

## RESEARCH ARTICLE

# Footsteps I would like to follow? How gender quotas affect the acceptance of women leaders as role models and inspirations for leadership

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## Abstract

This research examines how the method of selecting women leaders affects other women's leadership interest. The results of three experiments ( $N = 1,015$ ) indicated that only when women leaders were selected due to merit, not quota-based policies, did they boost female participants' interest in a leadership position. These reactions were mediated by perceptions of the woman leader's deservingness of her position (Studies 1–3) and consequent acceptance as a role model (Studies 2 and 3). Accordingly, success information validating quota-based selected leaders' competence provided a boost in leadership interest equal to that of merit-based selected leaders (Study 2). For male participants, quota but not merit-based selected women leaders lowered interest in leadership due to their pessimistic assessment of the probability of being selected (Study 1). These results suggest that a wise implementation of quota regulations includes validating women's competence so they are perceived as deserving of their leader roles and can thus serve as inspiring role models.

## KEYWORDS

gender quotas, leadership aspirations, perception of deservingness, role models, selection policy

## 1 | INTRODUCTION

... the under-representation of female leadership is hurting young women. Perhaps gender quotas are needed to speed up change and stoke the ambitions of the next generation.

*E. Pereira, in ForbesWomen (19 January, 2012)*

Women's underrepresentation in leadership has become a well recognized issue for society (World Economic Forum, 2020). Gender biases originating from gender stereotypes constitute a major obstacle that impedes upwardly aspiring women (Eagly & Karau, 2002; Heilman, 2012; Lyness & Grotto, 2018). According to incongruity models

(Eagly & Karau, 2002; Heilman, 1983, 2012), the stereotypical belief that women are more communal (e.g., caring, sociable) does not match with the qualities people believe are required for leaders, whereas the stereotypical belief that men are more agentic (e.g., assertive, competitive) coincides with beliefs about leadership requirements (see meta-analysis by Koenig et al., 2011). Consequently, women are burdened with a perceived lack of fit, resulting in difficulties when striving to acquire leadership positions.

With the aim of accelerating progress towards gender balance, legislated mandatory quota regulations for women on boards of directors have been implemented or are being discussed in numerous countries (Hughes et al., 2017; Leszczyńska, 2018; Sojo et al., 2016). These

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quota regulations typically require that a predetermined percentage of women be included in a target function, such as on corporate boards, within a defined time period, sometimes with sanctions for non-compliance (e.g., Norway, France, Germany), and sometimes without such sanctions (e.g., Iceland, the Netherlands, India, Malaysia; European Commission Justice, 2011; Kirsch, 2018). The European Commission, as a supranational organization, has established a Directive mandating that at least 40% of the underrepresented gender must be represented in non-executive boards of listed companies or 33% among all directors in publicly listed companies for all European Union member states (European Commission, 2022). In addition to such legal regulations, organizations have introduced internal quotas. SAP, for example, announces on its web page that its executive board has set a quota to fill 30% of its leadership positions with women by 2022 (SAP SE, 2017). Increasingly prevalent, quota regulations have been found to be an effective, albeit controversial, measure for increasing the percentage of women leaders within a defined time period (Hughes et al., 2017).

Because quota policies increase the number of women in leadership roles, they may produce a benefit beyond that of greater gender balance—they may provide role models for other women. There is, indeed, evidence that women leaders can serve as role models who change the way other women think about themselves and their career prospects (see review by Morgenroth et al., 2015). However, it is not clear that women leaders have the same inspirational effect on other women when preferentially selected as a result of a quota policy as when selected strictly on the basis of their qualifications.

This work examined whether women's capability to serve as inspirational role models depends on how they were selected for their leadership position and, in particular, whether quota-based selection inhibits role model acceptance. This research contributes to and extends the scientific literature on both role modelling as well as gender and leadership by investigating an as-yet unrecognized but potentially important issue. Specifically, our research adds to this literature by seeking to determine whether merely being in a leadership position is enough or if the way in which the woman leader has attained the position makes a difference in role model acceptance. This work is also potentially informative about how quota-based selection can best be implemented. Such policy-relevant information is crucial in the current time and in the European context where quota regulations for senior leadership are increasingly prevalent.

In addition to examining the effects of quota-based selection on women, one of our studies (Study 1) provides information about how the presence of quota-selected women leaders affects men aspiring to leadership positions. Generally, female role models have little impact on men (e.g., Latu et al., 2013; Lockwood, 2006). Despite this, however, it is likely that men are affected by the preferential selection of women and, although not our main focus, we also consider these consequences.

## 1.1 | Women leaders as role models for other women

Women exemplars occupying traditionally male-dominated positions can be inspirational, serving as role models who others want to

emulate and follow. Role models are typically defined as people who act as behavioural models and represent what is possible to achieve. Specifically, role models can motivate others to adopt counter-stereotypical aspirations and goals and also provide impetus for feelings of self-efficacy in pursuing them (Morgenroth et al., 2015). Past research indicates that exposure to women exemplars, whether brief or for a longer period, can have inspiring effects on others, and especially on young female adults (see review by Olsson & Martiny, 2018). For instance, women in the US Air Force Academy performed better in math and science classes when they had a female professor than when they had a male professor (Carrell et al., 2010), and the implicit and explicit science attitudes and career aspirations of female students benefited from female science, technology, engineering, and mathematics (STEM) professors (Young et al., 2013). Laboratory-based research also shows positive effects of women exemplars. Explicit exposure to a set of advertisements depicting women in counter-stereotypical gender roles reduced negative self-perceptions and enhanced women's leadership aspirations (Simon & Hoyt, 2013). Reading about a woman who is successful in the female participants' own intended occupation reduced women's gender stereotypical beliefs in an implicit association test (Dasgupta & Asgari, 2004). Moreover, exposure to a picture of an elite woman leader such as Angela Merkel or Hillary Clinton empowered women's speechmaking performance in a leadership task (Latu et al., 2013).

Given these findings, it seems reasonable to posit that women in leadership roles can become role models, with beneficial effects on other women's sense of self and pursuit of similarly counter-stereotypical career objectives. But for a woman exemplar to become an inspiring role model, simply being from the same gender group is not enough; women also must be viewed as competent and deserving of their positions. Only when female students learned that women exemplars were competent in math and had mastered challenging classes did their presence have a beneficial effect on their math test performance (Marx & Roman, 2002), and only when women believed that Hillary Clinton deserved her success did reading about her help overcome stereotype threat effects (Taylor et al., 2011). Moreover, fictitious women who attained their success through ability and effort proved to be more effective role models for combatting math stereotype threat than exemplars who succeeded through luck or thanks to an easy task (McIntyre et al., 2011). Similarly, higher female representation in sales management was found to be beneficial for female high school seniors' interest in such positions when the increase was due to the women's "credentials and education" but not when it was due to "pressures from legal regulations" (Heilman & Herlihy, 1984).

These findings are particularly relevant for the present research. They not only affirm the necessity of a woman leader being perceived as competent and deserving of her position if she is to have an inspiring effect, but also are suggestive about when these perceptions are most likely to occur. It appears that if a woman leader is to inspire other women to follow in her footsteps in a traditional male-typed work setting, merely occupying the position is not enough; she also has to arrive at it in a way that indicates she deserves her position.

## 1.2 | How quota-based selection can prevent women from becoming role models

Perceptions of deservingness occur when an individual's accomplishments are attributed to the individual himself or herself rather than to circumstance—in the terms of attribution theory, to internal rather than external causes (Weiner, 1985). Accordingly, causal attributions are likely to play an important role in determining whether an exemplar becomes a role model, and external attributions are likely to hinder this from occurring.

In research investigating remedies for gender imbalance, selection policies have been characterized by the degree to which consideration is given to candidates' demographic attributes (see review by Harrison et al., 2006). These policies are often erroneously assumed to be on a single continuum with focus on demographic criteria on one end and focus on skill-related qualifications and competencies on the other (Heilman et al., 1998). Quotas, which are not in fact implemented to substitute for merit criteria but rather to provide corrective measures for well-known failings of merit-based selection processes, are nonetheless commonly thought to be on the very low end of this continuum. That is, unless information is available to directly refute it, gender quotas are taken to indicate that gender-preferential policies are paramount in decision-making and that merit considerations play only a minor role, implying that women thereby selected are not well qualified for the position (Heilman et al., 1998). Leadership selection based on a quota policy is likely to prompt external attribution (to quota regulations) rather than internal attribution (to the beneficiary's competencies), so it is likely to affect perceptions of the female leader's deservingness negatively and therefore limit her capacity to serve as a role model.

Past evidence documents that when gender considerations play a major role in selection, there are detrimental effects on the competence perceptions of individuals targeted to benefit (Heilman & Welle, 2006). Indeed, when gender is known to have been central to the decision-making process it appears to provoke the assumption that women would not be in the position if it were not for special treatment (Duguid & Thomas-Hunt, 2015; Heilman et al., 1997), and that they are beneficiaries of "success they did not earn" (Taylor et al., 2011, p. 457). Because a quota is perceived to be the very epitome of a selection policy in which gender as a criterion dominates the decision-making process, these investigations strongly suggest that women who are believed to have been selected through a quota policy will be viewed as less competent and deserving of their positions than women who are believed to have been selected based on their qualifications without regard to their gender.

