

## AIMING FOR EQUITY: CHALLENGES AND PROGRESS IN GENDER PARITY IN HIGHER EDUCATION AND RESEARCH

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### ABSTRACT

*Women for long have faced discrimination by society. This bias is driven by gender-based stereotypes that make women inferior to men. Such unequal and unjust behavior against a gender (often women) that denies them equal status and opportunities as compared to the other one is termed as gender bias or disparity. A common manifestation of gender bias is the denial of access to education for women, resulting in lower literacy rates compared to men in many parts of the world. Even when women receive primary and secondary education, obstacles such as early marriage, poverty, and gender-based violence hinder their enrollment in tertiary education (higher education). Many significant steps have been taken to ensure gender parity in education, and slowly the enrollment of women has increased in universities and colleges. However, disparities persist, particularly in fields like science, technology, engineering, and mathematics (STEM), where women remain underrepresented. The discrepancies in gender parity in higher education and research can have significant implications for future wages and career prospects. Despite progress, gender disparities also exist in research and leadership roles within academia. Achieving true gender parity requires addressing these remaining challenges and promoting greater representation of women in male-dominated areas of research. This entails implementing policies and initiatives to break down systemic barriers, challenging gender stereotypes, providing support and mentorship for women in academia, and fostering an inclusive and equitable environment for all individuals. This paper reviews the status of gender parity in higher education and research, highlighting the efforts required to address the existing barriers and inequalities. The aim is to ensure that every individual has equal access to educational opportunities, regardless of gender.*

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**Keywords:** Women, Gender Parity, Research, Bias, Higher Education.

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### Introduction

For centuries, women have confronted societal inequality. This disparity has stemmed from the stereotypical mindset prevalent in a patriarchal society, which limited a woman's role to that of a homemaker and vested the authority to make significant life decisions in the hands of men. While men had the freedom to live autonomously, pursue education, careers, make marriage choices, and travel, women faced restrictions, particularly concerning education and other important life matters. Although the situation has improved slowly over time, but women still encounter barriers to education, with limited access compared to men, often confined to domestic roles. Even those who attain degrees face unequal career prospects, with certain fields reserved for men.

The term 'Gender bias' may be defined as the discrimination an individual is subjected to, based on gender. Often, one gender is favored over the another resulting in bias and unequal opportunities in various fields related to life and society. Most of the times women are victims of gender bias. Gender bias has become a norm due to centuries old stereotypical thinking of society which perceives that a woman's role is limited to being a homemaker and a good wife and mother. In the past, daughters were often deprived of education because societal norms dictated that they would soon be married off after reaching puberty. Over time, societal attitudes shifted, leading to an increase in the education of daughters. However, despite this progress, the pursuit of education remains a distant aspiration for many girls.

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**Global Progress towards Gender Equality**

According to UNICEF approximations, globally, there are 129 million girls who are not attending school, comprising 32 million in primary school age, 30 million in lower-secondary school age, and 67 million in upper-secondary school age. Obstacles preventing girls from accessing education, such as poverty, early marriage, and gender-based violence, differ across nations and localities. (Girls' Education | UNICEF, n.d.) Poverty is a major reason that prevents girls from completing their education as they are forced to marry early.

According to UNICEF, India has the highest number of child brides globally. Child brides encounter obstacles in pursuing education, with fewer than 2 out of 10 continuing their schooling compared to the majority of unmarried girls who are in school. (United Nations Children's Fund, Ending Child Marriage: A Profile of Progress in India, 2023 Update, UNICEF, New York, 2023., n.d.)

