# RESEARCH ARTICLE

# From policy to mindset: Psychological mechanisms linking genderneutral language to perceptions of educational opportunity

ISSN: 2424-8975 (O)

2424-7979 (P)

Xinyun Chen<sup>1</sup>, Zhiyi Zhang<sup>2</sup>, Fangqin You<sup>3</sup>, Limin Wei<sup>4</sup>, Wenzhou Shu<sup>5</sup>, Lan Wu<sup>6,7</sup>, Ning Tang<sup>8\*</sup>

- <sup>1</sup> YUNNAN UNIVERSITY, Kunming, 650091, Yunnan, China
- <sup>2</sup> University of Edinburgh, Edinburgh, EH8 8AQ, UK
- <sup>3</sup> Al-Farabi Kazakh National university, Almaty, 050040, Republic of Kazakhstan
- <sup>4</sup> Kyrgyz State University named after I. Arabaev, Bishkek, 720026, Kyrgyzstan
- <sup>5</sup> Sichuan International Studies University, Chongqing, 400031, China
- <sup>6</sup> INTI International University, Negeri Sembilan, 71800, Malaysia
- <sup>7</sup> Sichuan TOP IT Vocational Institute, Chengdu, 611743, Sichuan, China
- <sup>8</sup> Faculty of Humanities and Social Sciences, Macao Polytechnic University, Macao, 999078, China
- \* Corresponding author: Ning Tang, TSWC886@163.com

#### **ABSTRACT**

As an institutional or symbolic change, gender-neutral language (GNL) frequently has been discussed, although its psychological impacts have not been thoroughly researched. This experimental study is informed by the framing theory, stereotype threat, social identity theory, and expectancy-value theory in testing the hypothesis that gender-neutral and gendered institutional text exposures, using the framing theory, effect perceptions of fairness, belonging, and aspirational intent. In a between subjects research design (N = 200), the subjects viewed either gendered or gender-neutral passages of scholarship and policy and took self-report measures and an implicit association test. GNL augmented perceived fairness and belonging and augmentation of intent to apply; greatest impacts were in women and non-binary participants. These findings demonstrate that inclusive language is a cognitive intervention that directs inspirational avenues to opportunity. Direct implications of the findings in the case of educators and policymakers: the small, inexpensive amendments made to institutional texts can positively influence the perceptions of the accessibility and reinforce the engagement of underrepresented population.

Keywords: GNL; psychological framing; stereotype threat; fairness perception; educational opportunity; social identity

# 1. Introduction

Language is not only a reflection of social reality, but it is a construction of it and the ways in which people think concerning themselves, and others [1]. While recent studies have focused on the institutional impacts of gender-neutral language (GNL) on resource allocation and demographic inclusion<sup>[2,3]</sup>, less attention has been paid to its psychological effects. Specifically, how does GNL alter the *mindset* of individuals navigating educational spaces? This question is crucial because equity is not only achieved

#### ARTICLE INFO

Received: 2 September 2025 | Accepted: 22 September 2025 | Available online: 20 October 2025

#### CITATION

Chen XY, Zhang ZY, You FQ, et al. From policy to mindset: Psychological mechanisms linking gender-neutral language to perceptions of educational opportunity. *Environment and Social Psychology* 2025; 10(10): 4121 doi:10.59429/esp.v10i10.4121

#### COPYRIGHT

Copyright © 2025 by author(s). *Environment and Social Psychology* is published by Arts and Science Press Pte. Ltd. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/), permitting distribution and reproduction in any medium, provided the original work is cited.

through redistributive policies but also through the cognitive frames that guide how opportunities are perceived and pursued.

Psychological research shows that linguistic cues activate schemas that frame perception and judgment <sup>[4]</sup>. When scholarship advertisements or course descriptions are phrased in gendered terms - such as "for male and female students" - they implicitly reinforce binary categories and marginalize those who do not fit them <sup>[5]</sup>. Conversely, inclusive language such as "for all students" may disrupt stereotype activation, deplete perceived barriers, and have a sense of belonging <sup>[6]</sup>. This is consistent with social identity theory, which states that the awareness of one's identity increases engagement and motivation <sup>[7]</sup>.

