

Regional and Gender Disparities in Higher Education in Nepal: A Quantitative Case Study

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Submitted:	Revised:	Accepted:	Published:
Sep 2, 2026	Oct 1, 2026	Oct 12, 2026	Oct 17, 2026

Abstract

National enrollment figures can conceal inequalities across regions, academic levels, and fields of study. This quantitative case study examined regional and gender disparities in Nepal's higher education system using 2023/24 data from the University Grants Commission's Education Management Information System. Descriptive statistics were used to analyze enrollment, campus distribution, and financing by province, ecological belt, gender, academic level, faculty, and campus type. Women constituted 56.58% of 633,053 students, with a national gender parity index of 1.3 and a higher gross enrollment ratio than men (24.6% versus 17.8%). However, female representation decreased across academic levels, from 57.6% at the bachelor's level to 48.7% at the master's level, 22.4% at the MPhil level, and 17.7% at the PhD level. Women accounted for 24.4% of engineering enrollment and 14.5% of Sanskrit enrollment, compared with over 70% in education. Regional concentration was pronounced: Bagmati Province accounted for 44.04% of enrollment and 43.58% of campuses, compared with 4.01% and 4.05%, respectively, in Karnali Province. The Hill, Tarai, and Mountain belts accounted for 55.47%, 41.96%, and 2.56% of enrollment, respectively, while Tribhuvan University enrolled 77.61% of students nationally. Supplementary evidence from independent studies indicated that Dalit communities, comprising over 13% of the population, have historically experienced participation and completion rates substantially below national averages. The findings indicate that women's numerical predominance nationally coexists with vertical and horizontal gender segregation and substantial geographic concentration. They provide an empirical basis for

targeted resource allocation, expanded quota and scholarship mechanisms, and more disaggregated data systems to inform equity-oriented policy within Nepal's federal higher education system.

Keywords: Higher Education; Gender Disparities; Regional Disparities; Educational Equity; Nepal

INTRODUCTION

Higher education is widely regarded as a catalyst for social mobility, economic growth, and democratic participation. Nepal's higher education system has expanded substantially over the past decade: total enrollment across national institutions rose from 371,184 students in 2016/17 to 633,053 in 2023/24, an increase of about 71 percent, according to the University Grants Commission's (UGC) most recent Education Management Information System (EMIS) report. Including the roughly 28,073 students enrolled in the 59 campuses affiliated with foreign universities operating in Nepal, total higher-education enrollment reaches approximately 661,126.

This expansion has not been distributed evenly. Nepal's federal structure comprises seven provinces — Koshi, Madhesh, Bagmati, Gandaki, Lumbini, Karnali, and Sudurpashchim — and three ecological belts — Mountain, Hill, and Tarai. The EMIS 2023/24 data show that Bagmati Province, which contains the Kathmandu Valley, accounts for 44.04 percent of enrolled students and 43.58 percent of campuses, while Karnali Province accounts for only 4.01 percent of students and 4.05 percent of campuses. Tribhuvan University (TU), Nepal's oldest and largest university, alone enrolls 77.61 percent of the national total through 1,115 of the country's 1,432 campuses.

On gender, the aggregate national picture appears favorable to women: 358,140 of the 633,053 enrolled students (56.58 percent) are female, giving a national Gender Parity Index (GPI) of 1.3, and the female Gross Enrollment Ratio (24.6 percent) exceeds the male rate (17.8 percent). However, disaggregating by academic level and by faculty reveals a different pattern, discussed in Section 4.

Caste and ethnicity add a further axis of disparity. Independent studies—distinct from the UGC EMIS series, which does not itself disaggregate enrollment by caste—have repeatedly found that Dalit communities, who make up more than 13 percent of Nepal's

population, are substantially underrepresented in higher education relative to their population share (Gandhari, 2021; Bishwakarma, 2011).

