UGC Approved Indexed Peer Reviewed Journal

ISSN: 2320-6586 (Online)

IILM UNIVERSITY

Technologies for Sustainable Development Goals 2025 (TECH4SDG-2025)

School of Computer Science & Engineering

IILM University Greater Noida

Presents

1st National Conference

on

Technologies for Sustainable Development Goals 2025 (TECH4SDG-2025)

3rd March 2025

Technically Co-Sponsored by IEEE UP SECTION (INDIA)

Venue:

IILM University, Greater Noida

Plot No.18,16, Knowledge Park II, Greater Noida, Uttar Pradesh 201306

Procedings Published at

International Journal of Research in Modern Engineering and Emerging Technology

Vol. 13, Sp. Issue 1, April 2025

Doi: https://doi.org/10.63345/ijrmeet.org.v13.si1.1301

Editor-in-Chief

Dr. Mylavarapu Seetharama Prasad

www.ijrmeet.org

ISSN: (Online) 2320-6586

INTERNATIONAL JOURNAL OF RESEARCH IN MODERN ENGINEERING & EMERGING TECHNOLOGY

(IJRMEET)

I.F. (wef. 2023: 6.004)

Vol. 13, Sp. Issue 1, April: 2025

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Published By
Resagate Global
KDP Grand Savanna, R. N. Ext.,
Ghaziabad- 201017, Uttar Pradesh, India

Powered By
Editor-in-Chief
IJRMEET
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INTERNATIONAL JOURNAL OF RESEARCH IN MODERN ENGINEERING & EMERGING TECHNOLOGY (IJRMEET)

Dear Author / Researcher,

On behalf of the *International Journal of Research in Modern Engineering & Emerging Technology (IJRMEET)*, I extend my heartfelt gratitude to all the authors and research scholars for choosing our platform to publish their valuable research contributions.

IJRMEET, a Refereed, Peer Reviewed, Indexed, and Monthly Journal in Electronic format, has been consistently dedicated since April 2013 to advancing scholarly work in the domains of Modern Engineering and Emerging Technologies. Your innovative and quality research is at the core of our mission to promote academic excellence and practical solutions in the ever-evolving field of engineering and technology.

We believe that publication should be based purely on the merit, originality, and relevance of the research, not on financial considerations. We ensure that every manuscript undergoes a thorough review process to maintain the integrity, reliability, and scholarly value of each published work.

Our journal aims not only to disseminate high-quality research globally but also to highlight critical engineering problems and their practical resolutions. I encourage researchers, academicians, faculty members, and industry professionals to continue contributing to IJRMEET and to inspire their peers and students to join us in this academic pursuit.

We sincerely thank our respected Editors, Reviewers, Technical Advisors, Authors, Web Developers, Subscribers, Supporters, and the extended academic community whose efforts and encouragement make each issue of IJRMEET a successful endeavor.

With warm regards,

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डॉ. मोहम्मद रिहान / Dr. Mohammad Rihan
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MESSAGE

I am happy to know about Tech4SDG-2025, a distinguished national conference that aims to explore and highlight the transformative power of technology in achieving the United Nations Sustainable Development Goals (SDGs). This event serves as a critical platform for fostering collaboration among experts, innovators, and leaders who are dedicated to creating solutions that drive sustainable change.

As we face global challenges ranging from environmental sustainability to social equity, it is clear that technological advancements will play a pivotal role in shaping our collective future. Tech4SDG-2025 presents a unique opportunity to examine how cutting-edge technologies can contribute to solving the most pressing issues of our time, from climate change to poverty alleviation.

I look forward to the engaging discussions and innovative ideas that will emerge from this conference. I believe that by working together, we can harness the potential of technology to drive meaningful progress towards a sustainable and equitable world.

I extend my best wishes to all the participants and organizers of Tech4SDG-2025.

27.02.25

(Dr. Mohammad Rihan)

Dated: 27th February, 2025
Place: Gurugram

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International Journal of Research in Modern Engineering and Emerging Technology (IJRMEET)

Vol. 13, Sp. Issue: 01, April: 2025
(IJRMEET) ISSN (o): 2320-6586

Gender Identity and Expression in College Students

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Abstract : This study explores the nature and interplay of gender identity and gender expression among college students in a large urban university setting. Gender identity refers to an individual's deeply held sense of being male, female, a blend of both, neither, or another gender altogether, while gender expression encompasses the external presentation of one's gender through behavior, clothing, hairstyles, voice, and other forms of presentation. Drawing on a crosssectional survey of 600 undergraduates aged 18–24, this research examines how students selfidentify along the gender spectrum, the degree to which they feel comfortable expressing their gender, and the relationships between identity, expression, mental health, and campus climate perceptions. Quantitative analyses reveal a strong correlation between congruence of identity and expression and higher subjective wellbeing, as well as notable differences in social support and perceived acceptance across identity groups. Students who identify outside the cisgender binary report greater challenges in expression and higher levels of stress, though supportive campus resources mitigate some adverse outcomes. Findings underscore the importance of inclusive policies, targeted support services, and educational initiatives to foster environments where all students can affirm their gender identity and expression without fear of discrimination or stigma.