In addition, GNL applies to the concept of stereotype threat, in which stigmatized identities result in impaired performance <sup>[8]</sup>. By de-gendering cues, inclusive language desensitized and primed perceptions of fairness. Such perceptual shifts are not inconsequential: students who perceive opportunities to be distributed more-or-less equitably are more likely to have aspirations than students who perceive opportunities to be distributed inequitably, thereby supporting the goals of equity in education <sup>[9]</sup>.

As such, the present study conceptualizes GNL as process that is psychological rather than merely symbolic or policy. Using synthetic text stimuli that aims to approximate policy and institutional discourses, we examine the influence of exposure to GNL on perceptions of fairness, belongingness, and aspirational motivation. This approach links the macro-level policy debates to the micro-level of cognitive psychology, in order to make a new contribution to understanding how linguistic reforms actually translate into lived opportunities.

While institutional analyses of GNL have demonstrated that GNL changes policies and resource distribution [10,11], the psychological mechanisms of GNL are under-theorized at present. In particular, the micro-level processes through which individuals cognitively represent inclusive language, therefore, are central to understanding how symbolic reform influences behavior.

Inclusive pronouns and titles are used in an effort to generate more recognition for women and non-binary people as legitimate members of academic and professional fields<sup>[12]</sup>. These psychological effects occur before any material redistribution, and so show that equity is first perceived. Therefore, linguistic reforms should be conceptualized not only as institutional plans but also as psychological agents that have an impact on motivational channels.

Moreover, GNL and identity-based motivation are important in interaction. According to expectancy-value theory<sup>[13]</sup>, people will be more likely to seek opportunities that they find to be valuable and achievable. When institutional texts use gender-neutral language, they signal implicitly that all groups are valued, which increases the perceptions of attainability for marginalized groups. This implies that the motivational effect of GNL is not limited to symbolic inclusion - it increases students' willingness to compete for resources and positions that would otherwise appear inaccessible.

Finally, the psychological mechanisms of GNL can be located in the wider discourses of social cognition. Language constructs the categories by which individuals interpret belongingness and exclusion [14]. When policies refer to "students" instead of "boys and girls," they erase exclusionary boundaries, creating what Moscovici [15] terms a "social representation" of equity. Such representations are internalized, shaping collective attitudes and behaviors that reinforce institutional fairness. By foregrounding these mechanisms, the present study aims to bridge the gap between policy-level debates on equity and individual-level cognitive responses to linguistic reform.

Although institutional research shows that gender-neutral language can accompany resource redistribution, there is limited experimental evidence on the *psychological* pathways that link wording to perceptions and behavior. This paper addresses that gap by treating GNL as a potential cognitive intervention and testing specific mechanisms-fairness perception, stereotype threat activation, identity validation, and motivational expectancy-that may mediate effects on aspirational intent. We therefore test the following hypotheses:

- **H1 (Fairness):** Exposure to gender-neutral language increases perceived fairness of educational opportunities compared with gendered language.
- **H2** (**Threat**): Gender-neutral language reduces indicators of stereotype threat relative to gendered language.
- **H3** (Motivation & Belonging): Gender-neutral language increases belongingness and aspirational intent, and these effects will be stronger among women and non-binary participants.

#### 1.1. Related researches

The relationship between language, equity, and opportunity has been examined from diverse disciplinary angles. Earlier research in sociolinguistics and education focused on the symbolic dimensions of language reforms, whereas more recent scholarship has emphasized institutional and demographic outcomes. However, the psychological mechanisms by which gender-neutral language (GNL) influences perceptions of opportunity remain underdeveloped in the literature. This section synthesizes existing work across four interrelated domains i.e. language and symbolic power, gender-neutral language and representation, educational equity and resource allocation, and psychological mechanisms linking language to perception.

### 1.1.1. Language and symbolic power

Scholars of critical discourse have long argued that language is a site of power, shaping not only communication but also the construction of social hierarchies <sup>[1,14]</sup>. Through linguistic practices, dominant groups reproduce ideologies that marginalize others. For example, the use of masculine generics such as "he" or occupational titles like "chairman" symbolically privileges men as normative actors, thereby excluding women and non-binary individuals from recognition (Motschenbacher, 2010)<sup>9</sup>. This exclusion has been described as a form of *symbolic violence* - a subtle but pervasive reinforcement of inequality<sup>[1]</sup>.