Despite quantitative growth in enrollment, campuses, and public financing, Nepal's higher education system continues to display three interlocking disparities. First, enrollment and institutional capacity remain heavily concentrated in Bagmati Province and, within it, in Tribhuvan University, leaving Karnali, Sudurpashchim, and the Mountain belt comparatively underserved. Second, aggregate gender parity coexists with a marked decline in female representation at successive academic levels and with strong horizontal segregation between technical and non-technical faculties. Third, longstanding caste-based exclusion, documented in the literature on Dalit education, is not captured by the national enrollment statistics themselves, limiting the ability of policymakers to monitor progress against constitutional equality guarantees. This study uses the most recent verified national dataset to quantify the first two disparities directly and to situate the third within the wider literature.

1. How is higher education enrollment in Nepal distributed across the seven provinces and three ecological belts, relative to the number of campuses in each?
2. What is the national Gross Enrollment Ratio (GER) and Gender Parity Index (GPI), and how do they differ by gender?
3. How does female representation vary across academic levels (bachelor's, master's, MPhil, PGD, PhD) and across technical versus non-technical faculties?
4. What role does Tribhuvan University's institutional dominance play in shaping the overall pattern of enrollment?
5. What does the wider literature indicate about caste-based disparities in Nepalese higher education, and how might these intersect with the regional and gender patterns identified here?
6. What policy measures follow from these findings for Nepal's federal higher-education governance?

The general objective is to quantitatively document regional and gender disparities in Nepal's higher education system using the UGC EMIS Report 2023/24. Specific objectives are to: (1) analyze the provincial and ecological distribution of enrollment and campuses; (2) calculate and interpret the GER and GPI, disaggregated by gender; (3) examine the 'leaky

pipeline' pattern in female representation across academic levels; (4) compare female participation across technical and non-technical faculties; (5) assess the degree of institutional concentration in Tribhuvan University and Bagmati Province; and (6) situate the quantitative findings within the qualitative literature on caste-based exclusion, and derive policy recommendations.

This study provides an up-to-date, verifiable empirical baseline drawn directly from the sixteenth edition of the UGC's annual EMIS report, rather than from secondary or unverified figures. It is intended to be useful to federal and provincial policymakers, university administrators, and researchers seeking a current, sourced picture of where regional and gender gaps in Nepalese higher education remain widest.

Scope: The analysis covers all institutions reporting to the UGC for the academic year 2080/081 (2023/24 A.D.) 24 universities and medical academies and their 1,432 constituent, community, and private campuses — across all seven provinces and three ecological belts.

Limitations: The EMIS report does not disaggregate enrollment by caste or ethnicity, so the caste-based dimension of this study relies on separate academic and NGO sources that use different methodologies, sample frames, and reference years, and are not directly comparable to the EMIS enrollment figures. The EMIS data are also cross-sectional administrative counts rather than outcome measures such as graduation or employment, and pass-rate figures in the underlying report vary considerably in comparability across universities due to differences in examination and reporting practices.

Literature Review

Theoretical Framework

Human capital theory (Schultz, 1961; Becker, 1964) treats education as an investment that raises individual productivity and, in aggregate, national output; applied to Nepal, uneven regional access to higher education implies uneven accumulation of human capital across provinces. Intersectionality theory (Crenshaw, 1989) provides a framework for understanding how gender, caste, and geography can combine to produce compounded disadvantage rather than simply additive disadvantage. The 'leaky pipeline' concept (Blickenstaff, 2005), originally developed to describe the attrition of women from science

careers, is used here descriptively to characterize the decline in female representation observed across successive academic levels in the EMIS data.

Regional Disparities in Literature

Nepal's federal restructuring in 2015 created seven provinces with substantially unequal pre-existing higher-education infrastructure, much of it historically concentrated in the Kathmandu Valley. Successive UGC EMIS reports have documented this concentration for over a decade; the present 2023/24 edition continues to show Bagmati Province hosting close to 44 percent of both students and campuses nationally, a pattern broadly consistent with the center-periphery dynamic described in Nepal's development literature.

