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Gender-Inclusive Campus Climate and Female Students' Leadership Aspirations: The Roles of Self-Efficacy and Belonging

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ABSTRACT

Women remain underrepresented in leadership, and the gap often begins with the aspirations young women form before they enter work. Universities are one setting where these aspirations take shape. Drawing on social cognitive career theory, this study examines whether a gender-inclusive campus climate raises female students' leadership aspiration. We propose two parallel routes. The first runs through academic self-efficacy, and the second runs through sense of belonging. Survey data from 230 female undergraduates at a university in China were analyzed with confirmatory factor analysis and parallel mediation (PROCESS Model 4, 5,000 bootstrap samples), controlling for age, year of study, and field of study. A gender-inclusive campus climate predicted academic self-efficacy and sense of belonging, and both predicted leadership aspiration. Both indirect effects were significant and did not differ significantly in size. A direct effect remained, which indicated partial mediation. The findings suggest that when female students experience fair and respectful treatment on campus, they feel more capable and more connected, and these states support their wish to lead. Universities can strengthen women's leadership pipeline by making equal treatment visible in classrooms and campus life.

Keywords: Gender-Inclusive Campus Climate, Leadership Aspiration, Academic Self-Efficacy, Sense of Belonging, Social Cognitive Career Theory
JEL Classifications: D71, I23, M14

1. INTRODUCTION

Women's presence in leadership has grown slowly across sectors and countries. In higher education itself, research on women's leadership has grown into a distinct field of study (Fauzi et al., 2024). Much of this work looks at women who already hold or seek senior posts. Yet the path to leadership starts much earlier. A meta-analysis found that women report lower leadership aspirations than men (Netchaeva et al., 2022). Leadership aspiration is the desire to hold leadership positions and to take responsibility for directing others in one's career (Gregor and O'Brien, 2016). Aspirations matter because they guide the goals young people set, the opportunities they pursue, and the roles they prepare for. A woman who never aims to lead is unlikely to be counted among future leaders, however capable she may be.

University is a formative period for these goals. Students test their abilities, build relationships, and form views about the roles open to them. They also observe how the institution treats people like themselves. Role congruity theory holds that perceived mismatches between the female gender role and leader roles can disadvantage women as leaders (Eagly and Karau, 2002). Such beliefs do not form in a vacuum. Classrooms, teachers, and peers can reinforce them or weaken them. The climate female students encounter on campus can therefore support or erode their wish to lead.

A gender-inclusive campus climate is the extent to which students perceive that women and men are treated equally, respected equally, and given equal voice in their university (Janz and Pyke, 2000). The concept grows out of research on the "chilly climate" for women in academic settings. It focuses on everyday experience

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rather than formal policy. A university may have equal opportunity rules and still leave female students feeling overlooked in class. An inclusive learning environment has been linked with female students' self-efficacy and identity in science courses (Cwik and Singh, 2023). College experiences also relate to female STEM students' self-perceived employability (Wen et al., 2023). These studies suggest that what women experience on campus carries forward into how they see their careers.

However, the link between campus climate and female students' leadership goals has received little direct attention. Studies of gender climate in higher education have often focused on faculty perceptions (Bordieri et al., 2024) or on instrument development (Beroíza-Valenzuela et al., 2024). Work on women's motivation to lead has examined same-sex role models and awareness of female leadership strengths (Boerner et al., 2025). Research on women's career development has applied social cognitive career theory mainly to managers already at work (Bonesso and Cortellazzo, 2025). The processes that connect students' everyday experience of fair treatment to their wish to lead remain unclear, particularly outside Western settings.

Addressing this gap is important for two reasons. First, social cognitive career theory holds that contextual supports shape career goals through personal beliefs and experiences (Lent et al., 1994, 2000). The theory has long been used to explain women's career development, beginning with the view that low self-efficacy can restrict women's career options (Hackett and Betz, 1981). Testing how campus climate reaches leadership aspiration can show which proximal processes carry the influence of context for female students. Second, the question has practical relevance in China. Chinese higher education enrolls a large share of women, and women's leadership in the sector has been examined from a gender role perspective (Wang and Wareewanich, 2024). Among young Chinese women, career aspirations have been tied to self-esteem and career decision-making self-efficacy (Sun, 2023). Chinese universities invest heavily in student development. They need to know which experiences to strengthen if they want more female graduates to seek leadership roles.

The present study responds to this need by testing a model of how a gender-inclusive campus climate shapes leadership aspiration among female university students in China. Using social cognitive career theory (Lent et al., 1994, 2000), we propose that a fair and respectful climate builds two personal resources. Students feel more capable, and they feel that they belong. Each resource then supports their wish to lead.

The first route runs through academic self-efficacy, which is students' confidence in their ability to learn and perform well in their courses (Pintrich et al., 1991). Self-efficacy is a central person input in social cognitive career theory (Lent et al., 1994). Female students who are treated as equally capable gain evidence that they can succeed. Self-efficacy also features in research on leadership development among women STEM students (Coluccio et al., 2024). We expect confident students to set more ambitious goals, including the goal of leading others.