If quotas induce negative views of women's competence and deservingness, they also are likely to disqualify those women thought to have benefitted from quotas from serving as role models for other women. There is anecdotal evidence that supports this idea. In Norway, for example, the increase in women on corporate boards of publicly limited companies brought on by the introduction of a 40% quota did not produce an increase in women's enrolment in business degree programs (Bertrand et al., 2019).

The idea that quota-based selection does not encourage perceptions of competence and deservingness propels this research. We aimed to investigate systematically what happens when people know that a woman leader has been hired as a result of a quota, much like the quota regulations currently in operation in many countries and organizations, and to assess its consequences for women's interest in a leadership role. We also aimed to demonstrate the role of perceived deservingness of the woman leader in mediating these outcomes and, in the process, identify how to implement quota regulations wisely so that they do not undermine selected women leaders' potential to serve as role models.

## 2 | OVERVIEW OF THE PRESENT RESEARCH

Using a hiring simulation paradigm, we conducted three studies to determine how exposure to a woman leader affects leadership interest when her selection is based on a quota or a merit policy. Study 1 examined interest in a leadership position after being exposed to a woman leader whose selection was merit or quota-based; the participants in this study were women and men and the mediating role of perceived deservingness of the woman leader was of specific interest. The subsequent studies focused exclusively on female participant's reactions. Study 2 examined the importance of perceived deservingness of the woman leader in determining women's leadership interest by varying competence-validating information about the woman leader's performance; it additionally provided an explicit test of the idea that selection method affects acceptance of the woman leader as a potential role model. Study 3 further examined the role of perceived deservingness of the woman leader in determining women's leadership interest by considering self-generated inferences about deservingness when no information about the selection process is provided.

For all studies, the data and analysis code are available on Open Science Framework (OSF; <https://osf.io/puesv/>). The hypotheses were not formally pre-registered but were pre-conceived in the grant proposal that supported this research (<https://p3.snf.ch/Project-162210>).

## 3 | STUDY 1

Study 1 focused on how interest in a leadership position was impacted when information about a woman leader was presented, and how it was affected by the way in which the woman leader was said to have been selected. Of particular interest was the way in which perceptions of the woman leader's deservingness affected other women's reactions. Yet, this study included men as well as women participants for purposes of comparison—that is, to show that quota-based policies have unique effects on women's leadership interest through perceived deservingness of the exemplar. However, although not the focus of this research, male participants' reactions are also of interest. Female role models do not typically serve as role models for men (Latu et al., 2013; Lockwood, 2006); nonetheless, the presence of preferentially selected women leaders are likely to affect their leadership interest.

Organizational practices and initiatives are often taken as signals of the organization's values, culture, and priorities (see review by Bowen & Ostroff, 2004), and the signal communicated by diversity policies has been shown not to be positive for men (see review by Leslie, 2019). Men, for instance, were concerned about being discriminated against when they imagined applying to a company that fostered diversity and inclusion (Dover et al., 2016), and they were concerned about being treated unfairly and indicated discomfort with the company when diversity initiatives targeted female employees (Cundiff et al., 2018). When confronted with a quota policy, research has shown a heightening of men's perceptions of unfairness and a dampening of their attitudes and motivation (Heilman et al., 1996). What is key to these reactions is the seemingly unambiguous indication that there is a zero-sum competition in which men are bypassed to make way for women (Krook, 2016; Wilkins et al., 2015). That is, diversity policies in general and gender quota policies in particular are prone to making men feel that they are in a setting in which they are likely to "lose out" to women simply because of their gender, and that the odds are therefore against them in advancing towards leadership positions. In contrast, merit-based selection of a woman leader, in which qualifications rather than gender considerations are thought to be paramount, are likely to be indicative of a more level playing field and therefore less likely to have this consequence.

Following from this reasoning, as with women, men's job interest should be less when a woman leader in the organization has been hired as a result of a quota than a merit policy. However, unlike women, for whom we expect quota-based selection to depress the positive effects of having a woman exemplar, quota-based selection should depress men's interest when it otherwise might have been high due to a negative view of their career probabilities and of the organizational climate for members of their gender group.

To test these ideas, male and female participants either were or were not presented with information about a woman leader, and when they were presented with information about a woman leader, she was said to have been selected either based on a quota or a merit policy. First, we sought to replicate past work by showing gender differences in leadership interest (Koenig et al., 2011), demonstrating that the leader position was more attractive to men than women:

**Hypothesis 1.1.** In the absence of a woman leader, women will be less interested in a leadership position than men.

The primary hypotheses involved responses to a leadership position when there was a woman leader as compared to when there was not (baseline condition). Of particular interest were the beneficial or detrimental effects of having a woman leader, and how the method by which she was selected enhanced or deterred leadership interest. Following from the preceding reasoning, women and men were expected to aspire less to a leadership role when exposed to a woman leader who has been selected on the basis of a gender quota, although for different reasons. For women, we expected the gender quota policy to curtail the beneficial effects of having a woman leader who, when

selected on the basis of merit, can be a role model and source of inspiration:

**Hypothesis 1.2.** Compared to the no-exemplar baseline, a woman leader will enhance women's leadership interest when she has been selected on a merit basis but not when she has been selected on a quota basis.

In contrast, for men, we expected the quota policy to *create a problem that would not have been likely to occur* had the woman leader been selected based on merit:

**Hypothesis 1.3.** Compared to the no-exemplar baseline, a woman leader will detract from men's leadership interest when she has been selected on a quota basis but not when she has been selected on a merit basis.

As a consequence:

**Hypothesis 1.4.** Both women's and men's interest in a leadership position will be lower when presented with a woman leader selected on a quota rather than merit basis.

In terms of mediation, we expected the following:

**Hypothesis 1.5.** Women's greater leadership interest when presented with a woman leader selected on a merit rather than a quota basis will be explained by their more favourable perceptions of the degree to which the leader is deserving of her position.

**Hypothesis 1.6.** Men's lesser leadership interest when presented with a woman leader selected on a quota rather than a merit basis will be explained by their less favourable perceptions of both the organizational climate and their chances to be selected.

## 3.1 | Method

### 3.1.1 | Participants and design

Power analysis indicated the need for at least 320 participants to have 90% power to detect small-to-medium effect sizes ( $f = 0.20$  or  $\eta^2 = .039$ ) when employing the traditional .05 alpha-criterion of statistical significance (*G\*Power* 3.1; Faul et al., 2007). In total, 338 management students participated in the study. Fifteen were excluded because they incorrectly answered the selection method manipulation check question. The final sample consisted of 323 management students (164 women, 159 men) from a large Swiss university. Their age ranged from 19 to 39 years ( $M = 24.45$  years,  $SD = 3.42$ ) and 54% pursued a bachelor's degree and 40% a master's degree, and the remaining 6% a PhD or audited a class.

The experiment was a 2 (participant gender: woman, man)  $\times$  3 (exemplar: no-exemplar baseline, merit-based selected exemplar, and

quota-based selected exemplar) between-subjects design. Male and female participants were randomly assigned to one of the three experimental conditions.

### 3.1.2 | Procedure

The study was conducted online. Participants were recruited via email messages or flyers distributed after lectures. Participants were informed that the research concerned how information about a company is presented—whether it is in print or online—influences students' perceptions of the company. After giving informed consent, participants read an excerpt from a fictitious website, and completed a series of questions containing the dependent measures followed by questions about demographic information (e.g., gender, age) and manipulation checks. Finally, participants were thanked for their participation and debriefed. The present studies were approved by the University's Ethics Commission; they were risk free for the participants, and anonymity was assured.

### 3.1.3 | Materials

The presence or absence of the different exemplars was varied within the website of a fictitious international corporate group. Appendix S1, in the online supplemental material, displays the websites. In the no-exemplar baseline condition, the website titled “meet our organization” contained generic information about the corporate group. The final paragraph announced that the group was “currently looking to hire new entry-level leaders and would love to hear from you.”

In the two conditions with exposure to an exemplar, additional information was added. Under the heading, “meet our employees” one of the group's female leaders, Nicole Meier, was introduced. She was portrayed as someone similar to the students in background and at a stage in her career that should be considered attainable for most management students. The description of the exemplar was based on prior role modelling research (e.g., Asgari et al., 2012; Hoyt & Simon, 2011). There was also information about the corporate group's policy in accordance with which Nicole was hired. In the merit condition, participants read: “Nicole Meier was hired in accordance with our corporate group's policy to promote excellence. She was recruited as part of our merit-based selection process, in which candidates are selected on the basis of high qualifications and competencies relevant for positions with management responsibility.” In the quota condition, participants read: “Nicole Meier was hired in accordance with our corporate group's policy of having 40% of our management positions filled by women. She was recruited as part of our quota-based selection process, in which at least 40% of candidates shortlisted for a position with management responsibility must be women.” The wording of the selection policies was based on actual policies currently in effect (e.g., Deutsche Telekom, whose web page announces a recruitment guideline that at least 30% of candidates shortlisted for any top position through-

out the company must be women; Deutsche Telekom AG, 2020) and in line with the 40% quota mandated by the European Commission (2022).

