

Equity and Access in Indian Higher Education: Comparative Enrollment and Gender Parity Trends among Muslims and Other Minority Groups

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ABSTRACT

Purpose – India’s higher education system has expanded rapidly over the past decade, yet access remains uneven across religious minority groups, particularly Muslims and other minorities such as Christians, Sikhs, Buddhists, Jains, and Parsis. While national indicators show improvement in gender parity, significant disparities persist within minority communities, especially among women whose participation continues to lag behind national averages. The purpose of this study is to examine gender-disaggregated enrollment patterns, growth rates, and the Gender Parity Index (GPI) pertaining to Muslim, and other minority groups at national level. On the basis of results, this study offers actionable insights for higher education institutions, and civil society organizations seeking to address entrenched disparities. It also contributes academically by filling a critical knowledge gap and reframing gender parity as a within-community issue, rather than merely a national aggregate metric. **Methodology** – Study employs a descriptive research design, utilizing secondary data from the All-India Survey on Higher Education (AISHE) spanning from 2010-11 to 2021-22. AISHE provides comprehensive, government-verified records of enrollment, gender distribution, and minority representation across recognized higher education institutions in India. To examine enrollment trends and gender parity, minority students are classified into two categories: Muslims and other minorities (Christians, Sikhs, Jains, Buddhists, Parsis). Gender-specific analyses assess patterns of growth, participation, and equity over the study period. **Findings** – The findings reveal that despite significant gains, Muslim women remain underrepresented and continue to face structural barriers including financial constraints, geographic disparities, and limited institutional access. In contrast, women from other minority communities benefit from comparatively stronger socio-economic positioning and more enabling educational environments. These results highlight an urgent need for targeted policy interventions such as enhanced scholarships, improved local access to institutions, gender-inclusive infrastructure, and community awareness initiatives. **Policy Implications** - Policy implications include prioritizing scholarships, hostels, and outreach in underserved regions to boost Muslim women's participation, while sustaining support for other minority groups in rural areas. Socially, enhanced enrollment promotes empowerment and inclusive growth; academically, it underscores the need for data-driven strategies aligned with Sustainable Development Goal 4. **Originality/Value** - This is original research work based on official data released by the Ministry of Education, Government of India. It aligns with the goals of the National Education Policy (NEP) 2020 and SDG 4, offering evidence-based insights to strengthen equitable and inclusive participation of minority women in higher education.

Keywords: Higher Education, Muslim Student Enrollment, Gender Parity Index, Minority Education, SDG 4, India.

INTRODUCTION

Higher education is a critical lever for social and economic mobility, shaping access to livelihoods, leadership, and civic participation. Over the past decade, India has pursued an ambitious expansion of its higher education system, with enrollment rising from 27.5 million in 2010-11 to 43.27 million in 2021-22, accompanied by improvements in institutional diversity and national-level gender parity. These gains reflect the impact of policy initiatives such as institutional expansion, reservation frameworks, scholarships, and targeted outreach programs aimed at enhancing inclusiveness. Yet, aggregated national progress often obscures persistent disparities within specific social and religious groups, particularly among religious minorities.

Among India's religious minorities, Muslims constitute the largest community, accounting for approximately 14% of the total population, but remain significantly underrepresented in higher education relative to their demographic share Asgar (2022). Other Minority groups (Christians, Sikhs, Buddhists, Jains, and Parsis) also exhibit uneven participation, with gender gaps that vary in magnitude and persistence across communities. While national indicators show a steady rise in the Gender Parity Index (GPI) and female Gross Enrollment Ratio (GER), the experience of minority women, especially Muslim women, remains distinct and less well documented. Despite overall growth, minority women continue to lag behind national averages in enrollment and completion, with pronounced regional, socio-economic, and cultural constraints shaping their educational trajectories.

Background and Context

The Indian Constitution recognizes Muslims, Christians, Sikhs, Buddhists, Jains, and Parsis as religious minorities and guarantees their right to establish and administer educational institutions under Article 30, alongside broader protections for equality and educational rights. Legal and policy frameworks, including the Right to Education Act (2009) and various scholarship and support schemes, aim to enhance access for these communities are also in place. Nevertheless, Muslims have historically exhibited lower educational attainment across schooling levels, and within this group, women face compounded disadvantages due to intersecting socio-economic, geographic, and cultural barriers.

For minority communities, higher education for women is particularly transformative, with well-established links to improved employment prospects, delayed marriage, enhanced intra-household decision-making, and broader community development. Gender equality in education is thus not only a moral imperative but also a key driver of equitable development, central to achieving the goals of the National Education Policy (NEP) 2020 and Sustainable Development Goal 4 (SDG4) on quality education. Understanding the enrollment patterns and gender parity trends of Muslim and other minority women is therefore essential for evaluating India's progress toward inclusive and equitable higher education.