The second route runs through sense of belonging, which is students' feeling of being accepted, valued, and comfortable as members of their academic community (Hoffman et al., 2002). Belonging is a basic human need (Baumeister and Leary, 1995). In higher education, it grows from respectful relationships with peers and teachers (Dost and Mazzoli Smith, 2023). Students who feel part of a community are more willing to speak, to contribute, and to imagine themselves in visible roles. Leadership is such a role.

Examining the two routes together offers a fuller account than either alone. Self-efficacy captures what female students believe about their ability. Belonging captures how they feel about their place among others. A climate that treats women fairly may work through both, and comparing the two shows which matters more. Figure 1 summarizes the model. The study tests the model with survey data from 230 female undergraduates at a university in China.

2. THEORETICAL BACKGROUND AND HYPOTHESES

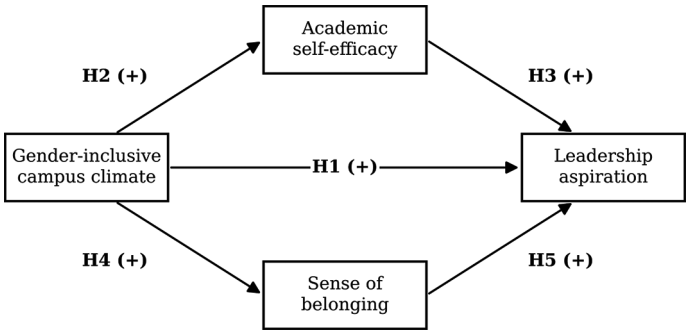
2.1. Social Cognitive Career Theory

Social cognitive career theory explains how people develop academic and career interests, make choices, and perform (Lent et al., 1994). It builds on Bandura's (1997) account of self-efficacy and human agency. Three person variables sit at its core. Self-efficacy beliefs are judgments about one's capability to carry out the actions a task requires. Outcome expectations are beliefs about the consequences of those actions. Personal goals are intentions to engage in an activity or to reach a particular level of attainment. Aspirations to pursue particular roles, such as leadership, belong to this third category.

The three variables influence one another. People form goals in areas where they feel capable and where they expect good results. Goals, in turn, organize behavior over time. They help people persist when rewards are distant. For this reason, the theory treats goals as a key link between beliefs and later career action (Lent et al., 1994).

The theory gives the environment an explicit role. Lent et al. (2000) described contextual supports and barriers as environmental

Figure 1: Conceptual model. H_1 to H_5 denote direct paths. H_6 and H_7 denote the indirect effects of gender-inclusive campus climate on leadership aspiration through academic self-efficacy and sense of belonging, respectively. Control variables are omitted for clarity



conditions that make it easier or harder for people to form and pursue career goals. Supports can shape goals directly. They can also act indirectly, by strengthening the beliefs and experiences that make goals feel attainable. Barriers work in the opposite direction. Social cognitive career theory therefore offers a clear explanation of how a setting can raise or lower what people aim for.

The theory has a long history in research on women's careers. Hackett and Betz (1981) proposed that women's socialization often provides fewer sources of efficacy for male-typed fields, which narrows the options women consider. Later work extended this logic to managerial careers. A recent study used the social cognitive career lens to trace women's managerial career development (Bonesso and Cortellazzo, 2025). The theory is well suited to explain why some women aim for leadership and others do not.

A gender-inclusive campus climate is a contextual support of this kind. It describes how fairly the university environment treats female students. Social cognitive career theory suggests that such a climate should raise leadership aspiration both directly and through proximal person variables. Academic self-efficacy is the theory's central belief. Sense of belonging captures the relational experience that the theory places within contextual support. A climate that treats women fairly can raise both, and each can feed the goal of leading. The sections below develop each path.

2.2. Gender-inclusive Campus Climate and Leadership Aspiration

The idea of a gender-inclusive climate comes from research on the "chilly climate" for women in higher education. Janz and Pyke (2000) developed a scale to assess students' perceptions of academic climates. It covers dimensions such as sexist treatment and the climate of the classroom. A gender-inclusive climate is the positive side of this experience. Female students in such a climate see that their ideas are taken seriously, that teachers treat women and men alike, and that their gender does not limit their opportunities.

Students' perceptions of gender climate are not uniform. Even within one institution, female and male faculty can appraise the gender climate differently (Bordieri et al., 2024). Measures of gender disparity in higher education now treat these perceptions as a distinct target of assessment (Beroíza-Valenzuela et al., 2024). Perceptions matter because students act on the environment as they experience it. Two students in the same program may draw different lessons from the same classroom, depending on how they interpret the treatment they receive.