Keywords: gender identity; gender expression; college students; survey; wellbeing; campus climate

Introduction

Gender identity and expression are central aspects of personal and social development, particularly during the college years, when young adults solidify their sense of self and negotiate social expectations. The transition to college often entails newfound autonomy, exposure to diverse perspectives, and opportunities for selfexploration. For many, this period is formative in articulating and asserting their gender identity—how they internally identify—and their gender expression—how they externally convey that identity. Research has historically centered on cisgender populations, leaving gaps in understanding the experiences of transgender, nonbinary, and gendernonconforming students. This study aims to address these gaps by surveying a diverse sample of college students, examining patterns of identity, modes of expression, and associated psychosocial outcomes.

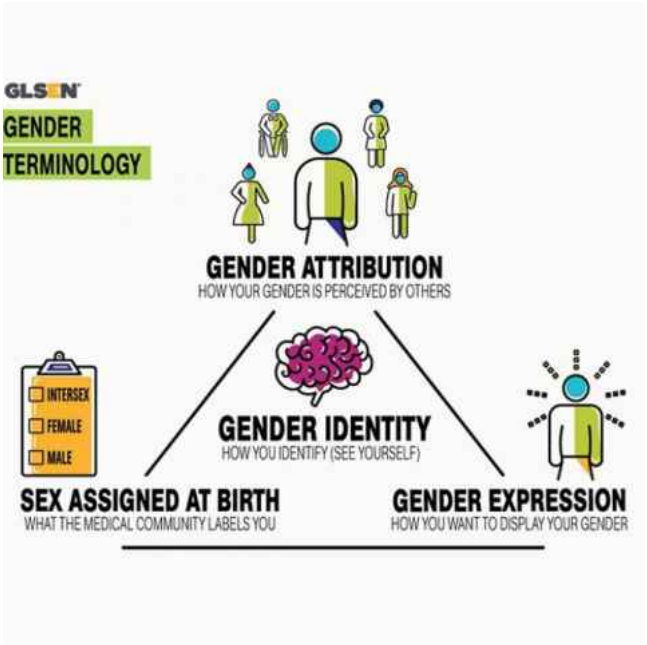


Fig.1 Gender Identity,Source([1])

Previous scholarship has highlighted the psychological benefits of identity congruence (e.g., when one's expression aligns with one's internal identity), including reduced anxiety and depression (Evans & Frank, 2018). Conversely, misalignment can exacerbate feelings of dysphoria and social isolation (Garcia et al., 2019). College campuses, as microcosms of society, both reflect and shape broader attitudes toward gender diversity. Supportive campus climates—manifested through inclusive policies, visible resource centers, and affirming peer networks—are associated with better mental health among genderdiverse students (Hernandez & Lee, 2020). Yet, stigma, discrimination, and lack of awareness persist, undermining students' ability to freely express their gender.

By systematically surveying gender identity categories, typical and nontraditional expression practices, and psychological and social outcomes, this research contributes to a more nuanced understanding of gender experiences during late adolescence and emerging adulthood. The following sections review relevant literature, outline the surveybased methodology, present key findings, and discuss implications for campus policy, counseling services, and further research.

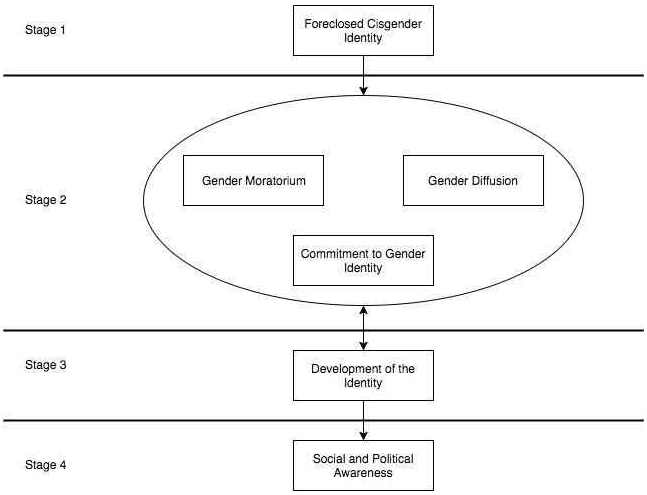


Fig.2 Gender Identity and Expression in College Students,Source([2])

Literature Review

Conceptualizing Gender Identity and Expression. The distinction between gender identity and gender expression is grounded in sociological and psychological theory. Gender identity is an internal, deeply held sense of being, which may or may not correspond with sex assigned at birth (American Psychological Association, 2015). Gender expression encompasses external manifestations—clothing, grooming, mannerisms—that communicate gender to others. Butler's performativity theory positions gender as enacted through repeated behaviors and social scripts, emphasizing its fluid and constructed nature (Butler, 1990).