### 3.1.4 | Measures

Unless otherwise noted, measures used seven-point rating scales ranging from (1) strongly disagree/not at all/very unlikely to (7) strongly agree/very much/very likely, and item order within the composite scales comprising each measure was randomized. Appendix S2 in the online supplemental material includes the full questionnaire.

#### *Interest in leadership*

Six items assessed participants' interest in a leadership position at the company, including “This entry-level leadership position seems very desirable to me”, “I would like to work at a place like this”, or “How likely would you be to apply for an entry-level leadership position at this company?” (adapted from Nater & Sczesny, 2016). A principal axis factoring (PAF) with oblique rotation yielded a one-factor model (with factor loadings ranging from .66 to .89), and the resulting composite scale had high internal consistency,  $\alpha = .92$ .

#### *Perceptions of the deservingness of the exemplar*

Participants who were exposed to an exemplar indicated the extent to which they evaluated the exemplar as deserving of her position on three items (i.e., “How much do you think Nicole deserved to be selected for her position?” “How competent do you think Nicole is?” and “How effective do you think Nicole is in her position?” adapted from McIntyre et al., 2011; Parks-Stamm et al., 2008). PAF yielded one factor (with factor loadings from .72 to .92) and the resulting scale had high internal consistency,  $\alpha = .88$ .

#### *Perceived organizational climate*

Participants indicated their perception of the organizational climate on three items (i.e., “I could ‘be myself’ at a company like this”, “I would be treated fairly in this organization”, and “I would feel welcome in this company”). The PAF yielded one factor (factor loadings from .84 to .92) and the resulting scale had high internal consistency,  $\alpha = .85$ .

#### *Perceived probability of being selected*

The item “What do you think the chances are that you would be selected?” assessed participants' perceived chances to be selected for a leadership position if they applied.

#### *Stimulus and manipulation checks*

Participants who were exposed to an exemplar were asked to indicate whether the exemplar was selected based on merit or a quota. They also indicated how similar they thought they were to the exemplar on three items (Lockwood, 2006), and how qualified they felt for the leadership position on four items (Nater & Sczesny, 2016).

**TABLE 1** Study 1: Means and standard deviations for women's and men's interest in leadership, perceptions of deservingness, perceived probability of being selected, and organizational climate, by method of exemplar's selection

Experimental design		N	Interest in leadership		Perceptions of deservingness		Perceived probability of being selected		Perceived organizational climate	
			M	SD	M	SD	M	SD	M	SD
Women	Baseline (no exemplar)	55	3.86 <sub>a</sub>	1.46	-	-	3.15 <sub>a</sub>	1.38	4.01 <sub>a</sub>	1.13
	Merit exemplar	57	4.66 <sub>b</sub>	1.34	5.39 <sub>a</sub>	1.02	3.58 <sub>ab</sub>	1.56	4.28 <sub>a</sub>	1.24
	Quota exemplar	52	4.07 <sub>a</sub>	1.50	4.60 <sub>b</sub>	1.26	3.96 <sub>b</sub>	1.48	4.32 <sub>a</sub>	1.22
	Total	164	4.20	1.46	5.01	1.21	3.55	1.50	4.20	1.20
Men	Baseline (no exemplar)	54	4.57 <sub>a</sub>	1.17	-	-	4.46 <sub>a</sub>	1.28	4.80 <sub>b</sub>	1.23
	Merit exemplar	52	4.11 <sub>ab</sub>	1.48	4.86 <sub>a</sub>	1.04	4.13 <sub>ab</sub>	1.27	4.01 <sub>a</sub>	1.24
	Quota exemplar	53	3.71 <sub>b</sub>	1.47	4.40 <sub>b</sub>	1.10	3.74 <sub>b</sub>	1.43	4.01 <sub>a</sub>	1.31
	Total	159	4.13	1.42	4.63	1.09	4.11	1.36	4.28	1.28

Note. All scales ranged from (1) strongly disagree/not at all/very unlikely to (7) strongly agree/very much/very likely. Means in the same column, for women and men separately, that do not share subscripts are significantly different at  $p < .05$ , as indicated by Fisher's least significant difference (LSD) comparisons (ignoring the total averages for women and men as a group).

## 3.2 | Results

### 3.2.1 | Preliminary analyses

The manipulation check indicated that 95% of participants correctly identified the selection method as merit based or quota based. Participants who failed the manipulation check ( $n = 15$ ) were excluded from the analyses. Analysis of women's and men's self-ascriptions of qualifications,  $F(1, 107) = 1.74, p = .191$ , indicated no differences in the two exemplar conditions. Moreover, women's and men's perceived similarity ratings did not differ in the quota and merit conditions,  $F(1, 210) = 1.12, p = .29$ , indicating that the selection method did not prompt different levels of perceived similarity with the exemplar.

### 3.2.2 | Interest in leadership and mediators

An ANOVA was conducted on the dependent measures and mediators. Partial eta squared values ( $\eta_p^2$ ) are reported as effect sizes. When appropriate, simple effects tests and contrasts using Fisher's least significant difference (LSD) method were used to clarify significant interactions and to test specific hypotheses. Table 1 contains the means and standard deviations and Table 2 the ANOVA results.

#### Interest in leadership

As shown in Table 2, a  $2 \times 3$  ANOVA indicated a significant main effect of exemplar, a non-significant main effect for participant gender, and a significant Participant Gender  $\times$  Exemplar interaction. Consistent with Hypothesis 1.1, planned contrasts for the baseline condition revealed that in the absence of a woman exemplar women reported less interest in a leadership position than men,  $F(1, 317) = 6.95, p = .009, \eta_p^2 = .021$ .

Subsequent contrasts confirmed the hypotheses about the effects of a woman exemplar on women's (Hypothesis 1.2) and men's

**TABLE 2** Study 1: ANOVA results on the dependent and mediator variables

Source of variation	df	F	p	$\eta_p^2$
Interest in leadership				
Gender	1	0.17	.678	<.001
Exemplar	2	3.43	.033	.021
Gender $\times$ exemplar	2	6.31	.002	.038
Error	317			
Perceptions of deservingness				
Gender	1	5.73	.018	.027
Exemplar	1	17.01	<.001	.075
Gender $\times$ exemplar	1	1.25	.265	.006
Error	210			
Perceived probability of being selected				
Gender	1	12.31	.001	.037
Exemplar	2	0.04	.957	<.001
Gender $\times$ exemplar	2	8.06	<.001	.048
Error	317			
Perceived organizational climate				
Gender	1	0.25	.619	.001
Exemplar	2	1.59	.205	.010
Gender $\times$ exemplar	2	7.22	.001	.044
Error	317			

Note. Gender = participant gender, Exemplar = Experimental factor with three levels (no-exemplar baseline, merit-based selected exemplar, and quota-based selected exemplar). Results for interest in leadership, perceived probability of being selected, and perceived organizational culture are based on  $2 \times 3$  ANOVAs and results for perceptions of deservingness on a  $2 \times 2$  ANOVA.

(Hypothesis 1.3) interest in the leadership position, depending upon how the exemplar was selected. Supporting Hypothesis 1.2 regarding women, compared to the baseline no-exemplar condition, women reported higher interest in the merit ( $p = .003$ ), but not in the quota condition ( $p = .441$ ). Supporting Hypothesis 1.3 regarding men, compared to the baseline no-exemplar condition, men reported less interest in the quota ( $p = .020$ ), but not in the merit condition ( $p = .096$ ). Taken together, as predicted, compared to no exposure to an exemplar, with quota-based selection women did not demonstrate the boost in leadership interest that was evidenced in the merit condition, and men demonstrated a decrement in leadership interest that did not occur in the merit condition.

Results of direct tests of the effects of the two selection conditions (Hypothesis 1.4) were more mixed. Whereas contrasts supported the hypotheses for women by indicating that women reported higher interest in the merit condition than the quota condition ( $p = .028$ ), for men, the difference in reports of interest in the two selection conditions, although in the predicted direction, did not reach significance ( $p = .145$ ).

### Mediators

*Perceptions of deservingness of the exemplar.* Because perceptions of deservingness could be obtained only when an exemplar was presented, the baseline condition could not be included in the analyses of the deservingness data and we therefore conducted a  $2 \times 2$  ANOVA. As shown in Table 2, the results showed a main effect for the exemplar, indicating that both women and men viewed women exemplars as less deserving of their positions when selected on the basis of a quota compared to merit. There was also a main effect for participant gender, with women consistently rating the woman exemplar higher in deservingness than men. The participant gender  $\times$  exemplar interaction was non-significant.