Social cognitive career theory implies that a supportive context encourages ambitious goals (Lent et al., 2000). Leadership aspiration is such a goal. It requires a person to imagine holding authority, making decisions, and directing others. For many young women, this image competes with expectations about how women should behave. Role congruity theory explains that people often see the qualities linked with leadership as a poor fit with the female gender role (Eagly and Karau, 2002). Women who absorb this view may lower their aims, even when they have the ability to lead.

A gender-inclusive climate weakens this mismatch. When female students observe equal treatment, they receive evidence that the university does not regard women as less suited to authority. They can more readily picture themselves in roles of responsibility. Same-sex role models and awareness of female leadership strengths have been studied as influences on women's motivation to lead (Boerner et al., 2025). An inclusive campus offers related signals on a daily basis. It shows that women's contributions are welcome and that leadership is open to them.

The opposite is also instructive. In a climate where women's ideas are dismissed or their opportunities are limited, female students learn that leadership roles are reserved for others. Gender role expectations form part of the context for women's leadership in Chinese higher education (Wang and Wareewanich, 2024). A campus that counters these expectations through equal treatment should encourage its female students to aim higher. We therefore expect a direct and positive link between campus climate and leadership aspiration.

- H_1. Gender-inclusive campus climate is positively related to leadership aspiration.

2.3. Gender-inclusive Campus Climate and Academic Self-efficacy

Academic self-efficacy is students' confidence in their ability to learn and perform well in their courses (Pintrich et al., 1991). Bandura (1997) identified four sources of self-efficacy. Mastery experiences are successes that people achieve through their own effort. Vicarious experiences come from watching similar others succeed. Verbal persuasion is the encouragement and feedback people receive from others. Physiological and emotional states, such as anxiety, also shape how capable people feel.

A gender-inclusive climate touches each of these sources. Classrooms that give women equal chances to contribute create more opportunities for mastery. A female student who presents an idea and sees it taken seriously gains direct evidence of her competence. Visible female success, among peers and teachers, offers vicarious evidence of capability. Teachers who treat women and men alike provide a form of verbal persuasion. Their fairness tells female students that they are expected to succeed. A respectful climate also lowers the anxiety that comes from feeling judged by one's gender, which frees students to perform.

Hackett and Betz (1981) argued that women's lower self-efficacy in some domains reflects unequal access to these sources rather than lower ability. A climate that equalizes access should narrow such gaps. The same reasoning applies to academic work in general. When the learning environment sends consistent signals that women are capable, female students are more likely to believe it.

Evidence supports this link. Students' perceptions of an inclusive learning environment predicted female and male students' physics self-efficacy (Cwik and Singh, 2023). In science, mathematics, and engineering classes, students' belongingness and self-efficacy were related to their response to active learning (Finelli et al., 2023). Among Chinese students in physical education programs,

academic self-perception followed gendered pathways (Yang et al., 2025). These findings suggest that the way a learning environment treats gender shapes how students judge their own competence. We expect female students who perceive a more inclusive climate to report higher academic self-efficacy.

- H_2. Gender-inclusive campus climate is positively related to academic self-efficacy.

2.4. Academic Self-efficacy and Leadership Aspiration

Social cognitive career theory holds that self-efficacy beliefs shape the goals people set (Lent et al., 1994). People aim for roles they believe they can perform. They avoid roles in which they expect to fail. Self-efficacy also affects how people respond to obstacles. Those with strong efficacy beliefs treat difficulties as challenges to master, while those with weak beliefs are more likely to give up (Bandura, 1997).

Leadership roles demand competence, judgment, and the ability to handle complex tasks. They also expose people to evaluation by others. A student who doubts her ability is unlikely to seek such exposure. A student who feels capable in her studies, by contrast, has a basis for believing she can meet the demands of a leadership role. Academic self-efficacy is not the same as leadership self-efficacy. Still, for university students, academic performance is the most salient evidence of ability. Confidence in this domain is likely to spill over into broader judgments about what one can achieve.

Research on women's career development supports this reasoning. Among young Chinese women, career decision-making self-efficacy helped explain the link between self-objectification and career aspirations (Sun, 2023). A study of women STEM students examined self-efficacy together with task behaviors and university training as elements of leadership development (Coluccio et al., 2024). Among Chinese university teachers, self-efficacy played a role in professional leadership (Yin and Zhang, 2025). Across these settings, people who feel capable appear more ready to take on responsibility for others.

This link carries particular weight for women. Because gender role expectations can make leadership seem less fitting for women (Eagly and Karau, 2002), female students may need stronger evidence of their competence before they aim to lead. Academic self-efficacy supplies some of that evidence. It gives female students a reason to believe that they can lead, and that belief should translate into stronger leadership aspiration.

- H_3. Academic self-efficacy is positively related to leadership aspiration.