Policy Context and Structural Challenges

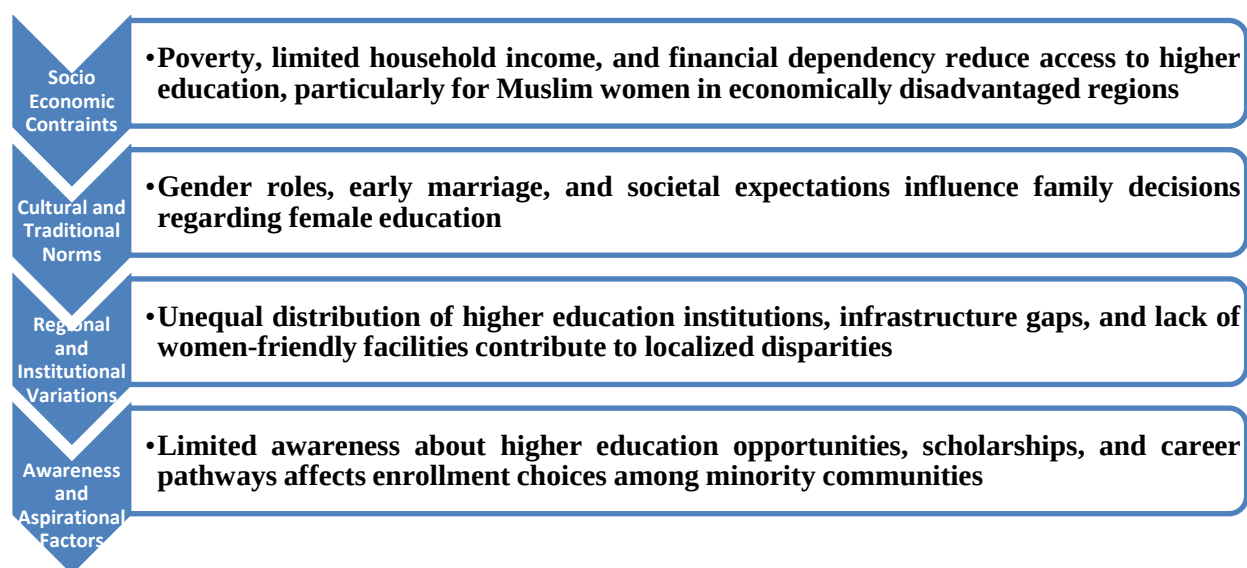
India's educational policy landscape has evolved significantly, with NEP 2020 and international commitments under SDG 4 placing renewed emphasis on equitable access and

gender inclusivity. Complementary government programs (such as scholarships for educationally backward minorities, infrastructure development, skill training, free coaching for competitive examinations, and community outreach) seek to improve access for marginalized groups. Reports such as the Sachar Committee (2006) have highlighted the structural nature of educational backwardness among Muslims, rooted in socio-economic marginalization, limited institutional access, and cultural norms that can restrict female mobility and safety.

Despite these policy advances, large sections of minority populations continue to face barriers arising from socio-economic deprivation, regional disparities, weak institutional outreach, and cultural constraints. For women in Muslim and other minority communities, the intersection of gender norms, economic constraints, and inadequate support systems often limits their educational aspirations and participation. Against this backdrop, this study explores whether recent policy reforms and socio-cultural shifts have translated into measurable improvements in higher education participation among Muslim and other minority women over the period 2010-11 to 2021-22.

Causes of Gender Disparity

Gender disparities in higher education among Muslim and other minority groups stem from a complex interplay of socio-economic, cultural, institutional, and aspirational factors. Socio-economic marginalization, lower parental educational attainment, and limited access to quality institutions constrain opportunities for both men and women, but these disadvantages are often more acute for women. Cultural perceptions regarding women's mobility, safety, and roles in public life can further restrict their access to higher education, particularly in Muslim-concentrated and rural areas. At the same time, other minority groups tend to benefit from relatively stronger socio-economic positioning, urban concentration, and community-level support for female education, which contribute to more favorable enrollment patterns and higher GPI values. Despite progress, gender disparities persist due to multiple interrelated factors:



Purpose and Significance

The purpose of this study is to analyze enrollment trends using All India Survey on Higher Education (AISHE) data to assess whether Muslim and other minority women are advancing, stagnating, or falling behind in higher education participation. The inquiry is significant for three reasons. First, minority women are among the most educationally disadvantaged groups, making their progress a vital indicator of social equity (Ahmad & Sikandar, 2022). Second, a full understanding of gender parity requires disaggregated analysis within communities, not just at the national level. Third, existing literature provides limited longitudinal, gender-disaggregated evidence on religious minorities, and policymaking cannot rely on assumptions or outdated patterns.

By identifying patterns of improvement, stagnation, or decline, this study offers actionable insights, higher education institutions, and civil society organizations seeking to address entrenched disparities. It also contributes academically by filling a critical knowledge gap and reframing gender parity as a within-community issue, rather than merely a national aggregate metric.

Objectives of the Study

Drawing on AISHE data for the period 2010-11 to 2021-22, this study aims to:

1. Quantify the overall growth in male and female student enrollment in higher education.
2. Examine changes in the gender gap and assess progress toward parity.
3. Analyze trends in the Gender Parity Index (GPI) as an indicator of equity.
4. Analyze growth trends in higher education for Muslim and other minority women.
5. Identify whether minority women are narrowing gender gaps relative to their male counterparts.
6. Interpret these trends in the context of national gender parity efforts and policy frameworks such as NEP 2020 and SDG 4.