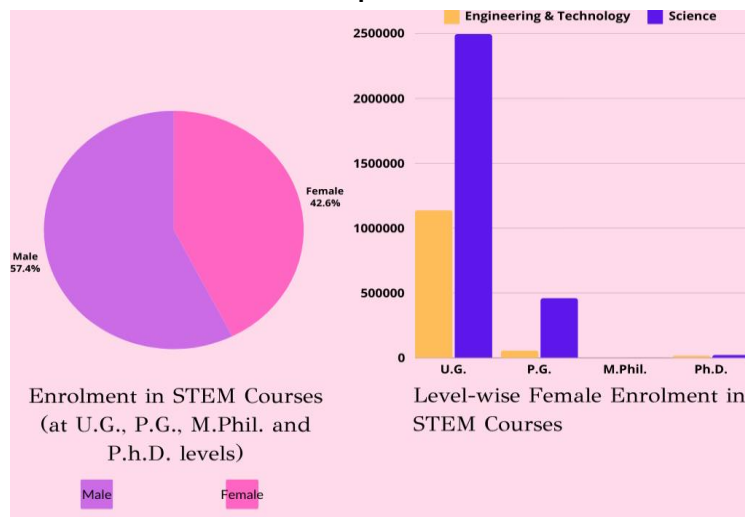
Globally, significant progress has been made in the direction of gender equality in education. These programs, policies, and interventions cover a wide range of topics with the goal of removing obstacles and advancing equitable opportunities for all people, regardless of gender. A noteworthy result of these endeavors is the rise in the number of female students enrolled in colleges and institutions. The gender disparity in access to all levels of education has noticeably shrunk in many areas. The situation in India has undoubtedly seen improvement, with women increasingly gaining opportunities to enroll in higher education.

According to the All India Survey on Higher Education (AISHE) 2021-22 report, there has been a consistent upward trend in female enrollment over the years. The report indicates that female enrollment increased from 2.01 crore in 2020-21 to 2.07 crore in 2021-22 and 1.74 crore in 2017-18, showing a growth of 18.7% over the span of five years. Since 2014-15, female enrollment has risen by approximately 50 lakh. Specifically, in 2014-15, female enrollment stood at 1,57,23,018. (*Women Comprises 48% of Overall Enrollment in Higher Education: AISHE Report | Education - Hindustan Times*, n.d.)

**Challenges and Barriers to Gender Equality**

But raising enrolment rates is not enough to achieve actual gender equity in higher education. It also necessitates tackling problems like stereotyping, discrimination based on gender, and unequal access to particular academic subjects. In academia, women are still underrepresented in leadership roles and in some fields, including science, technology, engineering, and mathematics (STEM). The report of the All India Survey of Higher Education (AISHE) 2021–22 found that the Enrolment in STEM (at U.G., P.G., M.Phil. and Ph.D. levels) is 98,49,488, out of which 56,56,488 are males and 41,93,000 are females. Women are notably underrepresented in the field of Engineering & Technology, which comprises 39.04 lakh enrolled students, with only 29.1% being female and 70.9% male. (Ministry of Education, Government of India. (2021). All India Survey on Higher Education 2021-22, n.d.) <https://aishe.gov.in/aishe/viewDocument.action?documentId=353> )

**Enrollment in STEM Fields Based on AISHE Report 2021-22**



Source: All India Survey on Higher Education (AISHE) Report 2021-22

Women may not choose science or mathematics STEM subjects due to various factors. Gender stereotypes play a significant role, influencing women's intentions and choices in STEM fields. (Faridatul, 2023) Cultural prejudices, gender biases, and microinequities contribute to a lack of sense of belonging in STEM, limiting girls and women from majoring in subjects like computer science. (Adrienne et al., 2023) Research indicates that fewer female students opt for STEM studies, with girls often preferring health and education professions over engineering and computer science, influenced by societal perceptions and self-esteem issues. (Noemí & Alba, 2022)