2.5. Gender-inclusive Campus Climate and Sense of Belonging

Belonging is a basic human need. People are motivated to form and maintain stable, positive relationships, and they suffer when this need is unmet (Baumeister and Leary, 1995). In higher education, sense of belonging refers to students' feeling that they are accepted and valued members of their academic community (Hoffman et al., 2002). It includes comfort in class, support from peers, and a sense that teachers care. Qualitative evidence places relationships with peers and teachers, and comfort in academic settings, at the center of students' belonging (Dost and Mazzoli Smith, 2023).

Belonging is sensitive to signals about one's group. Walton and Cohen (2007) showed that students from groups who are negatively stereotyped in an academic field are more uncertain about whether they belong there. Small cues can raise or lower this uncertainty. When students see that people like them are treated as full members, they feel more secure. When they see the opposite, they begin to question whether they fit.

A gender-inclusive climate sends positive signals of this kind to female students. Fair treatment shows that women are full members of the community rather than guests. Classrooms that value female students' ideas make it easier for them to speak and to contribute. Teachers who give women equal opportunities communicate that their presence is expected and welcome. Each of these experiences reduces doubt about fit and strengthens the feeling of acceptance.

Evidence indicates that belonging is shaped by gender. Students define belonging in different ways, and these definitions vary with gender and socioeconomic background (Fernández et al., 2023). Students' descriptions of belonging in STEM have also been examined by gender and ethnicity (Dost, 2024). Belonging, in this light, depends partly on whether the environment treats one's group with respect. An inclusive climate removes a common reason for women to feel out of place, so female students who perceive such a climate should report a stronger sense of belonging.

- H_4. Gender-inclusive campus climate is positively related to sense of belonging.

2.6. Sense of Belonging and Leadership Aspiration

Belonging gives students a secure base from which to act. When the need to belong is satisfied, people can turn their attention from social threat to growth and achievement (Baumeister and Leary, 1995). Students who feel accepted do not need to spend energy monitoring whether they fit. They can focus on their goals and take risks that visibility requires.

Leadership requires such risks. Leaders speak up, take initiative, and expose their ideas to others' judgment. In the measure developed by Hoffman et al. (2002), belonging includes comfort in asking questions and contributing to class discussion. These are small forms of the same behavior that leadership demands on a larger scale. A female student who feels comfortable voicing her views in class is practicing the visibility that leading involves. Over time, this practice can make leadership feel familiar rather than foreign.

Belonging also supports well-being, which can sustain ambitious goals. It has been examined alongside loneliness and academic anxiety as a factor in student well-being (Dost, 2025). Students who feel secure and connected are better placed to imagine demanding futures. Those who feel isolated may focus instead on simply getting through their studies.

Social cognitive career theory supports this path. Lent et al. (2000) noted that social support and relational experiences help people translate interests into goals. A sense of belonging is the relational counterpart of self-efficacy. Self-efficacy tells female students that they can perform. Belonging tells them that others welcome their contributions. This assurance can encourage them to seek roles in which they guide others.

- H_5. Sense of belonging is positively related to leadership aspiration.

2.7. The Parallel Mediating Roles of Academic Self-efficacy and Sense of Belonging

The arguments above describe two routes from a gender-inclusive campus climate to leadership aspiration. Both follow the logic of social cognitive career theory, in which contextual supports shape goals partly through the person variables they strengthen (Lent et al., 1994, 2000). On the confidence route, fair treatment builds female students' belief in their academic ability, and confident students set higher goals. On the relational route, fair treatment makes female students feel accepted, and accepted students are more willing to step into visible roles.

The confidence route reflects the core of the theory. Contextual supports provide the experiences from which self-efficacy grows (Bandura, 1997). An inclusive climate gives female students more chances to succeed, more models of female success, and more encouragement. These experiences raise academic self-efficacy, which in turn makes leadership seem attainable. Through this sequence, the climate shapes aspiration by changing what female students believe about their ability.

The relational route reflects the social side of the environment. An inclusive climate signals that women are full members of the academic community (Walton and Cohen, 2007). This signal strengthens belonging, and belonging gives female students the security to seek visible roles. Through this sequence, the climate shapes aspiration by changing how female students feel about their place among others.

The two routes are conceptually distinct. Academic self-efficacy concerns whether students believe they can succeed (Bandura, 1997). Sense of belonging concerns whether they feel accepted by the people around them (Hoffman et al., 2002). A student may feel capable yet out of place, or accepted yet unsure of her ability. Each resource should therefore carry part of the effect of campus climate on leadership aspiration. Neither is likely to explain the whole effect, because an inclusive climate may also shape aspiration in other ways, such as through expectations about the rewards of leadership. Testing the two mediators together shows whether an inclusive climate matters more for female students' confidence or for their connection to the community.

- H_6. Academic self-efficacy mediates the positive relationship between gender-inclusive campus climate and leadership aspiration.
- H_7. Sense of belonging mediates the positive relationship between gender-inclusive campus climate and leadership aspiration.

Figure 1 presents the conceptual model.