Identity Development in Emerging Adults. Erikson's stages of psychosocial development locate identity exploration in adolescence and young adulthood, including gender as a key dimension (Erikson, 1968). Arnett's concept of emerging adulthood (ages 18–25) highlights selffocus and instability, where individuals experiment with roles, beliefs, and relationships before settling into longterm commitments (Arnett, 2000). Within this framework, college acts as a crucible for gender identity work.

Mental Health Correlates. Numerous studies link gender incongruence and nonconformity to heightened risk for anxiety, depression, and suicidal ideation, particularly when individuals face social rejection or institutional barriers (Reisner et al., 2016; Turban & Keuroghlian, 2018). In contrast, affirmation—social and institutional recognition of one's gender—correlates with improved wellbeing (Olson et al., 2016). Peer support, affirming campus policies, and access to counseling are protective factors (Kattari et al., 2020).

Campus Climate and Policy. Institutional commitment to inclusivity—nondiscrimination policies, genderneutral facilities, and visible support groups—fosters a sense of belonging among genderdiverse students (Rankin et al., 2010). Conversely, hostile or indifferent environments can exacerbate stress, hinder academic performance, and contribute to attrition. Surveys of campus climate repeatedly show that transgender and nonbinary students report lower feelings of safety and belonging compared to cisgender peers (Taylor et al., 2015).

Research Gaps. While prior work establishes links among identity, expression, mental health, and campus factors, few largescale surveys examine these variables simultaneously within a single student body. There is a need for comprehensive data capturing the full gender spectrum, expression modalities, and their effects on wellbeing and campus engagement.

Methodology

A quantitative, crosssectional survey was employed to investigate gender identity, expression practices, and associated outcomes among undergraduate students. The objectives were to (1) categorize selfreported gender identities, (2) assess frequencies and comfort levels of particular expression behaviors, (3) measure psychological wellbeing, and (4) gauge perceptions of campus climate.

Participants. A stratified random sample of 750 undergraduates from a large public university was invited via email; 600 students (80% response rate) completed the survey (M age = 20.4 years, SD = 1.3; 58% femaleassigned at birth, 42% maleassigned at birth). Racial/ethnic composition mirrored the campus population: 45% White, 25% Asian, 20% Hispanic/Latinx, 8% Black, 2% Other.

Instrument. The online questionnaire comprised four sections:

1. **Demographics and Background**: Age, assigned sex at birth, year of study, major, and living situation.
2. **Gender Identity**: An openended selfidentification item with options including male, female, transgender male, transgender female, nonbinary, genderqueer, and "other (please specify)."
3. **Gender Expression**: A checklist of 12 behaviors (e.g., clothing choices, makeup use, hairstyle changes, pronoun usage) rated for frequency (Never to Always) and comfort (Very Uncomfortable to Very Comfortable).
4. **Psychological and Campus Climate Measures**:
5. The WHO5 WellBeing Index (Topp et al., 2015).
6. The Perceived Campus Climate Scale (PCCS; Rankin & Reason, 2005), assessing perceptions of institutional support, safety, and inclusion.
7. A social support subscale adapted from the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988).

Procedure. Data collection occurred over a fourweek period in Spring semester. Participants provided informed consent, and an IRBapproved information sheet outlined

confidentiality and voluntary participation. Data were anonymized and stored on a secure server.

Data Analysis. Statistical analyses were conducted using SPSS v25. Descriptive statistics summarized identity distributions and expression frequencies. Pearson correlations examined relationships among identityexpression congruence, wellbeing scores, and campus climate perceptions. ANOVA tested group differences (cisgender vs. transgender vs. nonbinary) on key measures, followed by posthoc Tukey tests. Significance was set at $p < .05$.

Research Conducted as a Survey

The core of this study was the survey, designed to elicit rich, quantitative data on participants' gender experiences. Survey construction involved extensive pilot testing with 20 students to ensure clarity and face validity. Adjustments included rewording ambiguous items and adding "I don't know" response options where appropriate.

Sampling and Recruitment. To capture diverse experiences, stratification by academic year and college (e.g., arts and sciences, engineering, business) ensured proportional representation. Recruitment messages highlighted the study's focus on gender experiences and the importance of participation for informing campus policies.