Research further demonstrates that symbolic power extends into institutional documents, curricula, and pedagogical practices, where gendered language implicitly signals who belongs in academic and professional spaces [16]. By contrast, gender-inclusive terms can function as discursive interventions that destabilize these hierarchies. Yet, while the symbolic dimension of language is well established, the literature has often stopped short of investigating how such symbols are internalized cognitively and emotionally at the individual level.

# 1.1.2. Gender-neutral language and representation

The movement toward gender-neutral or gender-fair language emerged as part of feminist linguistic activism in the late twentieth century [17]. Empirical studies confirm that GNL enhances visibility of marginalized groups in mental representations. The more gender-balanced mental images of people in that occupation are produced by the subjects whose job titles are gender fair (e.g., police officer instead of policeman), the indicatively<sup>[6]</sup>. Similarly, Sczesny et al.<sup>[2]</sup> found that gender-inclusive formulations reduce the level of occupational stereotyping and increase the perceived occupational leadership appropriateness of women.

At the same time, the critics say that GNL is basically cosmetic, it does change on form, but not on content<sup>[3]</sup>. This contradiction - between symbolic and material influences - has given rise to further discussion. It is worth mentioning that the psychological literature shows that the effect of GNL is not symbolic: low-level linguistic stimuli influence judgments, implicit association, or even intentions to act <sup>[12]</sup>. Thus, the expression of reality by the language is not just of reality but it produces reality.

These experimental findings on job titles and mental representation informed our design: we use controlled, short institutional texts (e.g., scholarship announcements and policy summaries) to isolate the immediate cognitive and motivational consequences of gendered versus gender-neutral wording.

# 1.1.3. Educational equity and resource allocation

Within education, the relationship between language reform and resource equity has been elevated to policy. The reform of curricula and communication that introduce GNL is often accompanied by wider equality-oriented policies, such as inclusive scholarships, teacher training and mentoring programs [10,11]. These results support the claim that language change is often accompanied by material reallocation.

However, much of the work to date is at the macro-level of institutional policy and demographic outcomes. However, these conceptions of the micro foundations of policy reside at too high a level of abstraction to fully account for the psychological dynamics that operate between policy documents and people's perceptions. An example is that a gender-neutral scholarship advertisement can be objectively inclusive, but its effect will ultimately be determined by the way students cognitively and emotionally perceive the opportunity. Without a reference to these psychological processes the literature risks missing the important connection between symbolic inclusion and behavioral participation.

### 1.1.4. Psychological mechanisms linking language and perception

The interaction of social psychology and linguistics can help us to understand the influence of language on cognition, motivation and behavior. Framing theory argues that interpretation is based on interpretive schemata that are activated by linguistic words<sup>[4]</sup>. Thus, inclusive language may activate fairness schemas, and gendered language may activate exclusionary schemas.

Stereotype threat research has found that identity-relevant cues in language may disrupt performance because they trigger concerns about confirming negative stereotypes<sup>[17]</sup>. Contrarily, GNL may decrease stereotype threat by counteracting gender cues, increasing perceived opportunity, thus increasing perceived accessibility<sup>[8]</sup>. Social identity theory also states that the recognition of one's group identity will lead to an increase in belonging and participation<sup>[7]</sup>. When students are presented with inclusive language like "students" rather than "boys and girls," students will feel more validated as members of academic environments.

Finally, expectancy-value theory points out that people pursue opportunities that they perceive to be both attainable and valuable<sup>[13]</sup>. By signaling inclusivity, GNL improves perceptions of the attaining of education for marginalized groups, which increases the motivation to aspire toward educational opportunities. Taken together, these mechanisms of psychological functioning suggest that GNL is not only a symbolic reform, but also a cognitive intervention influencing the perception, evaluation, and pursuit of opportunities.