By addressing these objectives, the study provides empirical evidence on gender equity in higher education, offering insights that can inform policy design and support inclusive educational development in India

Review of Literature

The Gender Parity Index (GPI) is widely used as a key metric to assess progress in closing gender gaps in educational enrollment, with evidence indicating steady but uneven advances over time (UNESCO, 2015; AISHE, 2022). In the Indian context, national-level analyses show a gradual improvement in GPI across higher education, reflecting broader efforts to expand access and promote gender equity (AISHE, 2022; Education for All in India, 2023). However, much of the existing scholarship remains largely descriptive, emphasizing aggregate trend observation rather than rigorous statistical modeling of growth patterns and inter-group disparities (AISHE, 2022; Education for All in India, 2023).

Recent analyses of higher education data indicate that Muslim women have progressively narrowed the gender gap in enrollment. From 2016-17 onward, the GPI for Muslim students has consistently exceeded the national average, reaching a parity score of 1.01 in 2020-21, compared to a national GPI of 0.93 in the same year (Education for All in India, 2023). Female enrollment among Muslims has grown at a faster rate than male enrollment, and by 2021, women accounted for slightly more than half of all Muslim students in higher education (Education for All in India, 2023). Despite these gains, the overall GER for Muslims remains substantially below the national average, highlighting persistent structural barriers to access for both Muslim men and women (Krishna, 2023). Trends in GER across the educational continuum from primary through higher secondary further suggest that Muslim women have made steady advancements between 2016-17 and 2020-21, contributing to a gradual but meaningful improvement in gender parity within the community (Khatoun, 2024).

While a substantial body of research examines higher education expansion and gender disparities in India, systematic, comparative, and gender-focused assessments of religious minorities particularly Muslim and Other Minority women remain limited (AISHE, 2022; Education for All in India, 2023). Existing studies often treat minorities as a single, undifferentiated category, thereby masking important heterogeneity across groups such as Muslims, Christians, Sikhs, Buddhists, and Parsis (AISHE, 2022; Education for All in India, 2023). Theoretical frameworks on educational equity and gender provide useful conceptual insights, but they have not been consistently applied to large-scale, longitudinal datasets that allow for robust comparative analysis (AISHE, 2022; Education for All in India, 2023). Methodological inconsistencies, conceptual fragmentation, and a lack of comparative, within-community approaches have contributed to significant gaps in the literature (AISHE, 2022; Education for All in India, 2023).

This study addresses these gaps by employing a theoretically grounded, data-driven analysis of enrollment and gender parity trends among Muslim and other minority women in Indian higher education over the period 2010-11 to 2021-22. By focusing on gender-disaggregated, longitudinal AISHE data, the analysis provides a systematic and comparative assessment of how Muslim and other minority women have fared relative to national patterns, thereby contributing to both academic scholarship and evidence-based policy development in the area of inclusive higher education.

Synthesis and Research Gap

Existing evidence indicates that gender parity in higher education has advanced across Muslim and other minority communities, though progress remains uneven. Muslim women's enrollment has increased steadily, yet they continue to encounter substantial barriers, including socio-economic constraints, regional disparities, limited institutional access, and cultural factors that affect participation. In contrast, women from other minority groups such as Christians, Sikhs, Buddhists, Jains and Parsis demonstrate stronger enrollment patterns, supported by more robust educational infrastructure and community-level encouragement. These trends reveal persistent gender disparities within minority groups, influenced by intersecting social, economic, and structural elements that vary across communities.

A prominent research gap arises from the limited disaggregated analysis of minority subgroups, which obscures their distinct enrollment challenges and trajectories. Most studies aggregate minorities into a single category, overlooking internal diversity, intersectional dynamics, and regional variations in gender parity. Furthermore, longitudinal and comparative research on higher education enrollment trends among Muslim and other minority women remains scarce, as does work examining policy implementation effects, transition stages between educational levels, and access to digital resources.

This study addresses these gaps through a systematic, data-driven exploration of gender-disaggregated enrollment and GPI trends for Muslim and other minority women in Indian higher education from 2010-11 to 2021-22. By leveraging longitudinal AISHE data, it offers a differentiated analysis that highlights community-specific patterns and informs targeted policy interventions for equitable access.

METHODOLOGY

This study employs a descriptive research design, utilizing secondary data from the AISHE spanning from 2010-11 to 2021-22. AISHE provides comprehensive, government-verified records of enrollment, gender distribution, and minority representation across recognized higher education institutions in India. To examine enrollment trends and gender parity, minority students are classified into two categories: Muslims and other minorities (Christians, Sikhs, Jains, Buddhists, Parsis). Gender-specific analyses assess patterns of growth, participation, and equity over the study period.

Three key indicators structure the analysis, following established methodological approaches (Ahmad & Ahmad 2025a) are as follows:

- (i) **Annual Growth Rate (AGR):** This measures the percentage increase in enrollment from one year to the next, calculated as:

$$AGR (\%) = \frac{\text{Value for the year} - \text{Value for previous year}}{\text{Value for previous year}} \times 100$$

- (ii) **Gender Disparity Rate (GDR):** Expressed as a percentage, GDR quantifies the difference in enrollment shares between males and females:

$$GDR (\%) = \text{Enrolment \% for males} - \text{Enrolment \% for females}.$$

A positive value indicates male advantage; a negative value signals female advantage.