*Perceived organizational climate.* As shown in Table 2, the  $2 \times 3$  ANOVA results for the organizational climate ratings revealed non-significant main effects for exemplar and participant gender, but a significant participant gender  $\times$  exemplar interaction. Simple effects revealed that the presentation of a woman exemplar had no effect on women's ratings of the climate, regardless of how she was selected, but that it had significant effects on men's ratings. Compared to the baseline, men rated the climate as less welcoming with the presence of a woman leader regardless of whether she had been selected on a quota ( $p < .001$ ) or a merit ( $p < .001$ ) basis. Just having a woman exemplar, no matter how she was selected, impaired men's perception of the organizational climate.

*Perceived probability of being selected.* As shown in Table 2, the  $2 \times 3$  ANOVA revealed a non-significant main effect for exemplar, a significant main effect for participant gender, and a significant participant gender  $\times$  exemplar interaction. Contrasts indicated that, in comparison with the baseline, in the quota condition men perceived their probability of being selected as worse ( $p = .008$ ) and women perceived their probability of being selected as better ( $p = .003$ ). When the exemplar

was selected on a merit basis, perceived selection probability did not differ from the baseline for either men or women ( $ps > .104$ ).

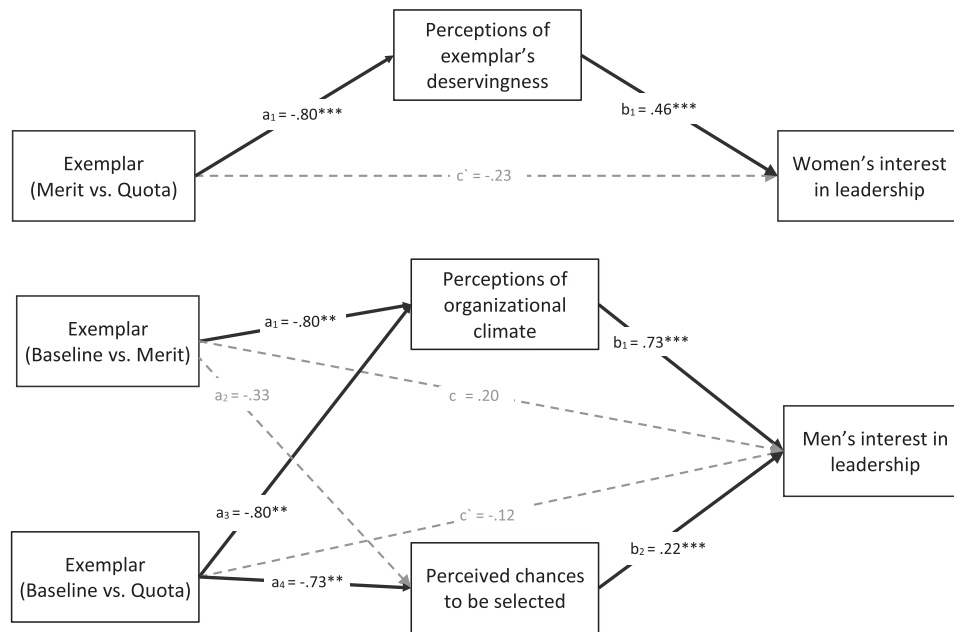
### 3.2.3 | Mediation analyses

The proposed pathways were analysed with ordinary least squares path analysis (PROCESS; Hayes, 2018). The indirect effects were tested using 95% bias-corrected bootstrap confidence intervals based on 10,000 samples. Figure 1 depicts statistical diagrams of the mediation models for women (Hypothesis 1.5) and men (Hypothesis 1.6).

The predicted simple mediation model tested perceived deservingness as a mediator of the difference in women's leadership interest expressed in the quota and merit conditions (see Hypothesis 1.4). Supporting Hypothesis 1.5, the results showed that the exemplar indirectly affected women's leadership interest through perceptions of deservingness,  $a_1b_1 = -0.36$ , 95% CI [-0.62, -0.14]. That is, women perceived women exemplars selected on a merit rather than a quota basis to be more deserving,  $a_1 = -0.80$ ,  $p < .001$ , and higher perceived deservingness was followed by women's higher leadership interest,  $b_1 = 0.46$ ,  $p < .001$ . The direct effect was non-significant,  $c' = -.23$ ,  $p = .394$ . In line with our expectation, an exploratory parallel mediation model that also included perception of the organizational climate and assessment of the selection probability showed that neither of those variables mediated the effect of the exemplar on women's interest (non-significant indirect effects through both organizational climate,  $a_2b_2 = 0.03$ , 95% CI [-0.32, 0.33], and probability,  $a_3b_3 = 0.04$ , 95% CI [-0.02, 0.17]). Similar analyses for men indicated that deservingness did not mediate the effect of merit versus quota-based selection method on men's job interest (non-significant indirect effect through deservingness,  $a_1b_1 = -0.09$ , 95% info CI [-0.24, +0.01]).

Against our prediction, men exposed to a merit exemplar did not report significantly lower interest than men exposed to a quota exemplar (see Hypothesis 1.4) and the initially proposed simple mediation model comparing merit with the quota condition was rendered superfluous. Yet, in line with Hypothesis 1.3, men differed in their reaction to the two exemplars as compared with the baseline with no exemplar. To understand the underlying mechanism contributing to these latter differences, we tested the hypothesized parallel mediation model with a categorical predictor variable (i.e., baseline vs merit, baseline vs quota). This adjusted model allowed examination of the impact of men's perceptions of the organizational climate and perceived probability of being selected as potential mediators of the difference in men's leadership interest compared to when no female leader was presented.

As shown in Figure 1, men's lesser interest was driven by negative perceptions of the organizational climate both when exposed to a quota-based selected exemplar,  $a_3b_1 = -0.58$ , 95% CI [-0.83, -0.22], and when exposed to a merit-based exemplar,  $a_1b_1 = -0.58$ , 95% CI [-0.93, -0.24], indicating that organizational climate mediated men's lesser interest whenever a female leader was presented. However, men's lower perceived probabilities of being selected affected their interest only in the quota condition,  $a_4b_2 = -0.16$ , 95% CI [-0.36, -0.04], not in the merit condition,  $a_2b_2 = -0.07$ , 95% CI [-0.20, 0.03].



**FIGURE 1** Study 1: Mediation models for the effect of exemplar's selection method on women's and men's interest in leadership. The first model shows the effect of selection method (merit = 0, quota = 1) on women's interest through deservingness (Hypothesis 1.5;  $n = 109$ ), the second model shows the effect of selection method (baseline = 0, merit = 1, quota = 1; extension of Hypothesis 1.6) on men's interest through organizational climate and chances to be selected ( $n = 105$ ). Unstandardized regression coefficients are shown. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### 3.3 | Discussion

The results of Study 1 supported our hypotheses about women's reactions to female leaders. Whether the presence of a woman in a leadership role was beneficial for the aspirations of other women depended on how she attained the leadership position. As predicted, only when her selection was due to a merit, not to a quota policy, did her presence produce greater interest among female participants than when no female leader was presented. Results also supported the importance of perceived deservingness of the woman leader in accounting for women's differing leadership interest. Whereas both women and men evaluated the woman leader as less deserving of the leadership position when she was selected based on a quota than based on merit policy, this less favourable evaluation mediated the effects of quota-based selection on women's (but not men's) interest in the position.

For men, as predicted, when a woman leader's selection was due to a quota, but not to a merit policy, her presence had a detrimental effect on the aspirations of men to pursue a similar leadership position. That is, only with a quota policy did men express less interest when a woman leader was presented than when no female leader was presented. As anticipated, men's less favourable perception of the probability of being selected mediated this negative response. However, contrary to predictions, organizational climate, which was found to be rated more negatively whenever a woman leader was presented regardless of how she was selected, was not found to uniquely mediate the decrement in leadership interest in the quota condition; it also mediated the decrement of leadership interest in the merit condition. Whatever the selection method, men anticipated the organizational

climate to be less welcoming when a woman leader was present, and this in turn lessened their interest in the position. The distinguishing factor in determining reactions to quota-based selection was the perceived probability of being selected. Although not the focus of our inquiry, these responses of men to female leaders are interesting and it is important to follow them up with subsequent research.

Extending the role-modelling literature on female role models' impact on other female role aspirants, the results of this study counter the idea that women leaders, merely by their presence, serve as inspirational role models that encourage others to aspire to leadership positions. Although the beneficial effects of exposure to women leaders were evident when they were selected due to their merit, when a woman leader was selected due to a quota, there was no evidence of any boost whatsoever in other women's leadership aspirations.

## 4 | STUDY 2

The findings of Study 1 indicated that negative perceptions of the deservingness of women leaders selected on a quota basis account for the lack of positive impact on the aspirations of other women. But what happens when their competence and therefore their deservingness is validated? If perceptions of lack of deservingness are key, then providing evidence of competence should nullify the effect we observed in Study 1 and enable a woman leader selected on a quota basis to function as a role model for other women and, much like women selected on a merit basis, she should provide a boost to other women's leadership aspirations.