3. METHODS

3.1. Context, Sample, and Procedure

The study was conducted among female undergraduate students at a university in mainland China. China suits the research question. Its universities enroll large numbers of women, and women's leadership in Chinese higher education has been examined from a gender role perspective (Wang and Wareewanich, 2024). Young Chinese women's career aspirations are also linked with how they view themselves (Sun, 2023). Knowing which campus experiences support female students' wish to lead is therefore a practical concern for Chinese universities.

Respondents were enrolled female undergraduates aged 18 or older. Eligibility questions at the start of the questionnaire confirmed that each respondent was female and a currently enrolled undergraduate at the university. Students were recruited through convenience sampling. Data came from a one-time, self-reported online survey. Participation was voluntary and anonymous, respondents gave informed consent, and no identifying information was collected. The questionnaire contained one attention-check item.

The questionnaire was administered in Chinese. All items were originally developed in English, so we followed a translation and back-translation procedure (Brislin, 1970). A bilingual researcher translated the items into Chinese. A second bilingual researcher, who had not seen the original items, translated the Chinese version back into English. The two researchers compared the back-translated and original versions and resolved discrepancies in wording. A pilot test with 20 female students then checked clarity and completion time. Minor wording changes followed. The pilot students were not part of the main sample.

The survey link was distributed to 450 students, and 257 returned the questionnaire, a response rate of 57.1%. We removed 27 respondents who failed the attention check. The final sample comprised 230 female students. Table 1 summarizes the sample. The mean age was 20.51 years (SD = 1.37), and the mean year of study was 2.47 (SD = 0.91). Almost one-third of the respondents (32.6%) studied a STEM field.

3.2. Measures

All constructs were measured with scales adapted from established instruments. For consistency across the questionnaire, all items used five-point response formats. The Appendix A lists every item.

Table 1: Sample characteristics (N=230)

Variable	Category	n	%
Field of study	STEM	75	32.6
	Non-STEM	155	67.4
Age (years)	M=20.51, SD=1.37, range 18-24		
Year of study	M=2.47, SD=0.91, range 1-4		

3.2.1. Gender-inclusive campus climate

Five items adapted from the Perceived Chilly Climate Scale (Janz and Pyke, 2000) measured gender-inclusive campus climate. The items drew on the sexist treatment and classroom climate dimensions of the original scale and were worded positively. A sample item is "At my university, female and male students are treated equally." Responses ranged from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha was 0.84.

3.2.2. Academic self-efficacy

Eight items adapted from the self-efficacy for learning and performance subscale of the Motivated Strategies for Learning Questionnaire (Pintrich et al., 1991) measured academic self-efficacy. The items referred to students' courses in general. A sample item is "I'm confident I can learn the basic concepts taught in my courses." Responses ranged from 1 (not at all true of me) to 5 (very true of me). Alpha was 0.89.

3.2.3. Sense of belonging

Five items adapted from the sense of belonging scale developed by Hoffman et al. (2002) measured sense of belonging. A sample item is "I feel comfortable contributing to class discussions." Responses ranged from 1 (strongly disagree) to 5 (strongly agree). Alpha was 0.87.

3.2.4. Leadership aspiration

Five items adapted from the leadership aspiration subscale of the Career Aspiration Scale-Revised (Gregor and O'Brien, 2016) measured leadership aspiration. A sample item is "I hope to become a leader in my career field." Responses ranged from 1 (not at all true of me) to 5 (very true of me). Alpha was 0.85.

3.2.5. Control variables

We controlled for age (years), year of study, and field of study (0 = non-STEM, 1 = STEM). Older and more advanced students may have clearer career goals, and female students in STEM fields may experience campus climate differently from those in other fields.

3.3. Analytical Strategy

We followed a two-step procedure. First, confirmatory factor analysis (CFA) with maximum likelihood estimation evaluated the measurement model against widely used benchmarks for acceptable fit: CFI and TLI close to or above 0.90, and RMSEA and SRMR at or below 0.08 (Browne and& Cudeck, 1993; Hu and Bentler, 1999). The stricter cutoffs proposed by Hu and Bentler (1999) were not treated as universal rules, because they can be overly demanding for many applied models (Marsh et al., 2004). Each construct was modeled as a first-order factor with its full set of items. We compared the hypothesized four-factor model with a three-factor model that merged the two mediators and with a one-factor model. Composite reliability (CR), average variance extracted (AVE), the Fornell and Larcker (1981) criterion, and the heterotrait-monotrait ratio (HTMT; Henseler et al., 2015) established reliability and validity.

Second, we tested the hypotheses using PROCESS Model 4 for parallel mediation (Hayes, 2022). Indirect effects were estimated with 5,000 percentile bootstrap samples, and a contrast test compared the two indirect effects (Preacher and Hayes, 2008). An indirect effect was considered significant when its 95% confidence interval excluded zero. All controls entered every equation. Unstandardized coefficients are reported.