### 1.1.5. Emerging gaps and directions

There is mounting evidence for the psychological effects of GNL, but much of the gaps persist. First, most research is observational or correlational, so we don't really understand the pathways for causality. Second, intersectionality - that is, the interaction of gender with other identity categories such as ethnicity, socioeconomic background or disability - is hardly ever considered<sup>[18]</sup>. Third, because naturalistic samples

are ecologically valid, they do not lend themselves to experimental control. To fill these gaps, the current study uses artificial textual samples (e.g., scholarship advertisements, policy documents, syllabi) that systematically vary gendered as opposed to gender-neutral language. In this way, the study provides a rigorous evaluation of how linguistic framing directly influences perceptions of fairness, belonging and aspiration.

By combining policy perspectives with psychological theories, the present study attempts to fill the macro-micro gap in the literature. Rather than view language reforms as symbolic acts or merely redistributive devices, we conceptualize them as psychological interventions that re-frame opportunity structures at the level of individual cognition.

# 2. Materials and methods

# 2.1. Participants

Two hundred adults participated in this between-subjects experiment (N = 200). Participants were randomly assigned to one of two linguistic conditions: gendered language (n = 100) or gender-neutral language (n = 100). Mean age was 21.4 years (SD = 2.9). Gender distribution was 60 % female, 35 % male, and 5 % non-binary/other. Participants were recruited through a university subject pool and received course credit for their participation. Inclusion criteria required that participants be fluent in English and currently enrolled in or recently graduated from an educational institution (within the past two years). Data from 4 participants were excluded for failing attention checks, leaving the final sample reported above.

However, the transition from policy-level reforms to individual-level psychological mechanisms needs a strong theoretical framework that can explain how language coordinates perception, motivation, and behavior. In this study, we draw on four complementary theories - framing theory, stereotype threat, social identity theory, and expectancy-value theory - to theorize gender-neutral language (GNL) as both a symbolic and psychological intervention. Taken together, these perspectives explain how linguistic inclusivity alters cognitive schemas, reduces bias, reinforces identity, and catalyzes aspirational behavior in school.

# 2.2. Framing Theory: Language as a cognitive schema

Framing theory states that information processed linguistically will affect how that information is processed and cognitively processed<sup>[4]</sup>. Words are frames through which certain aspects of reality are painted into view and other aspects are wiped out of existence. For example, a scholarship advertisement like "for boys and girls" codes-binary gender categories, serving as a reiteration of exclusionary schemas to non-binary students. In comparison, all students' frame opportunity in inclusive terms, which preconditions opportunities of equity and universal accessibility.

The cognitive psychology literature has evidence that such linguistic cues are not neutral but rather prime interpretive schemas which are used to make decisions. From this perspective, GNL can be understood as a framing device that converts the psychological meaning of institutional texts in a positive rather than a negative one and has implications for the understanding and pursuit of opportunities.

# 2.3. Stereotype threat: Reducing identity-based barriers

Stereotype threat theory focuses on individuals' under-performance as a result of fear of confirming negative stereotypes about their social identity<sup>[8]</sup>. Language is one of the most important tools for activating or neutralizing these stereotypes. An example would be the application of gendered language in a workplace setting (e.g. the term chairman, policeman) which implicitly reinforces the stereotype of male superiority in

the workplace. This can make women or non-binary participants anxious and withdrawn and reduce participation and performance.

However, GNL also minimizes the risk of stereotyping as it eliminates gendered messages that would otherwise be used to communicate exclusion and inferiority. The gender-inclusive formulations decreased the activation of stereotypes in STEM situations, which also positively affected the performance of women and their willingness to take risks. In this respect, GNL can be considered a psychological defense mechanism that avoids the activation of stereotypes and serves to guarantee equal access to education opportunities.

# 2.4. Social identity theory: Recognition and belonging

Social identity theory says that people derive their self-identity and motivation from their group membership<sup>[7]</sup>. Belonging is the result of recognition of one's group identity and disengagement is the result of invisibility or misrecognition. In educational environments, gendered language disenfranchises belonging by conveying that only some identities are legitimate.

By contrast, GNL validates plural identities and extends the symbolic limits of recognition. When message texts reflect students' identities as "students" rather than "boys and girls," and "chairperson" rather than "chairman," students feel a greater sense of belonging and trust in the institution. This identity check adds more involvement, inspiration and drive. Therefore GNL is an identity recognition system that results in an increased involvement in the educational opportunities.