In Study 2, we tested whether information of proven job success has this expected consequence. In addition, we explicitly assessed the acceptance of the woman leader as a role model to determine if it accounted for the selection-driven differences in women's leadership aspirations. By incorporating this additional link in the mediation model, and focusing directly on role model acceptance as a consequence of perceived deservingness, this study aimed to provide a more complete explanation of the effects of leadership selection on women's leadership interest. Study 2 also served as a replication of the results of Study 1 regarding female participants.

The first hypothesis predicts the replication of the Study 1 findings about differences in the enhancement in leadership interest when women leaders are selected on the basis of a merit or quota policy plus the added prediction that these differences will not occur if success information about the exemplar is provided.

**Hypothesis 2.1.** Compared with the no-exemplar baseline, a woman leader will enhance women's leadership interest when she has been selected on a merit basis but not when she has been selected on a quota basis. However, this difference due to selection method will not be evident when success information about the woman leader is provided (in which case a woman leader will have an enhancing effect on leadership interest no matter what the method of selection).

The second hypothesis explicitly compares the effects of the quota versus merit selection method on reactions to women leaders plus the added prediction that these differences will not occur if success information about the exemplar is provided:

**Hypothesis 2.2.** Without success information women's interest in a leadership position will be lower when presented with a woman leader selected on a quota basis rather than merit basis, but this difference will not be evident when success information is provided.

The third hypothesis concerned serial mediation and thereby extends the model examined in Study 1. It further examines whether the presence or absence of success information moderates whether differences in deserving and subsequent acceptance as a role model contribute to women's interest.

**Hypothesis 2.3.** Women's greater leadership interest when presented with a woman leader selected on a merit rather than quota basis will be explained by their more favourable perceptions of the degree to which the leader is deserving of her position and in turn accepted as a role model when success information is absent but not when the woman leader's success is established.

## 4.1 | Method

### 4.1.1 | Participants and design

Unlike Study 1, all study participants were women. A power analysis indicated the need for at least 305 participants to have adequate 80%

power to detect small to medium effect sizes ( $f = 0.20$  or  $\eta^2 = .039$ ) when employing the traditional .05 alpha-criterion of statistical significance. In total, 349 female management students from a large Swiss university participated in the study, 47 of whom had to be excluded because they incorrectly answered at least one of the two manipulation check questions. The final sample consisted of 302 female management students. Their age ranged from 18 to 40 years ( $M = 22.16$  years,  $SD = 3.07$ ) and 74% pursued a bachelor's degree, 24% a master's degree, and 2% did not pursue a degree.

The experiment was a one-way between-subjects design with five conditions. The no-exemplar condition served as a baseline, and the other conditions were as follows: merit-based selected exemplar, merit-based selected exemplar with success information, quota-based selected exemplar, and quota-based selected exemplar with success information. The female participants were randomly assigned to one of the five experimental conditions.

### 4.1.2 | Procedure

The procedure was identical to that of Study 1 except that there were two additional exemplar conditions containing competence-validating information about the exemplar's success in the leadership role and, in all conditions, there was a measure of role model acceptance. Participants read an excerpt from a website, responded to questions assessing the dependent measures and manipulation checks, and provided demographic information.

### 4.1.3 | Materials

The presence or absence of the different exemplars was varied with the same materials as in Study 1. For the two new conditions with success information, the excerpt also stated that "Recently, Nicole had her first performance appraisal, in which her strong performance was highly praised. Based on our objective set of criteria, Nicole was rated as highly competent and efficient and received excellent evaluations for her very good work." Appendix S3, in the online supplemental material, displays the five websites.

### 4.1.4 | Measures

The same measures as in Study 1 assessed participants' interest in leadership (six items;  $\alpha = .91$ ) and perceived deservingness of the exemplar (three items;  $\alpha = .86$ ). Appendix S4, in the online supplemental material, includes the questionnaire.

#### *Acceptance of exemplar as role model*

Participants indicated the extent to which they accepted the exemplar as a role model on four items (e.g., "The exemplar is someone 'whose footsteps I would like to follow in,'" "I could consider to be a role model"; adapted from Peters et al., 2018). This was a new feature of Study 2. Principal axis factoring produced a one-factor model (with factor

**TABLE 3** Study 2: Means and standard deviations for women's interest in leadership, perceptions of deservingness, and acceptance of exemplar as role model, by experimental condition

Experimental design	N	Interest in leadership		Perceptions of deservingness		Acceptance of exemplar as role model	
		M	SD	M	SD	M	SD
Baseline (no exemplar)	62	4.12 <sub>a</sub>	1.31	-	-	-	-
Merit exemplar	58	4.79 <sub>b</sub>	1.05	5.59 <sub>a</sub>	0.82	4.08 <sub>a</sub>	1.06
Merit exemplar + success info	59	4.97 <sub>b</sub>	1.04	5.67 <sub>a</sub>	0.93	4.22 <sub>a</sub>	1.28
Quota exemplar	61	4.20 <sub>a</sub>	1.40	4.84 <sub>b</sub>	1.08	3.59 <sub>b</sub>	1.39
Quota exemplar + success info	62	4.72 <sub>b</sub>	1.34	5.40 <sub>a</sub>	1.12	4.20 <sub>a</sub>	1.29

Note. All scales ranged from (1) strongly disagree/not at all/very unlikely to (7) strongly agree/very much/very likely. Means in the same column that do not share subscripts are significantly different at  $p < .05$ , as indicated by Fisher's least significant difference (LSD) comparisons.

loadings ranging from .69 to .89), and the resulting scale had high internal consistency,  $\alpha = .88$ .

#### Stimulus and manipulation checks

In addition to the checks in Study 1, participants in the two success conditions were asked about the strength of the exemplar's performance and indicated whether she was evaluated as performing well or poorly.

## 4.2 | Results

### 4.2.1 | Preliminary analyses

Ratings indicated that 87% of participants correctly answered both manipulation check questions. Those who responded incorrectly to the selection method question ( $n = 46$ ) and the one person who incorrectly answered the question regarding success of the exemplar were excluded from the analyses. As in Study 1, perceived similarity ratings indicated no differences in participants' perceptions of the exemplar's similarity to themselves as a consequence of the different selection methods,  $F(3, 236) = 1.10$ ,  $p = .349$ .

### 4.2.2 | Dependent measures and mediators

One-way ANOVAs were conducted on all measures and mediators. When appropriate, we conducted planned contrasts using Fisher's LSD method. Table 3 contains the means and standard deviations and Table 4 the ANOVA results.

#### Interest in leadership

The findings for women's interest replicated the results of Study 1 and provided support for Hypothesis 2.1. As shown in Table 4, a significant main effect of the exemplar and subsequent contrasts showed that, in comparison with the baseline no-exemplar condition, when no success information was provided, women reported greater interest in the leadership position in the merit condition ( $p = .003$ ) but not in the quota condition ( $p = .701$ ). The results when success information

**TABLE 4** Study 2: One-way ANOVA results on the dependent and mediator variables

Source of variation	df	F	p	$\eta_p^2$
Interest in leadership				
Exemplar	4	5.58	<.001	.070
Error	297			
Perceptions of deservingness				
Exemplar	3	8.38	<.001	.096
Error	236			
Acceptance of exemplar as a role model				
Exemplar	3	3.27	.022	.040
Error	236			

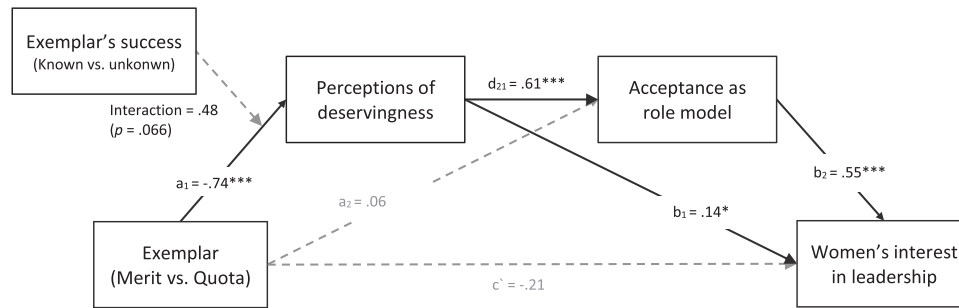
Note. Exemplar = experimental factor with five levels (no-exemplar baseline, merit-based selected exemplar, merit-based selected exemplar with success information, quota-based selected exemplar, and quota-based selected exemplar with success information).

was provided also were in line with the predictions: when the exemplar had proven her success in the leader role, she had a positive effect on women's interest compared to the baseline regardless of whether she had been selected on the basis of merit ( $p < .001$ ) or a quota ( $p = .007$ ).