To address common method variance (Podsakoff et al., 2003), the questionnaire assured anonymity, stated that there were no right or wrong answers, and separated the predictor and outcome measures. Statistically, we applied Harman's single-factor test, compared the measurement model with a one-factor alternative, and examined variance inflation factors (Kock, 2015).

4. RESULTS

4.1. Measurement Model

The four-factor measurement model showed acceptable fit: $\chi^2(224) = 472.66$, $\chi^2/df = 2.11$, CFI = 0.903, TLI = 0.890, RMSEA = 0.070, SRMR = 0.073. CFI, RMSEA, and SRMR met the benchmarks, and TLI fell just short of 0.90. The model fit significantly better than the three-factor model that merged academic self-efficacy and sense of belonging: $\chi^2(227) = 1033.73$, CFI = 0.684, TLI = 0.648, RMSEA = 0.125, SRMR = 0.142, $\Delta\chi^2(3) = 561.08$, $P < 0.001$.

All standardized loadings were significant and ranged from 0.59 to 0.87 (Table 2). The lowest loading belonged to a belonging item (SOB5, 0.59). It was retained because it was significant, the scale's AVE met the benchmark, and removing it would have narrowed the content of the established scale. Cronbach's alpha ranged from 0.84 to 0.89, and CR ranged from 0.84 to 0.90.

Table 2: Measurement model: standardized loadings, reliability, and convergent validity

Construct and item	Loading	α	CR	AVE
Gender-inclusive campus climate		0.84	0.84	0.52
GIC1	0.65			
GIC2	0.62			
GIC3	0.77			
GIC4	0.80			
GIC5	0.73			
Academic self-efficacy		0.89	0.90	0.52
ASE1	0.77			
ASE2	0.72			
ASE3	0.76			
ASE4	0.72			
ASE5	0.78			
ASE6	0.64			
ASE7	0.67			
ASE8	0.69			
Sense of belonging		0.87	0.87	0.58
SOB1	0.76			
SOB2	0.85			
SOB3	0.87			
SOB4	0.70			
SOB5	0.59			
Leadership aspiration		0.85	0.85	0.53
LA1	0.69			
LA2	0.71			
LA3	0.75			
LA4	0.83			
LA5	0.67			

All loadings significant at $P<0.001$. Model fit: χ^2 (224)=472.66, χ^2/df=2.11, CFI=0.903, TLI=0.890, RMSEA=0.070, SRMR=0.073. CR: Composite reliability, AVE: Average variance extracted. Item wording appears in the Appendix

AVE values ranged from 0.52 to 0.58, above the 0.50 benchmark (Fornell and Larcker, 1981). Reliability and convergent validity were therefore supported.

The square root of each AVE exceeded that construct's correlations with the other constructs (Table 3). HTMT ratios ranged from 0.08 to 0.36, below the 0.85 threshold (Henseler et al., 2015). Discriminant validity was established.

4.2. Common Method Variance

The first unrotated factor in Harman's test explained 27.1% of the total variance. A one-factor model fit poorly ($\chi^2(230) = 1746.00$, CFI = 0.406, TLI = 0.347, RMSEA = 0.170, SRMR = 0.175) and was significantly worse than the four-factor model ($\Delta \chi^2(6) = 1273.34$, $P < 0.001$). The highest variance inflation factor was 1.11, well below 3.3 (Kock, 2015). Common method variance did not appear to threaten the results.

4.3. Descriptive Statistics and Correlations

Table 3 reports the means, standard deviations, and correlations. Gender-inclusive campus climate correlated positively with academic self-efficacy (r = 0.24, P < 0.001), sense of belonging (r = 0.21, P = 0.001), and leadership aspiration (r = 0.27, P < 0.001). Academic self-efficacy (r = 0.31) and sense of belonging (r = 0.30) both correlated positively with leadership aspiration (P < 0.001). The two mediators were nearly unrelated to each other (r = 0.07, P = 0.319). None of the control variables correlated significantly with the focal constructs.

4.4. Hypothesis Testing

Table 4 reports the regression results. In the total-effect model, gender-inclusive campus climate predicted leadership aspiration after the controls were included (b = 0.283, SE = 0.068, t = 4.14, P < 0.001, 95% CI [0.148, 0.418]). H_1 was supported. Campus climate predicted academic self-efficacy (b = 0.227, SE = 0.061, t = 3.69, P < 0.001, 95% CI [0.106, 0.348]). H_2 was supported. In the outcome model, academic self-efficacy predicted leadership aspiration (b = 0.288, SE = 0.069, t = 4.15, P < 0.001, 95% CI [0.151, 0.425]). H_3 was supported. Campus climate also predicted sense of belonging (b = 0.222, SE = 0.068, t = 3.28, P = 0.001, 95% CI [0.089, 0.356]). H_4 was supported. Sense of belonging predicted leadership aspiration (b = 0.264, SE = 0.063, t = 4.21, P < 0.001, 95% CI [0.140, 0.388]). H_5 was supported. The full model explained 20.0% of the variance in leadership aspiration.