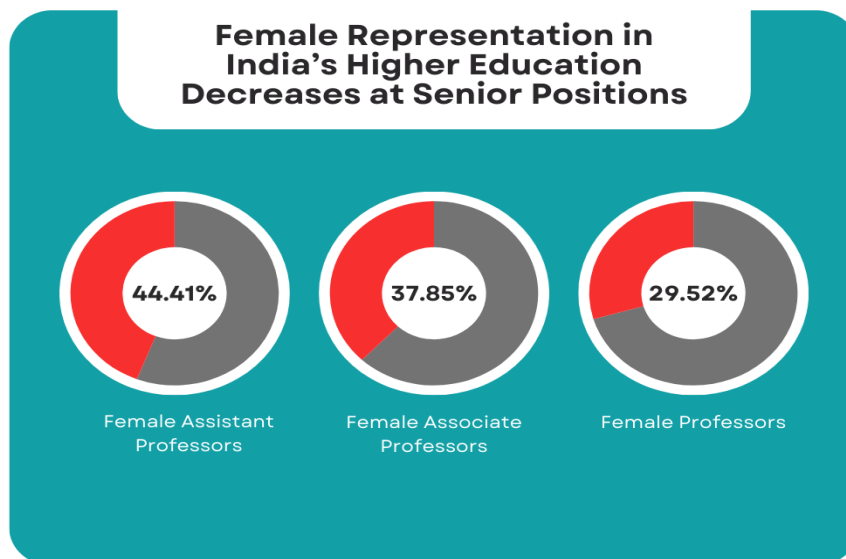
The potential wages and career prospects in the future may be affected by these discrepancies. Women face barriers to accessing high-paying jobs in sectors such as computer science and engineering, contributing to the widening gender pay gap. According to the Global Gender Gap Report 2023, women make up just 27% of India's STEM workforce. India ranked 127th on the global index. (World Economic Forum. (2023). Global Gender Gap Report 2023, n.d.)

#### Impact of Gender Bias on Career Advancement

As per AISHE 2021-22, the total faculty/teachers count in higher education institutions for 2021-22 stands at 15.98 lakh, with approximately 56.6% being male and 43.4% female. This is noteworthy considering that at both undergraduate and postgraduate levels, the percentage of female graduates surpasses that of males. (*Ministry of Education All India Survey on Higher Education 2021-22 Students Enrolment Teachers Gross Enrolment Ratio*, n.d.)

Despite receiving fair and equal opportunities in higher education, the female workforce numbers do not mirror this trend. Several factors contribute to this situation, including societal stereotypes and biases against women, which hinder their career prospects in higher education. Additionally, responsibilities related to marriage and pregnancy may impede timely promotions for women, while denial of higher academic and leadership roles at institutions further exacerbates the issue. The representation of female Assistant Professors in higher education is significantly lacking, with this proportion declining further for more senior positions such as Associate Professor and Professor. Nationally, 44.41% of Assistant Professors are female, but this figure drops to 37.85% for Associate Professors and 29.52% for Professors in 2021-22. (Supriya Sweety, 2024)

Female Faculty in Higher Education as per AISHE Report 2021-22



Source: All India Survey on Higher Education (AISHE) Report 2021-22

The number of female junior faculty has been increasing, indicating progress in closing the gender parity gap at this rank. However, there are still few females in senior faculty positions, leading to a wide gender gap. (Nithiya & Amardeep, 2021). The relationship between the number of female junior faculty and the number of female postgraduate pass outs is positive and significant, suggesting that an increase in highly educated women is proportional to the number of junior faculty. (Sudeshna, 2020)

However, statistical analysis shows that only the number of female postgraduate pass outs with a PhD degree significantly determines the number of female junior faculty in higher education institutions in India. (Tien-Li, 2021). To address this gender disparity, gender-oriented government policies are needed to promote the inclusion of women in senior faculty and leadership positions. (Karuna, 2020)

Even though more women are engaging in higher education, their opportunities to attain senior positions are still restricted, presenting a significant challenge for Western societies. The trend of senior roles predominantly emerging from fields dominated by men, such as STEM, has been observed, and organizational attitudes toward caregiving responsibilities and maternity have further hindered women's advancement into senior positions. (Pat et al., 2015).