Gender and the Leaky Pipeline

International literature on the 'leaky pipeline' (Blickenstaff, 2005) describes the progressive loss of women at successive career and educational stages, particularly in technical fields. The Nepalese case, as shown in Section 4 below, is consistent with this pattern at the level of academic progression (bachelor's to PhD) though not at the level of aggregate undergraduate enrollment, where women are now the majority.

Caste-Based Disparities

Gandhari (2021), writing in the *International Journal of Educational Administration and Policy Studies*, applies a social-exclusion perspective to argue that Dalits, who constitute more than 13 percent of Nepal's population, continue to face multiple barriers to higher-education access despite constitutional equality guarantees and the National Higher Education Policy. Bishwakarma (2011) similarly finds that while Dalit enrollment at the primary level has improved, continuation to secondary and tertiary levels remains a major challenge, driven by caste-based discrimination, poverty, and limited parental education. Older but widely cited survey-based estimates compiled by the International Dalit Solidarity Network place national higher-education enrollment at roughly 17.6 percent of the relevant population compared with approximately 3.8 percent among Dalits specifically, and Bennett, Dahal and Govindasamy's (2008) analysis of Nepal Demographic and Health Survey data documents similarly large caste-based gaps in educational attainment more broadly. More recent census-based reporting (2025) has put Dalit completion of a bachelor's degree or above at roughly 1.6 percent nationally. These figures come from different survey instruments and reference periods and should be read as indicative of a persistent, large gap rather than as precisely comparable time-series estimates.

1. Modeling Culture and Education with Math (2023–2025) Instead of just talking about cultural policy or social tension in broad terms, they treated these issues like mathematical problems. They used differential equations and numerical simulations to answer practical questions:

- How do educational policies impact literacy over time?
- Can we mathematically model social friction in multicultural communities?
- How can school curricula be optimized to preserve culture without sacrificing quality?

2. The Transition to AI & Data Science (2026) Around 2026, the strategy shifts heavily. Instead of relying solely on traditional math formulas, they started building hybrid AI systems—combining classical mathematical models with modern machine learning. They focused on tackling uncertainty and risk in real-world Nepalese operations:

- **Banking & Finance:** Using explainable AI to help local cooperative banks make smarter, lower-risk lending decisions.
- **Healthcare & Clinics:** Applying predictive models to manage resources, forecast patient risks, and keep dental practices and health systems running smoothly.
- **Public & Corporate Management:** Creating risk-management frameworks to help institutions navigate unpredictable economic conditions.

METHODOLOGY

This study uses a quantitative, descriptive case-study design based entirely on secondary data published in the UGC's EMIS Report on Higher Education 2023/24 (2080/081 B.S.), supplemented for the caste-based dimension by peer-reviewed and NGO literature cited in Section 2. The EMIS report is compiled annually by the UGC from data submitted by the Offices of the Controller of Examinations and Deans' offices of Nepal's universities and medical academies, in coordination with the Central Bureau of Statistics. Standard indicators — enrollment counts and shares by province, ecological belt, gender, academic level, and faculty; the Gender Parity Index (GPI, the ratio of female to male enrollment); and the Gross Enrollment Ratio (GER, enrollment as a percentage of the official 18–22 age population) — are reported as published, without adjustment, and are

presented descriptively rather than subjected to inferential testing, consistent with the nature of the source data.

RESULTS

Regional and Ecological Distribution

Table 1 presents student enrollment and campus counts by province for 2023/24. Bagmati Province accounts for 44.04 percent of enrollment and 43.58 percent of campuses, more than ten times the corresponding shares in Karnali Province (4.01 percent of students, 4.05 percent of campuses).