The indirect effect through academic self-efficacy was positive and significant (effect = 0.065, BootSE = 0.030, 95% CI [0.018, 0.135]). H_6 was supported. The indirect effect through sense of belonging was also significant (effect = 0.059, BootSE = 0.026, 95% CI [0.016, 0.116]). H_7 was supported (Table 5). The total indirect effect was 0.124 (95% CI [0.054, 0.213]), about 44% of the total effect. With both mediators in the model, the direct effect of campus climate remained significant but smaller (b = 0.159, SE = 0.067, t = 2.37, P = 0.019, 95% CI [0.027, 0.292]), which indicated partial mediation. The contrast between the two indirect effects was not significant (difference = 0.007, 95% CI [−0.066, 0.088]).

No control variable had a significant effect on academic self-efficacy, sense of belonging, or leadership aspiration.

5. DISCUSSION

This study examined whether a gender-inclusive campus climate relates to leadership aspiration among female university students in China, and through which processes. All seven hypotheses were supported. Female students who perceived their campus as fair and respectful toward women reported stronger academic self-efficacy and a stronger sense of belonging. Both resources predicted leadership aspiration, and both carried part of the effect of campus climate. A direct effect remained after the mediators entered the model.

5.1. Theoretical Implications

The findings carry three implications. First, they extend research on women's leadership aspiration to the university context. Earlier work established that women report lower leadership aspirations than men (Netchaeva et al., 2022) and examined role models and strength awareness as influences on women's motivation to lead (Boerner et al., 2025). Our results add the everyday climate of the university to this list. Female students who saw equal treatment on campus reported stronger aspirations to lead. This pattern fits the view in social cognitive career theory that contextual supports shape career goals (Lent et al., 2000).

Second, the study clarifies how campus climate reaches leadership aspiration. Research on inclusive learning environments has linked inclusiveness with female students' self-efficacy (Cwik and Singh, 2023), and research on belonging has treated relationships and comfort as its foundation (Dost and Mazzoli Smith, 2023). Our findings connect these streams. A gender-inclusive climate worked through both a belief in one's ability and a feeling of acceptance. The two indirect effects did not differ significantly in

Table 3: Means, standard deviations, and correlations

Variable	M	SD	1	2	3	4	5	6	7
1. Gender-inclusive campus climate	3.45	0.79	(0.72)						
2. Academic self-efficacy	3.46	0.75	0.24***	(0.72)					
3. Sense of belonging	3.53	0.82	0.21**	0.07	(0.76)				
4. Leadership aspiration	3.47	0.84	0.27***	0.31***	0.30***	(0.73)			
5. Age	20.51	1.37	−0.00	−0.01	−0.07	0.01	–		
6. Year of study	2.47	0.91	−0.01	0.04	−0.08	0.04	0.17**	–	
7. Field (STEM)	0.33	0.47	0.04	0.07	−0.02	−0.00	0.03	−0.08	–

N=230. Values in parentheses on the diagonal are square roots of AVE. Field: 0=Non-STEM, 1=STEM. HTMT ratios among the focal constructs ranged from 0.08 to 0.36.
** P<0.01. *** P<0.001

Table 4: Regression results for the parallel mediation model (PROCESS Model 4)

Predictor	Academic self-efficacy	Sense of belonging	Leadership aspiration
Gender-inclusive campus climate	0.227*** (0.061)	0.222** (0.068)	0.159* (0.067)
Academic self-efficacy			0.288*** (0.069)
Sense of belonging			0.264*** (0.063)
Age	−0.012 (0.036)	−0.036 (0.040)	0.014 (0.037)
Year of study	0.041 (0.054)	−0.065 (0.059)	0.046 (0.056)
Field (STEM)	0.098 (0.103)	−0.055 (0.114)	−0.030 (0.108)
R^2	0.06	0.06	0.20

N=230. Unstandardized coefficients with standard errors in parentheses. Total effect of gender-inclusive campus climate on leadership aspiration with controls: b=0.283, SE=0.068, P<0.001, 95% CI [0.148, 0.418], R^2=0.07. *P<0.05. **P<0.01. ***P<0.001

Table 5: Direct and indirect effects

Effect	Estimate	SE/ BootSE	95% CI
Total effect	0.283	0.068	[0.148, 0.418]
Direct effect	0.159	0.067	[0.027, 0.292]
Indirect via academic self-efficacy (H_6)	0.065	0.030	[0.018, 0.135]
Indirect via sense of belonging (H_7)	0.059	0.026	[0.016, 0.116]
Total indirect effect	0.124	0.041	[0.054, 0.213]
Contrast (self-efficacy minus belonging)	0.007	0.039	[−0.066, 0.088]

Indirect effects tested with 5,000 percentile bootstrap samples. Confidence intervals that exclude zero indicate significant effects. All control variables included

size, and the two mediators were nearly unrelated to each other. Female students' leadership goals appear to rest on confidence and connection together rather than on either one alone.