Despite considerable efforts towards women's empowerment, gender bias hinders women from excelling and attaining equal opportunities in various fields. Prejudices against women impact their performance and jeopardize their prospects for advancement in any job. There is a common belief that a woman's responsibilities as a homemaker, mother, or wife impede her professional endeavors. As per the 2023 Gender Social Norms Index (GSNI) report, released by the United Nations Development Programme (UNDP), nine out of ten men and women worldwide hold biases against women. According to the latest UNDP report, over 99.22 per cent of people in India hold at least one bias against women, while over 86.26 per cent hold at least two biases. The report states that around 75.09 per cent of the population in India holds an economic bias against women's right to work and their rank in the workplace. This means that over 80.38 per cent of men and 67.87 per cent of women in India believe that men make better executives than women and that men have more rights to jobs. The average income gaps between women and men persist, despite a declining disparity in education between the genders. (UNDP Report Exposes India's Gender Bias Crisis - Frontline, n.d.)

### **Gender Disparities in Research**

Gender bias is evident in various research fields. Studies show disparities in authorship based on gender, with women being underrepresented, especially in prominent authorship positions and higher-ranked journals. (Rinaldo et al., 2023)

Gender bias has had varying impacts on the advancement of women in scientific research. While some domains show parity or advantages for women, biases persist in others. Research indicates that tenure-track women are at parity or advantaged in domains like grant funding, journal acceptances, and hiring, but face bias in teaching ratings and salaries. (Stephen et al., 2023) Additionally, under citation of publications authored by women negatively affects academic visibility and career advancement, especially in fields with skewed gender distributions. (Steffen et al., 2022) Gendered funding outcomes in STEM fields result from systemic biases during peer review, leading to underrepresentation of women in senior academic leadership. (Jessica & Louise, 2022)

There is a significant gap in publication contribution between male and female authors which can be attributed to several factors. Firstly, collaborative research practices play a crucial role, with female authors tending to include more new collaborators, which can lead to lower publication output. ((2023) Gender-Related Differences in the Citation Impact of Scientific Publications and Improving the Authors' Productivity.) Additionally, articles with predominantly male authors are cited more than those with mixed or female author compositions, indicating a bias in citation impact. (Unislawa, 2022), the productivity of scientific activity is impacted by gender, with male-authored articles showing a contribution advantage over female-authored ones, further exacerbating the publication gap. (Andrii et al., 2022) This gender disparity in publication productivity can hinder the career advancement of women in academia, highlighting the need for addressing gender inequality in scientific publishing. (Jessica et al., 2022)

### **Education and Gender Equality**

Over the past few decades, significant strides have been made towards achieving gender parity in higher education, with tangible results becoming increasingly evident. Data indicates a consistent improvement in the enrollment percentage of women in colleges and universities all over the world. This positive trend is largely attributed to concerted efforts and initiatives, including the formulation of laws and policies aimed at facilitating equal access to education for girls and women.

Despite these advancements, challenges persist, particularly for marginalized and economically disadvantaged communities. For some, the simple act of sending their daughters to school remains a daunting task, let alone supporting them through higher education. The dream of obtaining a degree often appears unattainable for these individuals. Even for those who manage to overcome these initial obstacles and earn a degree, the journey towards economic independence is fraught with difficulties.

Women who have acquired a higher education degree frequently encounter barriers when attempting to translate their qualifications into meaningful employment opportunities. Discrimination and biases continue to permeate workplaces, impeding their career advancement and professional development. These systemic challenges not only hinder individual progress but also perpetuate gender disparities within the workforce, undermining broader efforts towards gender equality.

According to the 2020 Global Education Monitoring (GEM) report by UNESCO, the most marginalized women face significant challenges in acquiring literacy skills. In 59 countries, women aged 15 to 49 from the poorest households are four times more likely to lack basic literacy compared to those from the wealthiest households. However, policy interventions have the potential to mitigate the intergenerational transmission of educational disadvantages. (UNESCO. 2020. Global Education Monitoring Report – Gender Report: A New Generation: 25 Years of Efforts for Gender Equality in Education. Paris, UNESCO., n.d.)

Effective interventions may include implementing quotas in tertiary education enrollment for vulnerable groups, providing scholarships and cash transfers, and eliminating user fees for primary education. Gender disparities also persist in teacher recruitment and advancement to leadership roles, highlighting the need for teacher education programs that are more gender-sensitive. It's crucial to recognize that meaningful change in education will only occur when deeply ingrained gender norms in society are challenged and dismantled.