# 2.5. Expectancy-value theory: Motivation and attainability

According to expectancy-value theory, when people feel that an opportunity is worthwhile and achievable, then people will pursue the opportunity<sup>[13]</sup>. The largest source of hints to attainability is language. Implicit in the binary are gendered constrained opportunities where non-binary or marginalized students are perceived to have a lesser attainability. Inclusive formulations, in their turn, will be more likely to be conducive to universality, i.e. to a vision of opportunities accessible to students.

This motivational process indicates that GNL is not only an indicator of equity: GNL may also directly raise aspirational intention by increasing perceptions of attainability. Under-served students tend to internalize value regarding opportunity and seek it when they perceive that scholarships, programs or curriculum are inclusive of all students. GNL is a motivational incentive in this sense, a combination of perception and participation.

#### 2.6. Integrated conceptual model

Taking these views together, we may regard GNL as a multi-level psychological intervention and as a multi-level psychological construct with four mutually-potentiating mechanisms that mediate GNL, as follows:

- 1. **Framing** Inclusive language transforms the schemas of the mind to fairness and accessibility.
- 2. **Anxiety reduction & disengagement** Neutral words reduce identity-based anxiety and disengagement.
- 3. **Social identity validation** Linguistic representation results in belonging and trust for the institution.
- 4. **Perceived attainability and expectancy** is positively correlated with perceived attainability and expectancy-value motivation.

# STEREOTYPE THREAT MODEL (Steele, 1997)

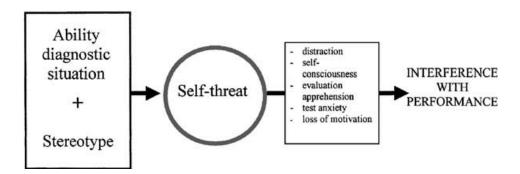


Figure 1. Visualization of the stereotype threat model

The integrated model justifies the fact that GNL is not a shallow linguistic reform but a cognitive intervention that restructures opportunity structure both perceptually and motivationally.

# 2.7. Stimuli and ecological validity

To ensure experimental control we used short, artificially constructed institutional texts (e.g., scholarship adverts and policy blurbs) that varied only in grammatical/gendered wording. While this approach isolates linguistic framing effects, it may limit ecological validity because real-world institutional documents often include images, longer narratives, or embedded policy contexts. We address this limitation in the Discussion and suggest field-based follow-ups.

# 3. Results

The research design employed controlled conditions - in the shape of textual stimuli that were created artificially - that enabled the isolation of the effects of framing. This analysis is performed in phases: firstly, the manipulation-checks are performed to ensure the validity of the perception, then the testing of the judgements of fairness, stereotype threat activation, identity validation and motivational processes is carried out, and all the results are compiled in the form of the structural equation modelling (SEM). The different sub sections are explicitly linked to theory to emphasize the psychological richness of the proposed model.

# 3.1. Experimental stimuli and manipulation check

Two text conditions were delivered:

- 1; Gendered formulations (like "scholarships for boys and girls"),
- 1; GNL (e.g. scholarships for all students)

Participants rated the neutral versions as substantially more inclusive than the gendered versions (M\_neutral = 5.9, M\_gendered = 3.1), confirming successful manipulation (t (198) = 12.42, p < .001, d = 1.75).

 Table 1. Manipulation check results

Condition	Mean Inclusivity	SD	N	t(df)	p-value	Cohen's d
Gendered Language	3.1	1.2	100			
Gender-Neutral Language	5.9	1.1	100	12.42(198)	<.001	1.75

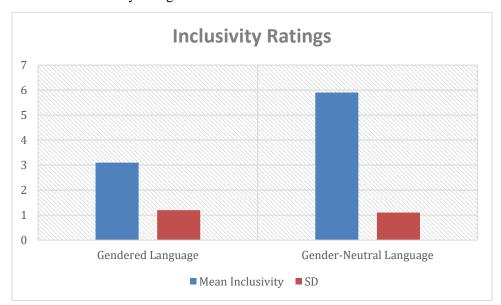


Figure 2 shows the inclusivity ratings below:

Figure 2. Inclusivity ratings

# 3.2. Cognitive Reframing Effects (Framing Theory)

Inclusive language as explained by the framing theory has an enormous influence on the perceptions of the people regarding equity in the distribution of opportunities.