- (iii) **Gender Parity Index (GPI):** This socio-economic indicator evaluates relative educational access by comparing female to male enrollment proportions:

$$GPI = \text{Percentage of females} / \text{Percentage of males}$$

- GPI = 1 → Perfect parity: equal access for both males and females.
- GPI < 1 → Disparity in favor of males (fewer females relative to males).
- GPI > 1 → Disparity in favor of females (more females relative to males).

These metrics enable a systematic evaluation of enrollment trajectories and gender equity for Muslim and other minority women relative to national trends, with all calculations derived directly from AISHE datasets.

RESULTS

This study analyzes gender-disaggregated enrollment patterns in Indian higher education using secondary data from AISHE spanning from 2010-11 to 2021-22. Table 1 presents enrollment of male and female students and GPI values across national, Muslim, and other minority (Christians, Sikhs, Jains, Buddhists, Parsis) student populations, highlighting divergent progress in participation and gender equity.

Table-1: Enrollment Patterns and GPI: National Level, Muslim, and Other Minority Students

Year	Student Enrolment at National Level (including all groups)			Muslim Student Enrolment			Other Minority Student Enrolment		
	Male	Female	GPI	Male	Female	GPI	Male	Female	GPI
2010-11	15466559	12033190	0.78	390543	306081	0.78	172912	167455	0.97
2011-12	16173473	13010858	0.80	609014	537383	0.88	250657	294718	1.18
2012-13	16617294	13535123	0.81	666778	584878	0.88	252632	311595	1.23
2013-14	17495394	14840840	0.85	748654	648105	0.87	289644	342086	1.18
2014-15	18488619	15723018	0.85	820462	713196	0.87	296820	352706	1.19
2015-16	18594723	15990058	0.86	858090	755620	0.88	317515	365446	1.15
2016-17	18980595	16725310	0.88	916388	822830	0.90	362663	428866	1.18
2017-18	19204675	17437703	0.91	939488	898121	0.96	359110	448517	1.25
2018-19	19209888	18189500	0.95	993396	965608	0.97	397146	470954	1.19
2019-20	19643747	18892612	0.96	1046374	1054486	1.01	404748	483002	1.19
2020-21	21237910	20142803	0.95	954655	967058	1.01	381764	448102	1.17
2021-22	22576389	20691792	0.92	1068766	1039267	0.97	427425	477734	1.12

Source: Authors' calculation based on AISHE data

The analysis details enrollment trends among Muslim and other minority women within Indian higher education over the twelve-year period, focusing on aggregate enrollment, gender-specific participation rates, and longitudinal changes measured by the GPI and AGR. These metrics illuminate the trajectory and degree of gender parity advances within minority communities, positioning these trends in relation to overall national patterns.

Overall Enrollment Trends

National higher education enrollment expanded substantially over the period, rising from 27.5 million in 2010-11 to 43.27 million in 2021-22 an increase of 57%. Female participation grew steadily, with the gender distribution averaging 53% male and 47% female. Correspondingly, the national GPI improved from 0.78 to 0.96 by 2019-20, demonstrating a clear narrowing of gender disparities. Although the GPI dipped slightly to 0.92 in 2021-22,

likely due to pandemic-related disruptions, the overall upward trend reflects increasing access for women across India at the national level.

Minority Enrollment Growth

Enrollment among Muslim students grew markedly, rising from approximately 0.7 million in 2010-11 to over 2.1 million in 2021-22 an increase of 203%. Despite a temporary decline in 2020-21, enrollment rebounded strongly the following year. Other Minority groups (Christians, Sikhs, Jains, Buddhists, and Parsis) likewise demonstrated significant expansion, increasing from 0.34 million to 0.90 million (166% growth).

In terms of proportional representation, the share of Muslim students in national higher education doubled from 2.53% to 4.87%, while other minority students increased from 1.24% to 2.09%. Although their representation remains below the national average, both groups are progressively strengthening their presence in higher education.

Gender Parity Index Trends

The GPI for overall student enrollment in India showed steady improvement from 0.78 in 2010-11 to 0.96 in 2019-20, reflecting substantial progress toward gender equality. Although a slight decline to 0.92 occurred in 2021-22, likely due to pandemic-related disruptions, the overall trend demonstrates narrowing gender disparities, moving India closer to achieving parity in higher education.

Figure 1 line graph illustrates the GPI trends across all groups over time, demonstrating the hierarchy: Other Minority > Muslim > National (all India basis including all groups/communities/categories etc.). It is observed that other minority group remains at the top of the scale throughout the period, maintaining the highest GPI values.