Higher education institutions play a crucial role in promoting gender equality. They have the responsibility to critically review the current situation, identify social circumstances, and design ways to change social reality. (Armin, 2022) To address and overcome gender inequality, universities need to implement gender-sensitization programs, have specific laws and redressal mechanisms, and create a gender-inclusive curriculum. (Amila, 2023) gender inequality in higher education institutions is important to understand the progress being made in terms of gender balance. A multi-dimension-based index can be used to evaluate gender inequality, considering dimensions such as empowerment, education, health, violence, and time. (Josilene et al.,2022) Overall, higher education institutions have the potential to be powerful agents for promoting gender equality, diversity, and inclusion in both the higher education context and society as a whole. (Daniela & Dinulescu, 2022)

One of the 17 goals set by the United Nations as part of the 2030 Agenda for Sustainable Development. SDG 5 specifically aims to achieve gender equality and empower all women and girls. It addresses various aspects of gender inequality, including issues such as unequal access to education and healthcare, gender-based violence, economic disparities, and unequal participation in decision-making processes. The goal is to ensure that women and girls have equal rights, opportunities, and representation in all spheres of life. Achieving SDG 5 is crucial for creating a more just and equitable world for everyone. (*THE 17 GOALS | Sustainable Development*, n.d.)

Progress towards achieving gender equality, particularly in increasing women's representation in management positions, has been disappointingly slow. Despite women comprising nearly 40% of the global workforce, they only hold 28.2% of managerial roles as of 2021. The pace of improvement has been sluggish, with only a 1.0-percentage-point increase since 2015. At this rate, it would take over 140 years to reach gender parity in managerial positions. Additionally, while there has been some improvement in reducing child marriages, particularly in countries like Bangladesh, Ethiopia, India, Maldives, and Rwanda, globally, the prevalence of child marriage remains a significant concern. Currently, one in five young women are married before turning 18, compared to one in four 25 years ago. Despite progress, the world is still far from eliminating child marriage, with projections suggesting that over 9 million girls will still be married by 2030. The challenges posed by the COVID-19 pandemic, conflicts, and the impacts of climate change further exacerbate these issues. It is estimated that the pandemic alone could lead to an additional 10 million girls becoming child brides by 2030. (— *SDG Indicators*, n.d.)

The attainment of gender equality is contingent upon access to education. Through the acquisition of knowledge, skills, and opportunities for both professional and personal development, education empowers women and girls. Their capacity to engage in the political, social, and economic realms is enhanced, and they are empowered to make educated decisions about all aspects of their lives, including their reproductive health. More funding is required to expand access to high-quality education to overcome the obstacles that women and girls experience when trying to further their education, particularly in underprivileged areas where there are few educational options.

## Conclusion

In conclusion, the struggle for gender equality in education and the workforce persists, rooted in centuries of societal inequality and reinforced by patriarchal structures and biases. While progress has been made, particularly in increasing female enrollment in higher education, significant barriers remain, including gender stereotypes, discrimination, and unequal access to certain academic fields and career opportunities. In academia, women continue to be underrepresented in leadership roles and fields like STEM, facing cultural prejudices and biases that deter their participation and advancement. Gender bias is also evident in research, with disparities in authorship and publication productivity hindering the career progression of women scientists and academics. These systemic challenges extend beyond academia, affecting women's access to meaningful employment opportunities and their ability to advance in their careers. Discrimination and biases in the workforce perpetuate gender disparities, undermining broader efforts towards achieving gender equality. Addressing these challenges requires concerted efforts from governments, institutions, and society as a whole. The United Nations' Sustainable Development Goal 5 underscores the importance of achieving gender equality and empowering women and girls across all sectors. This necessitates increased investments in education, the enactment and enforcement of laws and policies to protect women's rights, and the dismantling of societal barriers that limit women's opportunities. By working towards dismantling systemic barriers and biases, we can create a more equitable and inclusive society where all individuals can thrive, regardless of gender.

