspiration to top management of Malaysian graduate students. Asia Pacific Journal of Education, 31, 439–454.
- Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P., & Amick, B. (1998). The job content questionnaire (JCQ): An instrument for internationally comparative assessments of psychosocial job characteristics. *Journal of Occupational Health Psychology*, 3, 322–355.
- Khattab, J., van Knippenberg, D., Nederveen Pieterse, A., & Hernandez, M. (in press). A network utilization perspective on the leadership advancement of minorities. *Academy of Management Review*.
- Kirkman, B.L., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42, 58–74.
- Klimusová, H., Burešová, I., & Bartošová, K. (2015). Academic aspirations of primary school students in the context of parenting styles. In N.E. Mastorakis (Ed.), *Recent advances in education and eductional technologies* (pp. 20–23). Barcelona: EET.
- Koenig, A.M., Eagly, A.H., Mitchell, A.A., & Ristikari, T. (2011). Are leader stereotypes masculine? A meta-analysis of three research paradigms. *Psychological Bulletin*, 137, 616–642.
- Konrad, A.M., Ritchie, J.E. Jr, Lieb, P., & Corrigall, E. (2000). Sex differences and similarities in job attribute preferences: A meta-analysis. *Psychological Bulletin*, *126*, 593–641.
- Kossek, E.E., Lautsch, B.A., & Eaton, S.C. (2006). Telecommuting, control and boundary management: Correlates of policy use and practice, job control, and work–family effectiveness. *Journal of Vocational Behavior*, 68, 347–367.
- Li, J., Yang, W., & Cho, S.I. (2006). Gender differences in job strain, effort-reward imbalance, and health functioning among Chinese physicians. *Social Science & Medicine*, 62, 1066–1077.
- Litzky, B., & Greenhaus, J. (2007). The relationship between gender and aspirations to senior management. *Career Development International*, 12, 637–659.
- Locke, E.A., & Latham, G.P. (1990). A theory of goal setting and task performance. Englewood Cliffs, NJ: Prentice-Hall.
- © 2019 The Authors. *Applied Psychology* published by John Wiley & Sons Ltd on behalf of International Association of Applied Psychology.

- London, M. (1993). Relationships between career motivation, empowerment and support for career development. *Journal of Occupational and Organizational Psychology*, 66, 55–69.
- Lyness, K.S., & Thompson, D.E. (2000). Climbing the corporate ladder: Do female and male executives follow the same route? *Journal of Applied Psychology*, 85, 86–101.
- Maggiori, C., Johnston, C.S., & Rossier, J. (2016). Contribution of personality, job strain, and occupational self-efficacy to job satisfaction in different occupational contexts. *Journal of Career Development*, 43, 244–259.
- Mattis, M. (2001). Advancing women in business organizations: Key leadership roles and behaviors of senior leaders and middle managers. *Journal of Management Development*, 20, 371–388.
- McCarty Kilian, C., Hukai, D., & McCarty, C.E. (2004). Building diversity in the pipeline to corporate leadership. *Journal of Management Development*, 24, 155–168.
- McDonald, S. (2011). What's in the "old boys" network? Accessing social capital in gendered and racialized networks. *Social Networks*, *33*, 317–330.
- McGuire, G.M. (2000). Gender, race, ethnicity, and networks: The factors affecting the status of employees' network members. *Work and Occupations*, 27, 500–523.
- Milner, A., Smith, P., & LaMontagne, A.D. (2015). Working hours and mental health in Australia: Evidence from an Australian population-based cohort, 2001–2012. *Occupational and Environmental Medicine*, 72, 573–579.
- Morrison, A.M., White, R.P., & Velsor, E.V. (1987). *Breaking the glass ceiling*. Reading, MA: Addison-Wesley.
- Moss-Racusin, C.A., & Rudman, L.A. (2010). Disruptions in women's self-promotion: The backlash avoidance model. *Psychology of Women Quarterly*, 34, 186–202.
- Noe, R.A., Noe, A.W., & Bachhuber, J.A. (1990). An investigation of the correlates of career motivation. *Journal of Vocational Behavior*, *37*, 340–356.
- Oakley, J.G. (2000). Gender-based barriers to senior management positions: Understanding the scarcity of female CEOs. *Journal of Business Ethics*, 27, 321–334.
- Pachulicz, S., Schmitt, N., & Kuljanin, G. (2008). A model of career success: A longitudinal study of emergency physicians. *Journal of Vocational Behavior*, 73, 242–253.
- Pas, B.R., Lagro-Janssen, A.L., Doorewaard, J.A., Eisinga, R.N., & Peters, C.P. (2008). Gender differences in career motivation: Female doctors' ambitions benefit from family friendly work environment. *Nederlands Tijdschrift voor Geneeskunde*, 152, 2172–2176.
- Pas, B.R., Peters, P., Doorewaard, H., Eisinga, R., & Lagro-Janssen, T. (2014). Supporting "superwomen"? Conflicting role prescriptions, gender-equality arrangements and career motivation among Dutch women physicians. *Human Relations*, 67, 175–204.
- Phelan, J.E., Moss-Racusin, C.A., & Rudman, L.A. (2008). Competent yet out in the cold: Shifting criteria for hiring reflect backlash toward agentic women. *Psychology of Women Quarterly*, 32, 406–413.
- © 2019 The Authors. *Applied Psychology* published by John Wiley & Sons Ltd on behalf of International Association of Applied Psychology.