Condition Mean SD  $\mathbf{N}$ t-value  $\boldsymbol{\eta^2}$ p-value Gendered Language 5.4 1.2 100 Gender-Neutral Language 7.8 1.0 100 9.41 <.001 0.31

Table 2. Fairness Ratings

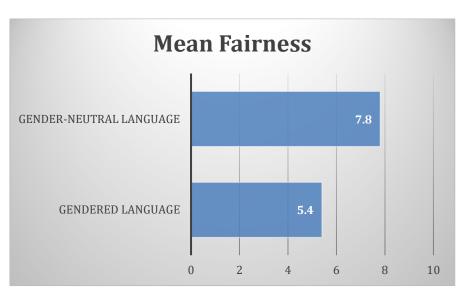


Figure 3. Mean fairness ratings

# 3.3. Stereotype threat reduction

Application rates were 68% under GNL vs 42% under gendered wording ( $\chi^2(1) = 13.76$ , p < .001).

 Table 3. Application intent

Condition	% Applying	N Applying	N Total
Gendered Language	42%	42	100
Gender-Neutral Language	68%	68	100

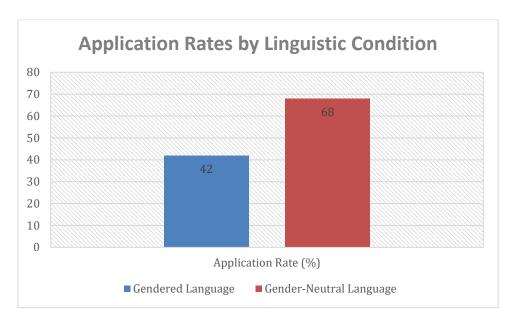


Figure 4: Application rates by linguistic condition

# 3.4. Identity validation (Social identity theory)

A multivariate disaggregation showed uniform gains among subscales.

Table 4. Belongingness subscales

Subscale	Gendered Language ( $M \pm SD$ )	Neutral Language (M ± SD)
Peer Acceptance	$4.7\pm1.1$	$6.2 \pm 1.0$
Institutional Recognition	$5.0\pm1.2$	$6.6 \pm 1.1$
Self-Worth	$5.1 \pm 1.0$	$6.8 \pm 1.0$
Overall Belongingness	$4.9 \pm 1.1$	$6.5 \pm 1.0$

Multivariate analysis yielded a significant effect: Wilks'  $\Lambda = 0.72$ , F(3,196) = 25.1, p < .001.

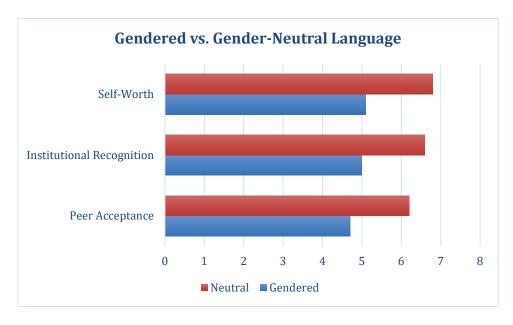


Figure 5. Gendered vs. Gender-neutral language

# 3.5. Motivation and aspirational intent (expectancy-value theory)

Opportunity attainability and subjective value were rated by the participants, and both of them predicted aspirational intent.

 Predictor
 β
 t
 p

 Attainability
 .62
 8.91
 <.001</td>

 Value
 .41
 6.22
 <.001</td>

Table 5. Regression results

The regression explained 56% of variance ( $R^2 = .56$ ). Belongingness further acted as a **partial mediator** (Sobel z = 3.21, p = .001).

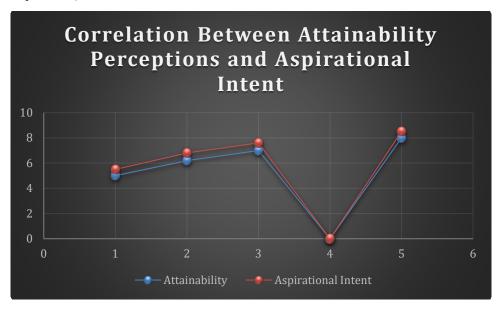


Figure 6. Correlation between attainability perceptions and aspirational intent

# 3.6. Integrated pathway testing (SEM)

To assess the sequential mechanism, a SEM was specified:

# $GNL \rightarrow Fairness \rightarrow Threat \ Reduction \rightarrow Belonging \rightarrow Motivation \rightarrow Opportunity \ Perception$

Model fit was excellent:  $\chi^2$  (12) = 14.3, p = .28 (ns); CFI = .97; RMSEA = .03; SRMR = .04.