## References

1. SDG Indicators. (n.d.). Retrieved April 18, 2024, from <https://unstats.un.org/sdgs/report/2023/Goal-05/>
2. (2023). *Gender-Related Differences in the Citation Impact of Scientific Publications and Improving the Authors' Productivity*. doi: 10.20944/preprints202305.0531.v1. (n.d.). <https://doi.org/doi:10.20944/preprints202305.0531.v1>
3. Adrienne, Steffen., Janki, Dodiya., Cornelia, Heinisch., Sibylle, Kunz., Sandra, Rebholz., Inga, Schlömer., Silke, Vaas. (2023). *An Exploration of Critical Incidents Impacting Female Students' Attitude Towards STEM Subjects*. *International Conference on Gender Research*, 6(1):215-223. doi: 10.34190/icgr.6.1.994. (n.d.). <https://doi.org/doi:10.34190/icgr.6.1.994>
4. Amila, Ždralović. (2023). *Rodna ravnopravnost u visokoškolskom obrazovanju: horizontalna rodna segregacija u području društvenih nauka / gender equality in higher education: horizontal gender segregation in the social sciences*. *Pregled: časopis za društvena pitanja / Periodical for social issues*, 303-316. doi: 10.48052/19865244.2023.1.303. (n.d.). <https://doi.org/doi:10.48052/19865244.2023.1.303>
5. Andrii, Biloshchytskyi., Alexander, Kuchansky., Yurii, Andrashko., M., Gladka. (2022). *Impact of Gender on Publication Productivity and Scientific Collaboration*. 1-4. doi: 10.1109/SIST54437.2022.9945745. (n.d.). <https://doi.org/doi:10.1109/SIST54437.2022.9945745>
6. Armin, Owzar. (2022). *Making Higher Education Institutions Gender-Sensitive*. 239-258. doi: 10.4324/9781003286943-19. (n.d.). <https://doi.org/doi:10.4324/9781003286943-19>
7. Daniela, M., Dinulescu. (2022). *Integrating Gender Equality and Social Inclusion in the Curricula of Higher Education Institutions: An Approach for the Hindukush Himalaya Region*. 251-265. doi: 10.1007/978-981-19-4715-5\_16. (n.d.). [https://doi.org/doi:10.1007/978-981-19-4715-5\\_16](https://doi.org/doi:10.1007/978-981-19-4715-5_16)
8. Faridatul, Qomariah. (2023). *The influence of self-efficacy, interest, and stereotype threat on career intentions and choices related to math and science*. doi: 10.32920/ryerson.14664978. (n.d.). <https://doi.org/doi:10.32920/ryerson.14664978>
9. *Girls' education | UNICEF*. (n.d.). Retrieved March 19, 2024, from <https://www.unicef.org/education/girls-education>
10. Jessica, G., Berger., Louise, E., Purton. (2022). *Gender inequities in medical research funding is driving an exodus of women from Australian STEM academia*. *Immunology and Cell Biology*, 100(9):674-678. doi: 10.1111/imcb.12568. (n.d.). <https://doi.org/doi:10.1111/imcb.12568>
11. Jessica, L., Mackelprang., Eva, E, Johansen., Catherine, Orr. (2022). *Gender disparities in authorship of invited submissions in high-impact psychology journals.. American Psychologist*, doi: 10.1037/amp0001106.supp. (n.d.). <https://doi.org/doi:10.1037/amp0001106.supp>