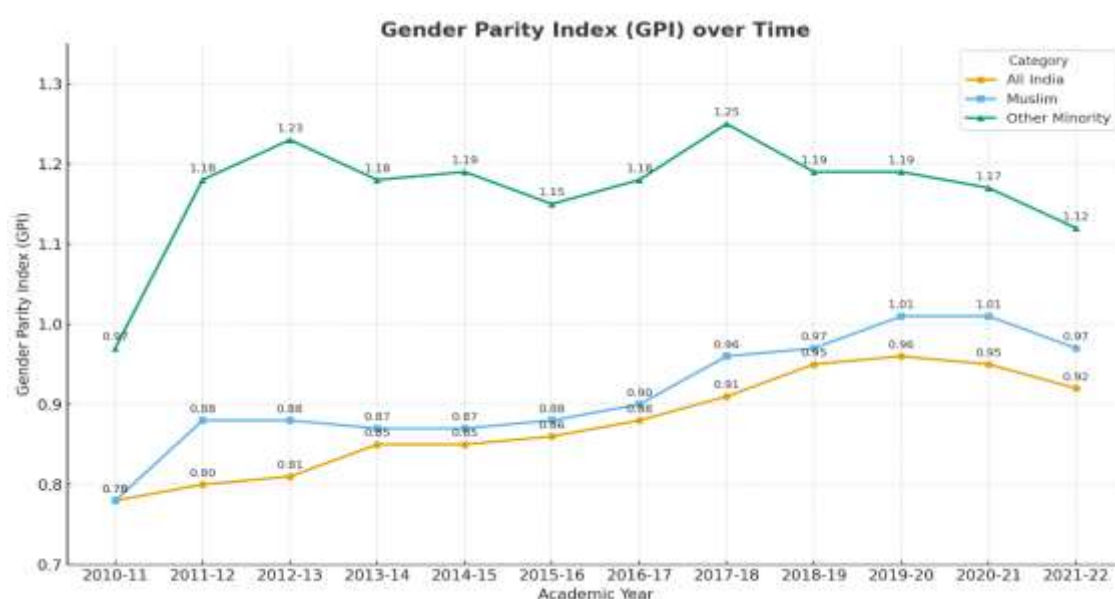


Figure 1: GPI of All India Students, Muslims and Other Minority in Higher Education

Muslim Women's Enrollment

The Gender Parity Index (GPI) for Muslim students shows a marked and sustained improvement, rising from 0.78 in 2010-11 to 0.97 in 2021-22. A notable milestone occurred in 2019-20 and 2020-21, when Muslim women briefly surpassed male enrollment, achieving full parity (GPI = 1.01). Over the twelve-year period, women accounted for approximately 48% of total Muslim enrollment, reducing the gender gap from 12.1% to just 1.4%. This consistent upward trajectory reflects growing access, increased awareness, and shifting community attitudes toward women's higher education. While the trend demonstrates significant progress, the slight dip to 0.97 in 2021-22 suggests that structural constraints (such as economic disparities, regional inequalities, and traditional gender norms) continue to shape parity outcomes within the community. Overall, Muslim students occupy the middle position in the GPI hierarchy, indicating transitional but noteworthy advancement toward gender-balanced participation in higher education.

Other Minority Women's Enrollment

Other Minority groups including Christians, Sikhs, Jains, Buddhists, and Parsis consistently record the highest GPI values across the study period. Their GPI ranged from 0.97 in 2010-11 to a peak of 1.25 in 2017-18, remaining above parity in most years and settling at 1.12 in 2021-22. A GPI greater than 1.0 indicates that female enrollment exceeds male enrollment, reflecting a sustained and clear female advantage in these communities. This pattern suggests that women from other minority groups benefit from comparatively stronger socio-economic conditions, higher educational awareness, urban concentration, and supportive cultural norms that prioritize women's education. The long-standing dominance of female enrollment highlights steady progress and reinforces the role of community-level factors in shaping gender outcomes in higher education.

Comparison across Groups

A clear and consistent GPI hierarchy emerges across the study period (Other Minority > Muslim > National Level) indicating systematic differences in women's access to higher education. Women from other minority communities exhibit the strongest and most sustained gains, reflecting the combined influence of socio-economic stability, urban concentration, and educationally supportive cultural norms. Muslim women show steady progress toward parity, including brief periods of surpassing male enrollment, yet their advancement is moderated by structural and socio-economic constraints that limit uniform progress across regions. At the national level, although gender parity has improved, persistent gaps remain when compared to these minority groups. Overall, this hierarchy highlights that gender equity in higher education is shaped not only by national policies but also by community-specific social environments, cultural expectations, and economic capabilities, demonstrating that progress toward parity is neither uniform nor linear across social groups.

Gender-wise Percentage Share of Minority Students

The percentage share of Muslim and other minority women in India's total higher education enrollment, using AISHE data from 2010-11 to 2021-22, with a focus on shifts in their relative representation over time. The analysis distinguishes between male, female, and total enrollment shares, enabling a nuanced understanding of gender dynamics within and across minority groups.