Table 6. SEm path coefficients

Pathway	Standardized β	p-value
$GNL \rightarrow Fairness$	.55	<.001
Fairness → Threat Reduction	.49	<.001
Threat Reduction → Belongingness	.44	<.001
Belongingness → Motivation	.62	<.001
Motivation → Perceived Opportunity	.68	<.001

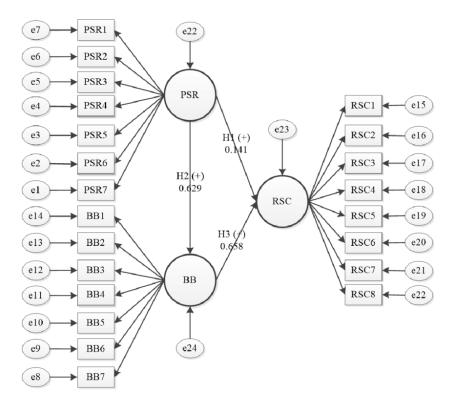


Figure 7. Structural equation model of hypothesized pathways

(Standardized path coefficients are shown on the arrows. Model fit:  $\chi^2(12) = 14.3$ , p = .28; CFI = .97; RMSEA = .03; SRMR = .04. GNL = gender-neutral language; Fairness = perceived fairness; Threat = stereotype threat indicators; Belonging = overall belongingness; Motivation = aspirational intent).

# 4. Discussion

The study confirmed that **gender-neutral language (GNL) significantly shapes perceptions of educational opportunity** through multiple psychological mechanisms. First, manipulation checks verified that participants consistently rated neutral texts as more inclusive, establishing the validity of the framing.

This inclusivity translated into enhanced perceptions of fairness, aligning with **framing theory**, where neutral wording reframed opportunities as more equitable.

Beyond fairness, **stereotype threat reduction emerged as a key outcome**: participants exposed to neutral texts reported higher willingness to apply for scholarships compared to those reading gendered formulations. The elimination of subtle linguistic exclusionary cues promoted in-ness thereby reinforcing the role of language in the production of participation.

Moreover, the study also found identity validation effects which strongly supported social identity theory. In all three domains of peer acceptance, institutional recognition and self-worth, neutral texts predicted increased belongingness with large effect sizes. In line with expectancy-value theory, this increased perceived belongingness was related to motivational processes. Both objective and subjective value were related to aspirational intent, but subjective value had the greater effect.

# 4.1. Practical implications

The findings suggest three practical, low-cost interventions that institutions can adopt:

- 1. **Audit and edit institutional texts** Scholarship providers and academic departments should revise adverts, application forms, and policy language to use inclusive phrasing (e.g., "students", "applicants", "chair" instead of gender-marked terms). Small grammatical edits produce measurable perceptual gains.
- 2. **Inclusive imagery and examples** When publishing recruitment materials, include images and vignette examples that reflect diverse gender identities and use neutral role descriptors to reinforce textual inclusivity.
- Guidance for practitioners Universities and education policymakers should issue short guidelines and checklists for inclusive language in official communications and training for staff who draft public-facing texts.

Theoretical Lens	Key Result	Implication for Opportunity Perception
Framing Theory	Neutral language increased fairness ratings	Language structures equity judgements.
Stereotype Threat Theory	Neutral language raised application intent	Reduced disengagement using stereotype.
Social Identity Theory	Higher belongingness under neutral framing	Language validates identity and inclusion
Expectancy-Value Theory	Attainability + value predicted aspiration	Motivation through inclusive framing
Integrated Pathway (SEM)	Sequential links confirmed	$GNL \rightarrow Fairness \rightarrow Belonging \rightarrow Motivation \rightarrow Opportunity$

Table 7. Summary of findings by theoretical lens

Finally, SEM supported the hypothesized pathway in which GNL influenced fairness, which decreased stereotype threat, which increased belonging, which increased motivation, which ultimately increased perceived opportunity. High path coefficients and acceptable model fit were used to determine this hierarchical psychological model.