Third, the remaining direct effect suggests that campus climate influences aspiration through processes beyond those tested here. An inclusive climate may also shape outcome expectations, which social cognitive career theory treats as a separate person variable (Lent et al., 1994). Female students who see women treated fairly may expect that leadership will bring rewards rather than penalties. This possibility deserves direct testing.

5.2. Practical Implications

The findings offer guidance for universities that want to strengthen women's leadership pipeline. First, equal treatment should be visible in teaching. Instructors can give female and male students equal opportunities to speak, take women's contributions seriously in discussion, and avoid gendered assumptions about ability. Faculty development programs can include these practices. Such steps cost little and may shape how female students see their own potential.

Second, universities can build female students' academic self-efficacy directly. Challenging tasks with timely feedback create mastery experiences (Bandura, 1997). Visible female role models among faculty and alumni offer vicarious evidence of success. Mentoring schemes can pair female students with women who hold leadership positions.

Third, universities should attend to belonging. In this study, belonging centered on female students' comfort in speaking and contributing in class. Small-group learning, peer networks, and student organizations that welcome women in leadership positions can strengthen this feeling. Student affairs offices in Chinese universities can track female students' perceptions of campus climate as part of routine student surveys.

5.3. Limitations and Future Research

This study has limitations that suggest directions for future research. First, the cross-sectional design does not allow causal conclusions. Students with stronger aspirations may perceive their campus more favorably. Longitudinal designs that measure campus climate, the mediators, and leadership aspiration at different times would provide stronger evidence on the direction of effects. Second, all variables came from the same respondents. Procedural and statistical checks suggested that common method variance did not distort the results, but it cannot be ruled out. Future studies could pair students' self-reports with institutional indicators of gender equity or with reports from instructors.

Third, the sample came from one university in China and included only female students. The findings may not generalize to other institutions, regions, or countries. Including male students would allow researchers to test whether campus climate matters more for women's aspirations than for men's. Fourth, leadership aspiration was measured as a stated goal. Aspirations do not always translate into later behavior. Future work could follow female graduates into the workforce and examine whether climate-driven aspirations predict leadership emergence.

6. CONCLUSION

Leadership gaps often begin with the goals young women set. This study shows that the university climate helps shape those goals. Among female undergraduates in China, a gender-inclusive campus climate predicted stronger leadership aspiration. It did so partly by raising students' academic self-efficacy and partly by strengthening their sense of belonging. Universities that want more women to lead can start by treating female students as equally capable and equally welcome.

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APPENDIX A: MEASUREMENT ITEMS

Gender-inclusive campus climate (adapted from the Perceived Chilly Climate Scale; Janz and Pyke, 2000; 1 = strongly disagree, 5 = strongly agree)

- GIC1. At my university, female and male students are treated equally.
- GIC2. Female students' ideas are taken as seriously as male students' ideas in my classes.
- GIC3. Teachers at my university give female and male students equal opportunities to participate in class.
- GIC4. At my university, female students are not treated differently because of their gender.
- GIC5. At my university, female students have the same opportunities as male students to take on responsibilities.

Academic self-efficacy (adapted from the MSLQ self-efficacy for learning and performance subscale; Pintrich et al., 1991; 1 = not at all true of me, 5 = very true of me)

- ASE1. I believe I will receive excellent grades in my courses.
- ASE2. I'm certain I can understand the most difficult material presented in the readings for my courses.
- ASE3. I'm confident I can learn the basic concepts taught in my courses.
- ASE4. I'm confident I can understand the most complex material presented by the instructors in my courses.
- ASE5. I'm confident I can do an excellent job on the assignments and tests in my courses.
- ASE6. I expect to do well in my courses.
- ASE7. I'm certain I can master the skills being taught in my courses.
- ASE8. Considering the difficulty of my courses, the teachers, and my skills, I think I will do well in my courses.

Sense of belonging (adapted from Hoffman et al., 2002; 1 = strongly disagree, 5 = strongly agree)

- SOB1. I feel comfortable asking a question in class.
- SOB2. I feel comfortable volunteering ideas or opinions in class.
- SOB3. Speaking in class is easy because I feel comfortable.
- SOB4. I feel comfortable contributing to class discussions.
- SOB5. I like knowing other people in my classes.

Leadership aspiration (adapted from the leadership aspiration subscale of the Career Aspiration Scale-Revised; Gregor and O'Brien, 2016; 1 = not at all true of me, 5 = very true of me)

- LA1. I hope to become a leader in my career field.
- LA2. When I am established in my career, I would like to manage other employees.
- LA3. I want to have responsibility for the future direction of my organization or business.
- LA4. I hope to move up to a leadership position in my organization or business.
- LA5. I plan to rise to the top leadership position of my organization or business.