Supporting Hypothesis 2.2, the results of direct tests of the effects of the two selection conditions on leadership interest showed that this difference was significant in the success information provided ( $p = .010$ ) but not in the success information not provided ( $p = .275$ ) condition. Additional exploratory analyses were also in line with the Study 1 findings by showing that compared to the no-exemplar baseline, the absence of a boost for women's leadership interest when the woman leader was selected on a quota basis was evident only when information of the leader's success was not provided (see Hypothesis 2.1) but not when it was provided ( $p = .007$ ).

#### Mediators

*Perceptions of deservingness of the exemplar.* As shown in Table 4, and consistent with Study 1, there was a significant main effect for deservingness ratings, and subsequent contrasts showed that quota-based



**FIGURE 2** Study 2: Mediation model for the effect of exemplar's selection method (merit vs quota) on women's interest in leadership, as a function of whether or not her success was established. The moderated mediation model shows how merit versus quota selection affects women's interest and how this depends on whether the female leader's success is established (Hypothesis 2.3;  $n = 240$  women; selection was coded merit = 0, quota = 1). Unstandardized regression coefficients are shown. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

selected exemplars were viewed as less deserving of their positions than merit-based selected exemplars only when their success was unknown ( $p < .001$ ); this difference was not evident when the exemplars (selected based on merit or quota) had been successful in their role ( $p = .140$ ).

*Acceptance of the exemplar as a role model.* A pattern of results similar to that for perceptions of deservingness was indicated for acceptance as a role model. As shown in Table 4, a significant main effect and subsequent contrasts indicated that when no success information was provided quota-based selected exemplars were less accepted as role models than merit-based selected exemplars ( $p = .037$ ), but this difference due to the selection method no longer occurred when both exemplars had been successful in the leader role ( $p = .935$ ).

### 4.2.3 | Mediation analyses

The moderated serial mediation model was analysed with ordinary least squares path analysis and the index of moderated mediation tested the difference between the conditional indirect effects (Hayes, 2015). Figure 2 depicts statistical diagrams of the moderated mediation model.

Again, Hypothesis 2.3 focused on leadership interest expressed in the merit versus quota conditions. In line with predictions, when no information about success was provided, the exemplar indirectly affected women's interest through perceived deservingness and acceptance of the exemplar as a role model in serial<sup>1</sup>,  $a_1 d_{21} b_2 = -0.18$ , 95% CI [-0.33, -0.07]. As shown in Figure 2, participants perceived women leaders selected on the basis of merit to be more deserving than leaders selected on the basis of a quota,  $a_1 = -0.74$ ,  $p < .001$ , and in turn more strongly accepted them as role models,  $d_{21} = 0.61$ ,

$p < .001$ , which then related to women's higher interest,  $b_2 = 0.55$ ,  $p < .001$ . The direct path was non-significant,  $c' = -.21$ ,  $p = .108$ , indicating that deservingness and role model acceptance fully mediated the effect from exemplar on women's interest.

Further testing Hypothesis 2.3, the index of moderated mediation examined the importance of the presence versus absence of success information for this underlying mechanism. The confidence interval for the index of moderated mediation approached significance by barely straddling zero, index = .15, 95% CI [-0.0008, +0.34], yet, given the non-significance, the conditional effects need cautious interpretation. The results provide tentative support for the view that the merit versus quota condition leads to differences in perceived deservingness and thus acceptance and interest when the woman leader's success was unknown,  $-.25$ , 95% CI [-0.41, -0.12], whereas no such difference occurs in deservingness and thus acceptance and interest when success information was provided,  $-.09$ , 95% CI [-0.22, +0.03].<sup>2</sup> These results provide initial support for the idea that especially when the woman leader's success is unknown, but less so when her success is established, the selection method impacts women's interest through perceptions of deservingness and role model acceptance.

### 4.3 | Discussion

Replicating the findings of Study 1, Study 2 showed that only women leaders selected on the basis of merit, not on the basis of a quota, heightened women's leadership aspirations. In addition, the results showed that this difference was eliminated when information about the woman leader's success in the leader role was provided. That is, once her competence was clearly communicated, the woman leader became an inspiring role model for other women regardless of whether she had initially been selected based on a quota or not.

These findings provide additional support to the idea that perceptions of a woman leader's competence-related deservingness are key

<sup>1</sup> To rule out potential alternative explanations, we reran a parallel mediation model that also included perceived organizational climate and perceived chances of being selected. These two mediators had no effect on women's interest in the merit versus quota condition (indirect effect via climate =  $-0.09$ , 95% CI [-0.27, 0.08], indirect effect via chances =  $-0.0004$ , 95% CI [-0.04, 0.04]). Figure 2 thus depicts the more parsimonious model.

<sup>2</sup> The pattern of results did not change when the model also included moderation on paths  $a_2$  and  $c'$ . Given that the moderator "Exemplar's success" only had an impact on path  $a_1$ , Figure 2 presents the more parsimonious model.

to the impact of her selection method on other women's leadership interest. With success information available to validate competence and therefore counteract external attributions for the attainment of her leadership position, the quota policy no longer curtailed the otherwise beneficial effects of having a woman leader. Moreover, the results confirmed the importance of role models in determining career aspirations by showing that role model acceptance, which was rooted in perceptions of deservingness, was a precursor of women's leadership interests.

## 5 | STUDY 3

The findings of Study 1 and Study 2 suggest that perceptions of the deservingness of women leaders account for their acceptance as role models and, ultimately, their impact on the aspirations of other women. Study 3 delves further into the issue of perceived deservingness and its consequences. In the previous studies perceptions of deservingness were based on unambiguous information that the woman leader was selected on a merit or quota basis. But people likely make inferences about whether a woman leader is deserving of her position even when they do not have information about how she was selected. This raises the issue of whether our results have implications that are more general. Study 3 addresses the question of whether women's leadership interest is influenced by inferences women make about the deservingness of a woman leader even in the absence of selection method information.

The inferences that people make about a woman leader's deservingness of her position can stem from many different sources. Deeply rooted beliefs in meritocracy (e.g., Castilla & Benard, 2010), are likely to spark inferences of merit-based selection and therefore perceptions of deservingness. However, the ongoing debate about quotas and the public discussion about the introduction of quota regulations for leadership positions in Europe are likely to make quotas particularly salient and therefore promote less favourable perceptions about a female leader's deservingness. There also are a host of individual differences such as political affiliation or demographic group membership, and contextual differences such as representation of women in the work setting or experience with female colleagues that are likely to affect inferences about a woman leader's deservingness of a leadership position. Although inferences about a female leader's deservingness of her position can result from many different sources, in this research we are not focused on identifying when and for whom different types of deservingness inferences are likely to occur; rather, our specific interest is to examine the consequences of perceived deservingness, whatever its source, as the driver of leadership interest.

Thus, in Study 3 we added a condition with no information about the leader's selection method and allowed people to form their own inferences about a woman leader's deservingness of her position. This condition allowed us to examine the way in which those deservingness inferences related to leadership interest and how they compared with leadership interest expressed when the selection method was known. Again, we expected that inferences about deservingness would be

related to leadership interest, and that those participants who inferred high deservingness would be more similar in their degree of leadership interest to those who were exposed to a woman leader selected on the basis of merit than on the basis of a quota, and those who inferred low deservingness would be more similar in their degree of leadership interest to those who were exposed to a female leader selected on a quota than a merit basis.

The first set of hypotheses focuses on inferences women make about the deservingness of a woman leader in the absence of selection method information. We sought to demonstrate the inferences' consequences and again the mediating role of role model acceptance.

**Hypothesis 3.1.** Women's inferences about the deservingness of a woman leader in the absence of selection information will be positively related to their interest in a leadership position.

**Hypothesis 3.2.** Women's greater interest in a leadership position when greater deservingness is inferred in the absence of selection information will be explained by the positive effect of deservingness perceptions on role model acceptance.

The second set of hypotheses considers the comparison of women's reactions in the absence of selection information with women's reactions in the conditions that either stated merit-based or quota-based selection.

**Hypothesis 3.3a.** Women who, in the absence of selection information, infer that a woman leader is relatively more deserving of her position will demonstrate greater interest in a leadership position than women who know the woman leader to be selected on a quota basis.

**Hypothesis 3.3b.** Women who, in the absence of selection information, infer that a woman leader is relatively undeserving of her position will demonstrate less interest in a leadership position than women who know the woman leader to be selected on a merit basis.

We also used this opportunity to again replicate our findings, comparing the effects of merit-based and quota-based selection on leadership interest.