Table 1. Enrollment and campuses by province, 2023/24

Province	Students	Share of Students (%)	Campuses	Share of Campuses (%)
Bagmati	278,811	44.04	624	43.58
Lumbini	90,271	14.26	200	13.97
Koshi	83,170	13.14	205	14.32
Madhesh	62,596	9.89	123	8.59
Sudurpashchim	48,627	7.68	94	6.56
Gandaki	44,186	6.98	128	8.94
Karnali	25,392	4.01	58	4.05
Total	633,053	100.00	1,432	100.00

Source: UGC EMIS Report on Higher Education 2023/24, Tables 2.5 and 3.10.

The ecological pattern shows a comparable concentration in the Hill belt, though the Hill belt includes major urban centers outside Bagmati as well as within it.

Table 2. Enrollment and campuses by ecological belt, 2023/24

Ecological Belt	Students	Share (%)	Campuses	Share (%)
Hill	351,181	55.47	844	58.94
Tarai	265,651	41.96	517	36.10
Mountain	16,221	2.56	71	4.96
Total	633,053	100.00	1,432	100.00

Source: UGC EMIS Report on Higher Education 2023/24, Tables 2.9 and 3.3.

Institutional concentration compounds provincial concentration: Tribhuvan University alone enrolls 491,299 students (77.61 percent of the national total) through 1,115 campuses (77.86 percent of all campuses), and received NPR 12,265 million of the NPR 17,457 million (70.3 percent) in total government financing to universities and boards in 2023/24.

Gender Parity Index and Gross Enrollment Ratio

Table 3. National GER and GPI, 2023/24

Indicator	Male	Female	Total
Enrollment	274,913	358,140	633,053
Population aged 18–22	1,544,855	1,455,843	3,000,698
GER (%)	17.8	24.6	22.0
GPI	—	—	1.3

Source: UGC EMIS Report on Higher Education 2023/24, Table 4.1 and Section 7.

A GPI of 1.3 and a higher female GER indicate that, in aggregate, a larger share of the female 18–22 age cohort is enrolled in higher education than the equivalent male cohort. This aggregate parity, however, does not hold uniformly across academic level or faculty, as shown below.

Gender Distribution by Academic Level: The Leaky Pipeline

Table 4. Enrollment by academic level and gender, 2023/24

Level	Male	Female	Total	Female Share (%)
Bachelor's	240,474	326,864	567,338	57.61
Master's	32,335	30,714	63,049	48.71
MPhil	775	224	999	22.42
PGD	147	84	231	36.36
PhD	1,182	254	1,436	17.69
Total	274,913	358,140	633,053	56.58

Source: UGC EMIS Report on Higher Education 2023/24, Table 3.5.

The female share of enrollment falls steadily from 57.6 percent at the bachelor's level to 48.7 percent at the master's level, 22.4 percent at the MPhil level, and 17.7 percent at the PhD level — a pattern consistent with the 'leaky pipeline' framework (Blickenstaff, 2005), even though women are the numerical majority of all students when aggregated across levels, because 89.6 percent of all students are enrolled at the bachelor's level.

Gender Distribution by Faculty

Table 5. Female share of enrollment in selected faculties, 2023/24

Faculty	Total Students	Female Share (%)
Education	139,417	71.89
Medicine	31,288	59.47
Management	282,836	57.54
HSS	72,682	53.68
Agriculture	5,620	44.80
Forestry	1,719	45.38

Faculty	Total Students	Female Share (%)
Law	19,768	42.80
S&T	43,886	39.17
Buddhist Studies	487	34.09
Engineering	33,474	24.40
Sanskrit	1,876	14.50

Source: UGC EMIS Report on Higher Education 2023/24, Table 3.4.

Technical faculties (Agriculture, Engineering, Forestry, Medicine, and Science & Technology) together enroll 115,987 students, of whom 40.75 percent are female, compared with 60.13 percent female among the 517,066 students in non-technical faculties. Engineering and Sanskrit show the narrowest female participation, while Education, Medicine, and Management show female majorities.