- Ridgeway, C. (1991). The social construction of status value: Gender and other nominal characteristics. *Social Forces*, 70, 367–386.
- Ridgeway, C.L. (2001). Gender, status, and leadership. *Journal of Social Issues*, 57, 637–655.
- Rogers, J. (2005) Aspiring to leaderhip: Identifying teacher-leaders. *Medical Teacher*, 27, 629–633.
- Roth, P.L., Purvis, K.L., & Bobko, P. (2012). A meta-analysis of gender group differences for measures of job performance in field studies. *Journal of Management*, 38, 719–739.
- Rudman, L.A., & Glick, P. (2001). Prescriptive gender stereotypes and backlash toward agentic women. *Journal of Social Issues*, *57*, 743–762.
- Savery, L.K. (1990). Men and women in the workplace: Evidence of occupational differences. *Leadership & Organization Development Journal*, 11, 13–16.
- Scandura, T.A. (1992). Mentorship and career mobility: An empirical investigation. *Journal of Organizational Behavior*, *13*, 169–174.
- Schein, V.E. (1978). Sex role stereotyping, ability and performance: Prior research and new directions. *Personnel Psychology*, *31*, 259–268.
- Scholarios, D., & Taylor, P. (2011). Beneath the glass ceiling: Explaining gendered role segmentation in call centres. *Human Relations*, 64, 1291–1319.
- Schoon, I., & Polek, E. (2011). Teenage career aspirations and adult career attainment: The role of gender, social background and general cognitive ability. *International Journal of Behavioral Development*, *35*, 210–217.
- Schoon, I., Martin, P., & Ross, A. (2007). Career transitions in times of social change. His and her story. *Journal of Vocational Behavior*, 70, 78–96.
- Singer, M. (1991). The relationship between employee sex, length of service and leadership aspirations: A study from valence, self-efficacy and attribution perspectives. *Applied Psychology*, 40, 417–436.
- Spector, P.E., & Brannick, M.T. (2011). Methodological urban legends: The misuse of statistical control variables. *Organizational Research Methods*, *14*, 287–305.
- Tharenou, P. (2001). Going up? Do traits and informal social processes predict advancing in management? *Academy of Management Journal*, 44, 1005–1017.
- Tharenou, P., & Terry, D.J. (1998). Reliability and validity of scores on scales to measure managerial aspirations. *Educational and Psychological Measurement*, 58, 475–492.
- Tharenou, P., Latimer, S., & Conroy, D. (1994). How do you make it to the top? An examination of influences on women's and men's managerial advancement. *Academy of Management Journal*, *37*, 899–931.
- Thomas, L.T., & Ganster, D.C. (1995). Impact of family-supportive work variables on work–family conflict and strain: A control perspective. *Journal of Applied Psychology*, 80, 6–15.
- van Gils, S., van Quaquebeke, N., & van Knippenberg, D. (2010). The X-factor: On the relevance of implicit leadership and followership theories for leader-member exchange agreement. *European Journal of Work and Organizational Psychology*, 19, 333–363.
- Van Vianen, A.E.M., & Keizer, W.A. (1996). Gender differences in managerial intention. *Gender, Work & Organization*, 3, 103–114.
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768 FRITZ AND VAN KNIPPENBER

- Van Yperen, N.W., & Hagedoorn, M. (2003). Do high job demands increase intrinsic motivation or fatigue or both? The role of job control and job social support. *Academy of Management Journal*, 46, 339–348.
- Williams, J., & MacKinnon, D.P. (2008). Resampling and distribution of the product methods for testing indirect effects in complex models. *Structural Equation Modeling*, 15, 23–51.
- Yeagley, E.E., Subich, L.M., & Tokar, D.M. (2010). Modeling college women's perceptions of elite leadership positions with social cognitive career theory. *Journal of Vocational Behavior*, 77, 30–38.

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