## 5.1 | Method

### 5.1.1 | Participants and design

A power analysis indicated the need for at least 246 participants to have adequate 80% power to detect small-to-medium effect sizes ( $f = 0.20$  or  $\eta^2 = .039$ ) when employing the traditional .05 alpha-criterion of statistical significance. The sampling procedure differed from the prior studies due to measures against the COVID-19 pandemic, which curtailed the distribution of flyers after management lectures. Thus, participants for this study were recruited via an email message sent simultaneously to students from a large Swiss university. As an

incentive, participants could enter a drawing for five CHF 100 (approx. \$100) gift cards each for a store of their choice. In total, 575 female students with majors in management or related subjects (e.g., biology, IT) responded. Of these, 176 had to be excluded because of inattention—they incorrectly answered at least one of the two manipulation check questions—and nine because they were suspicious about the actual purpose of the study. The final sample consisted of 390 female participants. Their age ranged from 19 to 55 years ( $M = 24.05$  years,  $SD = 3.83$ ) and 63% pursued a bachelor's degree and 31% a master's degree, and the remaining 6% pursued a PhD or audited a class. The majority (96%) of the participants were Swiss.

The experiment was a one-way between-subjects design with three exemplar conditions: no-information about selection of exemplar, a merit-based selected exemplar, and a quota-based selected exemplar. In all conditions, participants learned about a woman exemplar but received different information about her selection. That is, participants were randomly assigned to one of the three experimental conditions. In addition, for purposes of analysis, participants in the no-information about selection condition were further divided into those who assumed that the woman leader was deserving or undeserving of her position.

### 5.1.2 | Procedure

The procedure was identical to that of the prior studies, except for the additional condition with no information about the exemplar's selection method. Participants learned that the research concerned the online presence of companies. As in the prior studies, they then read an excerpt from a fictitious website and responded to questions assessing the dependent measures, manipulation checks, and demographic information.

### 5.1.3 | Materials

The exemplar's selection method was varied with the same materials as in the prior studies. For the new condition with no selection method indicated, the excerpt also contained the information about Nicole but lacked the information about her selection. Appendix S5, in the online supplemental material, displays the different websites.

### 5.1.4 | Measures

The same measures as in Study 2 assessed participants' interest in leadership (six items;  $\alpha = .91$ ), perceived deservingness of the exemplar (three items;  $\alpha = .88$ ), and acceptance of exemplar as role model (four items;  $\alpha = .91$ ). Appendix S6, in the online supplemental material, includes the full questionnaire. As stimulus and manipulation checks, participants were asked to indicate whether the web page referred to a woman leader and whether the woman leader had been selected based on merit, a quota, or whether the web page contained no information about her selection.

## 5.2 | Results

### 5.2.1 | Preliminary analyses

Ratings indicated that 71% of participants correctly answered both manipulation check questions. Those who responded incorrectly to the question about whether the web page referred to a woman leader ( $n = 166$ ) and those who indicated there was a woman leader but incorrectly answered the question regarding the selection method ( $n = 10$ ) were excluded from the analyses. Furthermore, as in the prior studies, perceived similarity ratings indicated no differences in participants' perceptions of the exemplar's similarity to themselves as a function of the selection method,  $F(2, 387) = 0.38, p = .685$ .

### 5.2.2 | Women's inferences when selection method is unknown

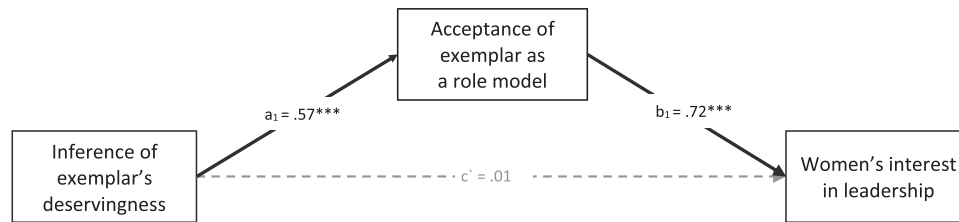
Regression analyses and simple mediation analyses tested the hypotheses that focused on women's reactions in the no-information condition ( $n = 130$ ). Supporting Hypothesis 3.1, in the absence of information about the exemplar's selection method, women's more favourable inferences about the deservingness of the woman leader related to their greater interest in a leadership position,  $b = .42, p < .001, R^2 = .11, F(1, 128) = 15.68, p < .001$ .

A simple mediation model focusing on the no-information condition supported Hypothesis 3.2 on role model acceptance as a mediator. Figure 3 depicts statistical diagrams of the serial mediation model. Results showed that higher perceived deservingness related to higher role model acceptance,  $a_1 = 0.57, p < .001$ , which, in turn related to higher interest in the leadership position,  $b_1 = 0.72, p < .001$ . The indirect effect was significant,  $a_1b_1 = 0.41, 95\% \text{ CI } [0.25, 0.59]$ . The direct effect was no longer significant,  $c' = .01, p = .944$ .

### 5.2.3 | Comparing women with high versus low inferred deservingness (when selection method is unknown) with the merit and quota conditions

One-way ANOVAs were conducted on all measures. As shown in Table 5, significant main effects of exemplar were found on perceived deservingness and interest in the leadership position, but not on role model acceptance. Table 6 contains the means and standard deviations.

To test Hypotheses 3.3a and 3.3b on how women with relatively high versus low inferred deservingness in the absence of selection information react in comparison to women in the merit and quota conditions, we created two groups of women from the no-information condition using a median split. The analysis with these two groups supplements the regression analyses to better understand the reactions of women with relatively high (i.e., above the median) versus low (i.e., below the median) inferred deservingness and to descriptively examine how these extemporaneous inferences mapped onto women's reactions in the merit and quota conditions.



**FIGURE 3** Study 3: Mediation model for the effect of inferred deservingness on women's interest in leadership when selection method information is absent. Note, the mediation model focuses on women in the no-information condition exclusively ( $n = 130$ ) and displays the effect of women's inferences about the exemplar's deservingness on their interest through acceptance of the woman leader as a role model (Hypothesis 3.2). Unstandardized regression coefficients are shown. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**TABLE 5** Study 3: One-way ANOVA results on the dependent and mediator variables

Source of variation	df	F	p	$\eta_p^2$
Interest in leadership				
Exemplar selection	2	5.28	.005	.027
Error	387			
Perceptions of deservingness				
Exemplar selection	2	6.13	.002	.031
Error	387			
Acceptance of exemplar as a role model				
Exemplar selection	2	0.77	.464	.004
Error	387			

Note. Exemplar = experimental factor with three levels (no-information about selection of exemplar, merit-based selected exemplar, quota-based selected exemplar).

As shown in Table 6, descriptive analyses revealed that women in the no-information condition who inferred that the woman leader was more undeserving of her position reported lower interest than those who perceived her to be more highly deserving ( $p < .001$ ). Providing support for Hypothesis 3.3a, descriptive analyses showed that women who inferred the exemplar to be highly deserving showed greater interest in the leadership position than women in the quota condition ( $p < .001$ ). Additional analyses revealed that this group of women showed no greater interest than women in the merit condition ( $p = .052$ ),

although the near significant trend of this latter finding suggests that women's inferences of higher deservingness may have promoted even more interest than merit selection information.

Support was also found for Hypothesis 3.3b. Women who, in the absence of selection information, inferred the leader to be relatively undeserving showed less interest in the leadership position than women in the merit condition ( $p = .039$ ). Additional analyses revealed that this group of women showed no greater interest than women in the quota condition ( $p = .707$ ).

#### 5.2.4 | Replicating results for the comparison between the merit and quota exemplar

The one-way ANOVAs conducted on all measures and mediators were followed with planned contrasts using Fisher's LSD method to test our replication hypotheses. As shown in Table 5, and in line with the earlier studies, ANOVA indicated a significant effect for the exemplar and subsequent contrasts showed that female leaders in the quota condition were seen as less deserving than those in the merit condition ( $p < .001$ ) and women again reported lower interest in the quota than the merit condition ( $p = .004$ ).

Replicating the underlying mechanism found in the prior studies, a serial mediation model comparing the merit and quota condition revealed that women perceived the merit exemplar to be more deserving than the quota exemplar,  $a_1 = -0.43$ ,  $p = .002$ , which related

**TABLE 6** Study 3: Means and standard deviations for women's interest in leadership, perceptions of deservingness (including women with relatively high versus relatively low inferred deservingness), and acceptance of exemplar as role model, by exemplar selection method

Experimental design	N	Interest in leadership		Perceptions of deservingness		Acceptance of exemplar as role model	
		M	SD	M	SD	M	SD
No-info. exemplar	(130)	(4.49)	(1.40)	(5.07)	(1.11)	(3.88)	(1.38)
<i>high inferred deserving</i>	70	4.85 <sub>a</sub>	1.32	5.89 <sub>a</sub>	0.49	4.40 <sub>c</sub>	1.29
<i>low inferred deserving</i>	60	4.08 <sub>b</sub>	1.38	4.11 <sub>b</sub>	0.82	3.27 <sub>a</sub>	1.24
Merit exemplar	157	4.49 <sub>a</sub>	1.22	5.42 <sub>c</sub>	1.00	3.82 <sub>b</sub>	1.32
Quota exemplar	103	4.00 <sub>b</sub>	1.36	4.98 <sub>d</sub>	1.15	3.66 <sub>a,b</sub>	1.40

Note. Means in the same column (ignoring the overall no-information exemplar condition) that do not share subscripts are significantly different at  $p < .05$ , as indicated by Fisher's least significant difference (LSD) comparisons. For the no-information exemplar condition where selection method was unknown, a median split on inferred deservingness was performed and means for the two groups are displayed in italics.

to greater role model acceptance,  $d_{21} = 0.50$ ,  $p < .001$ , and in turn, higher interest,  $b_2 = 0.61$ ,  $p < .001$ . The indirect effect was again significant,  $a_1d_{21}b_2 = -0.13$ , 95%CI [-0.24, -0.04].<sup>3</sup>

## 5.2.5 | Discussion

Study 3 further investigated the role of deservingness in determining reactions to a woman leader by examining the consequences of women's inferences about the deservingness of the leader whose selection method was unknown. Results showed that women's inferences about the exemplar's deservingness were highly associated to their interest in the leadership position: The more women thought the woman leader was deserving of the position, the greater their leadership interest. These results, which by and large mirror leadership interest responses in the merit and quota conditions, demonstrate that deservingness was critical to leadership interest independently of leader selection mode. Providing information about leader selection is but one way in which perceptions of deservingness can be elicited.