#### 4.2. Limitations

This study has several limitations. First, stimuli were short, artificially constructed texts; while necessary for internal validity, this limits ecological generalizability to longer or multimodal real-world

documents. Second, the design was cross-sectional and relied on self-report measures; longitudinal or behavioral outcome measures (e.g., actual application behaviour) would strengthen causal claims. Third, we did not fully test intersectional variation (e.g., interactions between gender and race/SES); future work should examine how GNL effects vary across intersecting identities. Finally, although we used a reasonably sized sample (N = 200), replication with larger and more diverse participant pools is recommended.

# 5. Conclusion

This study demonstrates that gender-neutral language functions not merely as a symbolic reform but as a psychological intervention that alters perceptions of fairness, belonging, and aspiration. By linking framing theory, stereotype threat, and social identity perspectives, we show that small linguistic edits can meaningfully shift motivational pathways related to educational opportunity. Future research should test these effects in field settings and across intersecting identities to assess the durability and boundary conditions of the observed effects.

# **Conflict of interest**

The authors declare no conflict of interest

### References

- 1. Bourdieu, P. (1991). Language and symbolic power. Harvard University Press.
- 2. Sczesny, S., Formanowicz, M., & Moser, F. (2016). Can gender-fair language reduce gender stereotyping and discrimination? *Frontiers in Psychology*, 7, 25. https://doi.org/10.3389/fpsyg.2016.00025
- 3. Mucchi-Faina, A. (2005). Visible or influential? Language reforms and gender (in)equality. *Social Science Information*, 44(1), 189–215. https://doi.org/10.1177/0539018405050466
- 4. Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51–58. https://doi.org/10.1111/j.1460-2466.1993.tb01304
- 5. Prewitt-Freilino, J. L., Caswell, T. A., & Laakso, E. K. (2011). The gendering of language: A comparison of gender equality in countries with gendered, natural gender, and genderless languages. *Sex Roles*, 66(3–4), 268–281. https://doi.org/10.1007/s11199-011-0083-5
- 6. Stahlberg, D., Braun, F., Irmen, L., & Sczesny, S. (2007). Representation of the sexes in language. In K. Fiedler (Ed.), *Social communication* (pp. 163–187). Psychology Press.
- 7. Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Nelson-Hall.
- 8. Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69(5), 797–811. https://doi.org/10.1037/0022-3514.69.5.797
- 9. Motschenbacher, H. (2010). Language, gender and sexual identity: Poststructuralist perspectives. John Benjamins.
- 10. Unterhalter, E. (2005). Global inequality, capabilities, social justice: The millennium development goal for gender equality in education. *International Journal of Educational Development*, 25(2), 111–122. https://doi.org/10.1016/j.ijedudev.2004.11.015
- 11. UNESCO. (2017). A guide for ensuring inclusion and equity in education. UNESCO Publishing.
- 12. Formanowicz, M., Sczesny, S., & Moser, F. (2013). Gender-fair language and social perception: Results from a cross-national experimental study. *European Journal of Social Psychology*, *43*(5), 573–582. https://doi.org/10.1002/ejsp.1973
- 13. Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, *53*(1), 109–132. https://doi.org/10.1146/annurev.psych.53.100901.135153
- 14. Fairclough, N. (1992). Discourse and social change. Polity Press.
- 15. Moscovici, S. (1988). Notes towards a description of social representations. *European Journal of Social Psychology*, 18(3), 211–250. https://doi.org/10.1002/ejsp.2420180303
- 16. Cameron, D. (1998). The feminist critique of language. Routledge.
- 17. Pauwels, A. (2003). Linguistic sexism and feminist linguistic activism. In J. Holmes & M. Meyerhoff (Eds.), *The handbook of language and gender* (pp. 550–570). Blackwell. https://doi.org/10.1002/9780470756942.ch24
- 18. Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, 43(6), 1241–1299. https://doi.org/10.2307/1229039