12. Josilene, Aires, Moreira., Catarina, Sales, Oliveira. (2022). *Quantifying for Qualifying: A Framework for Assessing Gender Equality in Higher Education Institutions. Advances in the Social Sciences*, 11(10):478-478. doi: 10.3390/socsci11100478. (n.d.). <https://doi.org/doi:10.3390/socsci11100478>
13. Karuna, Chanana. (2020). *Women and Leadership: Strategies of Gender Inclusion in Institutions of Higher Education in India*. 141-162. doi: 10.1007/978-3-030-43593-6\_8. (n.d.).
14. Ministry of Education All India Survey on Higher Education 2021-22 Students Enrolment Teachers Gross Enrolment Ratio. (n.d.). Retrieved April 7, 2024, from [www.aishe.gov.in](http://www.aishe.gov.in)
15. Ministry of Education, Government of India. (2021). *All India Survey on Higher Education 2021-22*. (n.d.). Retrieved April 7, 2024, from <https://aishe.gov.in/aishe/viewDocument.action?documentId=353>
16. Nithiya, Amirtham, S., Amardeep, Kumar. (2021). *Gender parity in STEM higher education in India: a trend analysis. International Journal of Science Education*, 43(12):1950-1964. doi: 10.1080/09500693.2021.1946867. (n.d.).
17. Noemí, Merayo., Alba, Ayuso. (2022). *Analysis of barriers, supports and gender gap in the choice of STEM studies in secondary education. International Journal of Technology and Design Education*, 1-28. doi: 10.1007/s10798-022-09776-9. (n.d.). <https://doi.org/doi:10.1007/s10798-022-09776-9>
18. Pat, O'Connor., Teresa, Carvalho., Agnete, Vabø., Sónia, Cardoso. (2015). *Gender in Higher Education: A Critical Review*. 569-584. doi: 10.1007/978-1-137-45617-5\_30. (n.d.).
19. Rinaldo, N., Piva, G., Ryder, S., Crepaldi, A., Pasini, A., Caruso, L., Manfredini, R., Straudi, S., Manfredini, F., & Lamberti, N. (2023). *The Issue of Gender Bias Represented in Authorship in the Fields of Exercise and Rehabilitation: A 5-Year Research in Indexed Journals. Journal of Functional Morphology and Kinesiology*, 8(1). <https://doi.org/10.3390/JFMK8010018>
20. Steffen, Riemann., Mandy, Roheger., Jan, Kohlschmidt., Jennifer, Kirschke., Margherita, Lillo., Agnes, Flöel., Marcus, Meinzer. (2022). *Gender imbalances in citation rates are mediated by field specific author gender distributions. bioRxiv*, doi: 10.1101/2022.07.28.501862. (n.d.). <https://doi.org/doi:10.1101/2022.07.28.501862>
21. Sudeshna, Ghosh. (2020). *Exploring Gender Segregated Educational Effects on Income Inequality, India: A Time Series Analysis*. 243-278. doi: 10.1007/978-981-15-5648-7\_14. (n.d.).
22. Supriya Sweetey. (2024). *Women Still Under-Represented in Indian Academia | NewsClick*. 08 March. <https://www.newsclick.in/women-still-under-represented-indian-academia>
23. *THE 17 GOALS | Sustainable Development*. (n.d.). Retrieved April 18, 2024, from <https://sdgs.un.org/goals>
24. Tien-Li, Chen. (2021). *Comparing the Expanded Effect of Higher Education Systems on Their GPI in China and India. International journal of social science and humanity*, 1-4. doi: 10.18178/IJSSH.2021.V11.1027. (n.d.).
25. UNESCO. 2020. *Global Education Monitoring Report – Gender Report: A new generation: 25 years of efforts for gender equality in education*. Paris, UNESCO. (n.d.). <https://doi.org/https://doi.org/10.54676/IBSP9880>
26. Unislawa, Williams. (2022). *The Publication Gender Gap, Collaboration, and an Index of Inclusion for Scholars Publishing Peer-Reviewed Research*. 56:128-132. doi: 10.1017/S1049096522000828. (n.d.). <https://doi.org/doi:10.1017/S1049096522000828>
27. *Women comprises 48% of overall enrollment in higher education: AISHE report | Education - Hindustan Times*. (n.d.). Retrieved March 25, 2024, from <https://www.hindustantimes.com/education/news/women-comprises-48-of-overall-enrollment-in-higher-education-aishe-report-101706323112640.html>
28. *World Economic Forum. (2023). Global Gender Gap Report 2023*. (n.d.). Retrieved April 7, 2024, from [https://www3.weforum.org/docs/WEF\\_GGGR\\_2023.pdf](https://www3.weforum.org/docs/WEF_GGGR_2023.pdf).