These findings lend support to the idea that even when information about the selection method is not openly conveyed, as can be the case in organizations, participants (implicitly) make inferences about the extent to which women leaders are deserving of their roles, which then determine their reactions. As shown in this study, the perception that women leaders are undeserving, even if based wholly on inference, is likely to hinder them from being role models and from inspiring others to pursue leadership positions. There no doubt are many different determinants of deservingness perceptions, and future research that aims to identify them is important if we are to fully understand the implications of this finding. Nevertheless, demonstrating that inferences of deservingness have such a high impact attests to the importance of the earlier finding showing that perceptions of lack of deservingness result from awareness that a quota policy has been operative in the selection of a woman leader.

## 6 | GENERAL DISCUSSION

This work provides an important addition to the current role model literature. It includes three replications of the finding that the capacity of women leaders to serve as role models for other women, enhancing their interest in becoming leaders themselves, is limited and does not always occur. The inspirational effects of being exposed to a woman leader occurred only when the woman leader was selected on a merit basis and was seen as being deserving of her position; when she was selected on the basis of a quota policy and seen as less deserving, women leaders were less accepted as role models, and other women's leadership aspirations were not increased.

The results support the idea that perceived deservingness is central to the consequences of quota-based selection by demonstrating

that competence validation enabled quota-selected women leaders to be inspiring role models for other women despite the way in which they were selected. With indication of her success, a quota-selected woman leader was as effective as a merit-selected woman leader in being accepted as a role model and encouraging other women's leadership aspirations. Thus, it was not the quota selection method itself but rather what it implied about the target's deservingness of the position that impeded acceptance of the target as a role model—a conclusion that was further supported when the selection method was unknown and participants' extemporaneous inferences about deservingness predicted their reactions. These findings are consistent with past work showing the importance of women's personal beliefs about whether a woman leader deserved her success in determining if she was able to serve as a role model (e.g., McIntyre et al., 2011; Taylor et al., 2011). They also provide support for the idea that to be a role model a woman exemplar's attainment of her position must be attributed internally to her qualifications and skills, not externally to situational factors that have little to do with her work-related competence. Future research could more explicitly test the role of internal versus external attributions as this might be a promising mediator variable.

There are also several incidental findings that lend insight into the effect of quota policies on women. Although the results of Study 1 indicate that women believed they had higher odds of being selected for the leader role when there was a quota policy, they did not report greater interest in it. These data argue against the idea that women are attracted to leadership positions simply because they think their chances of attaining them are greater due to a quota policy favouring women. Moreover, our results suggest that concerns about feeling unwelcome when selected by a quota-based policy did not play a definitive role in determining women's leadership interest.

Although the main focus of this research was on women, as women being the group underrepresented in leadership (e.g., World Economic Forum, 2020), the findings of Study 1 provide important insights into men's reactions. Contrary to our expectations, the presence of a woman leader promoted a sense of an unwelcoming organizational climate for men no matter how she was selected. However, men's pessimism about their prospects, which was key to their degree of interest in the leadership position, occurred only when the woman leader was said to have been selected on a quota basis; the presence of female leaders selected on a merit basis did not negatively affect men's interest. These results suggest that although men are not necessarily happy when an organization promotes and advertises its female leaders, they are deterred in their job interest only when they believe those female leaders to have benefited from gender preference. This finding is well in line with past work showing that diversity interventions targeting exclusively female employees can harm men's interest (e.g., Cundiff et al., 2018).

### 6.1 | Limitations and future research

Several of our findings lead to questions for further inquiry. To fully examine the issues of interest, it is important to replicate these

<sup>3</sup> As in Study 2, a parallel mediation model again ruled out organizational climate and chances to be selected as potential alternative explanations for women's interest (indirect effect via climate = -0.08, 95%CI [-0.23, 0.06], indirect effect via chances = -0.01, 95%CI [-0.02, 0.03]).

studies in actual work settings to determine whether the effects that we demonstrated in these highly controlled experimental studies will prevail in settings that tend to be less orderly and in which additional information is readily available and available on a continuous basis. For example, perceptions of competence-related deservingness, key to our leadership interest outcome for women, might be established by close contact with the exemplar or by ongoing exposure to her, naturally counteracting the effects of quota-based selection. Along similar lines, replication studies with working adult samples are needed to establish whether these effects also hold for people with more experience with the job market than management students. Related to the call for research among non-students, the increasing number of participants failing the manipulation check questions across the three studies deserves comment. Most likely, in Study 3, a relatively higher percentage of participants failed the manipulation check due to the different recruitment strategy (necessitated by the COVID-19 measures) and maybe also because of some participants' disengagement and lower willingness to pay close attention to the study materials during the high load of online studies and classes during the pandemic. Thus, research in actual work settings in non-pandemic times is necessary to establish the boundaries of the present effects.

Future research may also examine the effects of other selection policies aimed at increasing gender balance. A quota policy is the selection policy most likely to lead to presumptions of lack of deservingness (Heilman et al., 1998; Leslie, 2019), and therefore result in women's non-acceptance of the woman exemplar as a role model and men's pessimistic career projections. Other policies that explicitly factor merit into the selection procedure and are therefore more likely to promote internal attributions, such as favouring women only if qualifications are equal or considering women only if they surpass a designated qualifications criterion, should avert some of the undesirable outcomes in reactions to quotas and facilitate rather than discourage leadership interest.

## 6.2 | Applied implications

The present research has implications for organizations and nations that are considering or currently implementing quota regulations to remedy the underrepresentation of women in leadership. Our findings suggest that policies that impose quotas may undermine the beneficial effect of creating inspiring role models for other women while, at the same time, may reduce men's interest. In contrast, women leaders selected as a result of a policy focused squarely on qualifications promoted other women's interest in the position and did not discourage men. Thus, while increasing the presence of women leaders can be effective in facilitating greater gender balance, our findings suggest that how those women are believed to have obtained their positions is critical.

Results further suggest relevant provisions to ensure that quotas do not harm women in leadership more than they help. The lack of beneficial effects of quota strategies were shown to be mitigated if information about thereby selected women leaders is coupled with

information confirming they are well-equipped to do the job and are therefore deserving of the role. The finding that competence validation can be an antidote to the perception of lack of deservingness that is induced by quota-based selection suggests that organizations should take care to implement—and communicate the implementation of—gender quotas carefully and thoughtfully, being sure not only to highlight women's qualifications and competencies but also to signal that quotas do not denote a devaluing of work-related evaluative criteria. If this is communicated effectively, the inspiring effect of these women for others can likely be realized.

## 7 | CONCLUSION

Corporate gender quotas have been discussed around the world and implemented in several countries aiming to augment women's representation in leadership. Mandatory quota regulations have repeatedly been claimed to not only increase gender diversity in leadership, but to also create "additional beneficial long-term effects via more indirect routes such as role modelling" (Morgenroth & Ryan, 2018, p. 4; Reding, 2014). Our research raises questions about the pervasiveness of this claim by showing that the way in which women leaders are believed to have obtained their positions can determine whether they are accepted as role models. Specifically, the results suggest that gender quotas do not always foster women's aspirations and can sometimes thwart men's aspirations, undercutting the potentially beneficial effects of the presence of women leaders on others' leadership interest. However, the results also suggest that a wise implementation of quota regulations can overcome the potentially negative effects of quota-based selection, enabling women leaders selected on a quota basis to serve as inspiring role models for other women.

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## CONFLICT OF INTEREST

The authors report no conflict of interest with respect to the research, authorship, and/or publication of this article.

## DATA AVAILABILITY STATEMENT

The materials and data that support the findings of this research are openly available in OSF (<https://osf.io/puesv/>).

## ETHICAL STATEMENT

The manuscript adheres to ethical guidelines specified in the APA Code of Conduct and the present studies were approved by the university's ethics commission. They were risk-free for the participants, and anonymity was assured.

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