Table-2: Gender-wise Muslim and Other Minority Students' Enrollment share (%) in Higher Education

Year	Percentage (%) share of Muslim Students Enrollment			Percentage (%) share of Other Minority Student Enrollment		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
2010-11	2.53	2.54	2.53	1.12	1.39	1.24
2011-12	3.77	4.13	3.93	1.55	2.27	1.87
2012-13	4.01	4.32	4.15	1.52	2.30	1.87
2013-14	4.28	4.37	4.32	1.66	2.31	1.95
2014-15	4.44	4.54	4.48	1.61	2.24	1.90
2015-16	4.61	4.73	4.67	1.71	2.29	1.97
2016-17	4.83	4.92	4.87	1.91	2.56	2.22
2017-18	4.89	5.15	5.01	1.87	2.57	2.20
2018-19	5.17	5.31	5.24	2.07	2.59	2.32
2019-20	5.33	5.58	5.45	2.06	2.56	2.30
2020-21	4.50	4.80	4.64	1.80	2.22	2.01
2021-22	4.73	5.02	4.87	1.89	2.31	2.09

Source: Authors' calculation based on AISHE data

Percentage Share Trends among Muslim Women

The share of Muslim students in total higher education enrollment shows a steady upward trajectory, accompanied by a consistent, though modest, female advantage. In 2010-11, Muslim men and women each accounted for roughly 2.5% of total enrollment (2.53% and 2.54%, respectively), indicating balanced but low representation across genders. Over the decade, the total Muslim share rose to 5.45% in 2019-20 before stabilizing at 4.87% in 2021-22, with female shares slightly and consistently higher than male shares in nearly every year. Muslim women's share increased from 2.54% to 5.58% between 2010-11 and 2019-20, compared to an increase from 2.53% to 5.33% for Muslim men, confirming that women's participation has expanded at a faster rate. Although there was a temporary dip in 2020-21, likely reflecting pandemic-related disruptions, the female share recovered to 5.02% in 2021-22, while the male share stood at 4.73%, signaling sustained long-term progress in narrowing gender gaps within the Muslim community.

Percentage Share Trends among other Minority Women

Other Minority groups exhibited a distinct pattern characterized by a persistent and more pronounced female advantage throughout the period. In 2010-11, Other Minority students represented 1.24% of total enrollment, with male and female shares at 1.12% and 1.39%, respectively, already indicating higher female participation. By 2018–19, their total share had

risen to 2.32%, with female share at 2.59% and male share at 2.07%, highlighting women's leading role in this group's educational expansion. Even during the pandemic year 2020–21, the total other minority share remained at 2.01%, and by 2021-22 it had recovered to 2.09%, supported primarily by continued strength in female enrollment (2.31% vs 1.89% for males). These trends indicate that other minority women are not only consistently better represented than men in their communities, but also drive the overall growth in other minority participation in higher education.

Comparative Trends and Group Differences

A comparative reading of enrollment shares reveals both convergence and divergence between Muslim and other minority women. Muslim students recorded a faster overall increase in share from 2.53% to 4.87% than other minorities, who rose from 1.24% to 2.09%, but Muslim trends display greater volatility, especially around 2020-21, reflecting their heightened sensitivity to economic and social disruptions. Other Minority shares, by contrast, followed a steadier and more stable trajectory, with female dominance present throughout, suggesting a more favorable and long-standing environment for women's higher education in these communities. While Muslim women are gradually closing representation gaps through accelerated participation gains, other minority women exhibited more mature and stable patterns of gender advantage, maintaining a consistently higher relative presence in the system. Together, these patterns highlighted that both groups of minority women are central to the diversification of India's higher education system, but operate from different baselines and under differing socio-economic and institutional conditions.

Annual Growth Rate Patterns Across Groups

The AGR analysis reveals important differences in enrollment dynamics at National Level, Muslim, and other minority students. Figure 2, the line graph depicting the AGR% over time for National Level (overall including all groups/communities), Muslim, and other minority groups shows several distinct patterns of growth and fluctuation across academic years from 2011-12 to 2021-22.

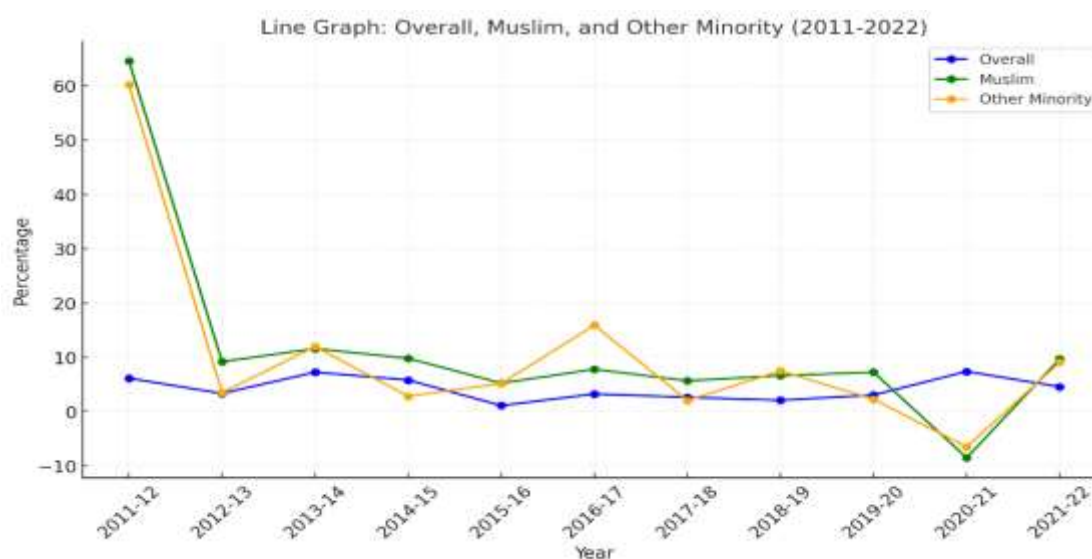


Figure 2: AGR (%) Muslims and Other Minority in comparison to Overall students

However, growth rate patterns reveal key differences among below groups:

National Level: Growth trend appears relatively stable with moderate fluctuations between 2% and 7%. The rate began at 6.13% in 2011–12, declined slightly in the following years, and experienced moderate ups and downs. Notably, there was a slight surge to 7.24% in 2013-14 and again a significant rise to 7.38% in 2020-21, possibly indicating recovery from previous slower growth years. Overall, the trend suggests a gradual but steady increase in the national context, with consistent though modest growth throughout the decade.

Muslims: Growth was more volatile, beginning with an exceptionally high growth rate of 64.56% in 2011-12 likely influenced by baseline adjustments and expanded reporting growth normalized to around 9–11% in subsequent years. Pandemic disruptions led to a drop of (–8.53%) in 2020-21, which can be attributed to pandemic-induced disruptions, economic hardships, and digital exclusion disproportionately affecting Muslim households. However, a strong rebound to 9.70% in 2021-22 indicates resilience and renewed expansion in Muslim access to higher education.

Other Minority Groups: Growth patterns exhibit similar fluctuations but showed periods of strong improvement, beginning with a high 60.23% in 2011-12, declining slightly in subsequent years, but showing strong recovery in 2016-17 (15.90%) and again in 2021-22 (9.07%) followed by a temporary decline due to pandemic in 2020-21 (–6.52%). The variability in minority growth patterns highlights their sensitivity to economic cycles, social disruptions, and policy changes.

At the national level, the enrollment demonstrates steady, moderate growth, while Muslim and other minority groups exhibited greater volatility with rapid expansions followed by contractions during disruptions. Despite fluctuations, these communities show progressive alignment with national trajectories and strong recovery, particularly among women, driven by targeted policies and shifting cultural attitudes toward gender equity. Minority enrollment patterns reveal heightened sensitivity to economic and social shocks relative to national averages, highlighting structural vulnerabilities in women's participation.

Visualization and Interpretation of Trends

Graphical comparisons of GPI and AGR trends (Figures 1 and 2) show clear distinctions across groups. Other Minority communities consistently maintain the highest GPI values, reflecting strong female representation. Muslim women show steady convergence toward parity, marked by important gains in the later years. National GPI levels improve steadily but remain slightly below parity. Visualizing these trends underscores the differing trajectories of gender equity across communities and highlights the importance of contextualizing policy interventions according to specific group needs.

Statistical Interpretation and Critical Insights

India's higher education system demonstrates steady progress toward gender parity, yet trajectories vary significantly across social groups, with Muslim enrollment exhibiting greater volatility due to socio-economic and institutional constraints. Muslim women's participation proves particularly sensitive to external shocks, as evidenced by pandemic-related contractions, reflecting underlying disparities in school preparation, financial resources, technological access, and regional institutional distribution. In contrast, other minority women maintain consistently higher enrollment and GPI values, supported by stronger socio-economic positioning, urban concentration, and community educational infrastructure.

These patterns highlight that gender equity emerges from intersecting factors (including community resources, geographic access, and digital readiness) rather than national expansion alone. While trends at national level reflect stable growth, minority volatility highlights structural vulnerabilities that amplify localized disadvantages, suggesting the limitations of uniform policy approaches for achieving parity among Muslim and other minority women.

Interpretation in Policy, Social, and Academic Context

Policy Context

Enrollment disparities and GPI trajectories among Muslim and other minority women necessitate targeted interventions beyond national frameworks. For Muslim women, sustained progress requires expanded financial aid, digital infrastructure, increased institutional density in underserved regions, and women-friendly facilities to address access barriers. Other Minority women, already demonstrating consistent female advantage, benefit from maintaining community-specific support systems, underscoring the effectiveness of differentiated strategies over uniform national policies.

Social Context

Rising Muslim female enrollment signals shifting community attitudes toward women's higher education, alongside greater recognition of its socioeconomic benefits, though financial limitations, regional inequities, and household responsibilities continue to moderate gains (Ahmad & Ahmad, 2025b). Other Minority women's sustained dominance reflects supportive social environments, urban advantages, and cultural prioritization of female education, highlighting how local norms shape gender parity outcomes.

Academic Context

These findings align with intersectionality theory, demonstrating that gender parity in higher education emerges from the interplay of religion, socio-economic status, geography, and institutional factors rather than isolated dynamics. The data support capability approaches to education, which emphasize that equitable access demands not only opportunity availability but also enabling social structures and targeted institutional support for minority women.