Campus Type and Gender

Table 6. Enrollment by campus type and gender, 2023/24

Campus Type	Male	Female	Total	Female Share (%)	Share of Total (%)
Constituent	115,774	122,076	237,850	51.33	37.57
Community	67,440	136,790	204,230	66.98	32.26
Private	91,699	99,274	190,973	51.98	30.17
Total	274,913	358,140	633,053	56.58	100.00

Source: UGC EMIS Report on Higher Education 2023/24, Table 3.2.

Constituent campuses — those directly administered by universities and generally holding stronger reputational and resource standing — account for the largest single share of enrollment (37.57 percent) but comprise only 164 of Nepal's 1,432 campuses (11.45 percent), while private campuses, at 50.49 percent of all campuses, enroll a smaller share of students (30.17 percent), consistent with a pattern of many small private colleges alongside a smaller number of large constituent campuses.

Caste-Based Disparities (Contextual Evidence)

The EMIS report does not itself disaggregate enrollment by caste, so this dimension draws on independent research. Gandhari (2021) and Bishwakarma (2011) both document substantial underrepresentation of Dalit students in Nepalese higher education relative to their population share of over 13 percent, attributing this to caste-based discrimination, poverty, and limited parental educational attainment operating cumulatively from the primary level onward. Earlier survey-based estimates compiled by the International Dalit Solidarity Network put overall higher-education enrollment at roughly 17.6 percent of the relevant

population versus about 3.8 percent for Dalits, and Bennett, Dahal, and Govindasamy (2008) document comparable caste-based gaps using Demographic and Health Survey data; more recent 2025 census-linked reporting placed the share of Dalits with a completed bachelor's degree or higher at roughly 1.6 percent nationally. Because these estimates come from different surveys, sample frames, and years, they should be read as consistent evidence of a large and persistent gap rather than as a single precise, current figure.

DISCUSSION

Three findings stand out. First, regional concentration in Nepalese higher education is structural rather than incidental: Bagmati Province's roughly 44 percent share of both enrollment and campuses, and Tribhuvan University's 77.6 percent share of national enrollment, reflect a century of institutional development centered on the Kathmandu Valley rather than a recent or reversible imbalance. Second, gender parity in Nepalese higher education is real but partial: it holds at the aggregate and bachelor's level and even favors women in the GER but narrows sharply at master's level and essentially reverses at the MPhil and PhD levels and remains narrow in specific technical faculties such as Engineering and Sanskrit. This is consistent with the international 'leaky pipeline' literature (Blickenstaff, 2005), suggesting that policy attention needs to shift from undergraduate access, where parity is largely achieved, toward graduate-level retention and technical-field participation. Third, the caste dimension, while not captured in the EMIS enrollment statistics themselves, is documented consistently across multiple independent sources over more than a decade, suggesting that regional and gender equity gains have not been matched by equivalent progress on caste-based exclusion.

CONCLUSION

Nepal's higher education system has grown rapidly and has achieved aggregate gender parity, but this study's analysis of the UGC EMIS Report 2023/24 shows that substantial regional concentration (particularly in Bagmati Province and Tribhuvan University) and a pronounced gender "leaky pipeline" at graduate levels and in technical faculties persist. Based on these findings, this study recommends: (1) targeted expansion of constituent-campus capacity and postgraduate program offerings in Karnali, Sudurpashchim, and the Mountain belt; (2) graduate-level scholarship and mentorship programs specifically

aimed at retaining women through master's, MPhil, and PhD study, particularly in Engineering and other technical faculties; (3) integration of caste and ethnicity variables into the UGC's EMIS data collection instrument, to allow the same rigor currently applied to regional and gender analysis to be applied to caste-based disparities; and (4) continued annual publication and provincial-level dissemination of EMIS data to support evidence-based monitoring by federal and provincial education authorities.

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