Ethical Considerations. Given the sensitivity of gender topics, the survey emphasized anonymity. No identifying information was collected. Participants could skip any question. Mental health resources were provided at the end of the survey for those who experienced distress.

Instrument Validation. The WHO5, PCCS, and social support subscales demonstrated strong internal consistency in this sample (Cronbach's $\alpha = .87$, .82, and .90 respectively). Gender identity categorizations aligned with contemporary best practices for inclusivity (GLAAD, 2020).

Limitations of the Survey Approach. While surveys yield breadth, they limit depth of individual experiences. Selfreport bias and social desirability may affect responses. Crosssectional design precludes causal inference. Future qualitative interviews could complement these findings.

Results

Distribution of Gender Identities. Of the 600 respondents, 72% identified as cisgender (female: 38%, male: 34%), 12% as transgender (transgender female: 5%; transgender male: 4%; other trans: 3%), and 16% as nonbinary or gendernonconforming. The "other" category (3%) included identities such as genderfluid and agender.

Expression Frequencies and Comfort Levels.

- **Clothing Choices**: 82% of cisgender students "often" or "always" wore attire aligning with societal expectations for their gender identity, compared to 45% of transgender and 38% of nonbinary students. Comfort ratings mirrored these patterns: 90% of cisgender students felt "comfortable" or "very comfortable," whereas only 55% of transgender and 40% of nonbinary students reported similar comfort ($F[2,597] = 68.4$, $p < .001$).
- **Pronoun Usage**: 95% of cisgender students consistently used pronouns matching their identity, versus 70% of transgender and 60% of nonbinary students ($F[2,597] = 42.7$, $p < .001$). Notably, 30% of nonbinary respondents sometimes refrained from correcting others due to fear of negative reactions.
- **Other Modalities**: Makeup use, hairstyle choices, and accessory selections showed similar identitybased disparities in both frequency and comfort (all $p < .01$).

WellBeing and Campus Climate Correlations.

- **IdentityExpression Congruence** (calculated as the correlation between participants' identity clarity and expression comfort scores) was strongly positively correlated with WHO5 wellbeing scores ($r = .62$, $p < .001$).
- **Perceived Campus Support** (PCCS) correlated positively with wellbeing ($r = .48$, $p < .001$) and expression comfort ($r = .52$, $p < .001$). Regression analyses indicated that campus support accounted for an additional 12% of variance in wellbeing beyond identityexpression congruence.

Group Differences in WellBeing.
ANOVA results revealed significant differences in wellbeing across identity groups ($F[2,597] = 35.2$, $p < .001$). Posthoc tests showed cisgender students reported the highest wellbeing ($M = 68.4$, $SD = 12.3$), followed by transgender students ($M = 60.1$, $SD = 14.5$), with nonbinary students reporting the lowest ($M = 55.8$, $SD = 15.0$). Similar patterns emerged for perceived social support.

Qualitative Insights (OpenEnded Responses). While not the focus of this quantitative study, thematic analysis of optional comments highlighted the importance of visible LGBTQ+ student organizations, genderneutral restrooms, and faculty pronoun introductions in fostering inclusivity. Conversely, negative experiences often stemmed from misgendering, exclusionary language in curricula, and lack of administrative support.

Conclusion

This surveybased study illuminates the complex relationships among gender identity, gender expression, mental health, and campus climate in a college setting. Key findings indicate that:

- **IdentityExpression Alignment** is crucial for student wellbeing. High congruence predicts greater

psychological health, underscoring the need for environments that facilitate authentic expression.

- **GenderDiverse Students Face Unique Challenges**, with transgender and nonbinary students reporting lower comfort in expression, reduced wellbeing, and perceptions of weaker campus support.
- **Institutional Support Matters**: Positive campus climates, marked by inclusive policies, visible resources, and supportive peers and faculty, are linked to better outcomes across identity groups.

Implications for Practice. Universities should continue to expand and publicize genderaffirming services, including counseling tailored to genderdiverse students, robust ally training for faculty and staff, and policies such as genderneutral housing and restrooms. Incorporating pronoun awareness into orientation programs and classroom norms can also normalize diverse expressions.

Limitations and Future Directions. The crosssectional design limits causal interpretations. Longitudinal research could track identity development and wellbeing over students' college careers. Qualitative interviews would deepen understanding of the lived experiences underlying survey patterns. Expanding samples to multiple institutions and including intersectional analyses by race, socioeconomic status, and disability would further contextualize findings.

Concluding Remarks. As college campuses strive to support student diversity, understanding the nuanced interplay of gender identity and expression is paramount. By promoting environments where all students can fully express their gender, institutions not only enhance individual wellbeing but also enrich the educational community as a whole.

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Published By
Resagate Global, KDP Grand Savanna, R. N. Ext.,
Ghaziabad- 201017, Uttar Pradesh, India

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