DISCUSSION

Interpretation of Results in Policy and Social Context

The findings demonstrate marked improvements in gender parity among Muslim and other minority students in Indian higher education from 2010-11 to 2021-22, with the GPI for Muslim students rising from 0.78 to 0.97 and other minority GPI values consistently exceeding 1. These trends reflect the effectiveness of national policies, including scholarships, coaching for competitive examinations, infrastructure development, constitutional protections under Article 30, and the Right to Education Act (2009), which align with the NEP 2020's emphasis on equity and inclusivity. Socially, rising female enrollment signals evolving community attitudes toward women's education, enhancing economic participation, social mobility, and household decision-making, though regional variations persist due to uneven policy implementation.

Synthesis of Key Findings

National higher education enrollment expanded by 57% over the period, with Muslim enrollment growing 203% and other minority enrollment increasing 166%, driven by faster female gains. Muslim women narrowed the gender gap substantially, surpassing male enrollment in 2019-20 and 2020-21, while other minority women maintained female-dominant patterns, peaking at a GPI of 1.25 in 2017-18. Annual growth rates for both groups showed greater volatility than national trends, influenced by socio-economic factors and disruptions like the COVID-19 pandemic, underscoring minority women's emerging role in advancing gender equity.

Persistent Disparities and Policy Implications

Despite measurable progress, gender disparities in higher education persist due to enduring socio-economic constraints, limited institutional access in rural regions, and cultural factors influencing female mobility, particularly among Muslim communities. While other minority groups exhibited comparatively smaller gaps largely shaped by regional and economic variations, they benefited from stronger community support systems and greater urban concentration, which help sustain female participation. These patterns highlight the presence of structural barriers that extend beyond enrollment expansion and require context-sensitive responses.

From a policy perspective, the findings reinforce the importance of targeted and inclusive interventions in narrowing gender gaps. The results provide actionable insights for the effective implementation of NEP 2020 and the advancement of SDG 4, highlighting the need for focused financial assistance, improved educational infrastructure, and sustained awareness initiatives tailored to the needs of minority women. Academically, the study emphasizes the value of continuous longitudinal monitoring to assess policy effectiveness and to capture the evolving influence of intersectional factors on higher education enrolment dynamics.

CONCLUSION

This study provides a longitudinal analysis of AISHE data (2010-11 to 2021-22), documenting distinct gender parity trajectories for Muslim and Other Minority women in Indian higher education, where Muslim GPI approached 0.97 and Other Minority GPI often exceeded 1.0. It fills a gap in disaggregated research, evaluates policy effectiveness under NEP 2020, and reframes minority women as key agents of educational equity.

As an update extending the study's longitudinal findings, recent UDISE+ datasets for 2023-24 show marginal gains in Muslim higher education enrollment, rising from 15.7% to 15.9% slightly exceeding their 14.2% population share from Census 2011 indicating continued progress in participation. However, persistent regional disparities underscore the ongoing need for targeted policies addressing poverty, institutional infrastructure gaps, and local socio-cultural constraints affecting Muslim and other minority women.

These trends position minority women as key drivers of India's educational transformation, necessitating region-specific interventions to strengthen institutional capacity and equity. Such measures align with NEP 2020's vision of universal, inclusive higher education by 2030, sustaining gender parity gains among these groups.

Key Implications and Recommendations

Policy implications include prioritizing scholarships, hostels, and outreach in underserved regions to boost Muslim women's participation, while sustaining support for other minority groups in rural areas. Socially, enhanced enrollment promotes empowerment and inclusive growth; academically, it underscores the need for data-driven strategies aligned with SDG 4. Following are some main recommendations:

- ❖ ***Infrastructure and Access:*** Expand institutions and safe hostels in low-enrollment districts, especially Muslim-concentrated areas.
- ❖ ***Financial and Community Support:*** Increase scholarships, mentorship, and awareness campaigns with local leaders.
- ❖ ***Inclusive Modalities:*** Promote inclusive and gender-sensitive curricula to improve retention.
- ❖ ***Monitoring:*** Track GPI by religion, region, and socio-economics for adaptive policymaking.
- ❖ ***Open Distance Online Digital Learning:*** Adopting this mode of education can help community address economic, social and cultural barriers w.r.t. women (Asgar, (2022)).

Limitations

This study relies exclusively on secondary data from the AISHE spanning from 2010-11 to 2021-22, which may underreport enrollment in certain institutions or regions, particularly during the survey's early years when data collection was less comprehensive. The descriptive focus on enrollment trends excludes analysis of completion rates, retention, or institutional quality, limiting insights into long-term educational outcomes for Muslim and Other Minority women. Additionally, the absence of post 2021-22 data precludes examination of pandemic recovery effects, demographic shifts, or recent policy changes on gender parity patterns. Intersectional factors such as socio-economic status, caste within minority groups, and qualitative dimensions of student experiences remain unaddressed, constraining the scope to aggregate quantitative trends.

Directions for Future Research

Future research should incorporate post-pandemic AISHE data to capture emerging enrollment dynamics and recovery patterns. The use of mixed-methods approaches would enable deeper examination of socio-cultural barriers influencing minority women's participation in higher education. Additionally, comparative regional analyses are essential for identifying spatial disparities and for refining context-specific policy interventions aimed at improving access, retention, and equity.

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