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Abstract

The higher education sector in India has experienced an unprecedented expansion in the recent decades. It is thus necessary to address the following question: How have the benefits accruing from the massive expansion in higher education been shared among different social groups? Based on empirical evidence, this paper argues that while access to higher education has improved across all segments of the population thanks to progressive state policies of affirmative actions, the rate of progression has varied, resulting in widening of regional inequalities and persisting socio-economic inequalities. Furthermore, access to elite institutions and study programmes such as in the fields of science and engineering is restricted to those from the most privileged backgrounds. The prevalence of inter-group inequalities in access to opportunities for pursuing higher education, in turn, determines employment outcomes, earnings, and social inequalities among the subsequent generations. Achievements in ensuring equity in access are further over-shadowed by the unfavourable conditions associated with the academic progress and success experienced by students from the disadvantaged groups inside the higher education institutions and campuses. The prevalence of a non-inclusive campus culture and the relative ineffectiveness of institutional mechanisms to address diversity result in inconsistent performances, and poor academic achievement and labour market outcomes for students from the disadvantaged groups. It is argued that favourable public policies and institutional strategies can help equalise opportunities for pursuing higher education and promote equity in student learning and labour market outcomes. What is emphasised at the institutional level is the need for devising strategies to address diversity and consequently develop socially inclusive higher education campuses in India.

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Introduction

The idea of inclusive growth is based on the notion of equality of opportunity. Equality of opportunity demands that deserving students from all social groups are provided sufficient opportunities for self-development. The main bases of exclusion in India are region, religion, caste, gender, economic disparities, and disabilities. Therefore, strategies for achieving inclusive growth necessarily need to include affirmative policies targeting the socially disadvantaged, and marginalised, economically poor, and people with disabilities. The progress made in any society needs to be assessed on the basis of the distribution of benefits among different social groups for assessing the inclusiveness of growth and development.

India has made considerable progress in reducing poverty and improving the quality of life for its people. The economic and social indicators of development in India have shown substantial improvement. There has been an increase in the per capita income levels and life expectancy, and a decline in the share of people below the poverty line, fertility rates, and infant mortality rates. Education has been one of the instrumental interventions for improving access to participation in economic activities and the social well-being of the people. Access to education has improved at all levels and most children born in this century are enrolled in schools. Ironically, however, these commendable achievements are accompanied by widening income inequalities and persisting social inequalities.

This paper analyses the issues related to equity in development of higher education. The main line of argument in the paper is as follows: While access to higher education has improved across all segments of the population, the disadvantaged groups continue to lag behind in their access to core study programmes such as Science, Technology, Engineering and Mathematics. Further, achievements in equity in access are overshadowed by the unfavourable conditions of progress and success faced by students from the disadvantaged groups inside the higher education institutions and campuses. The relative ineffectiveness of institutional mechanisms to address diversity and discrimination results in uneven performance and poor academic achievement among the students from the disadvantaged groups. This, in turn, leads to low learning outcomes and poor labour market outcomes, causing aberrations in inclusive growth.

The plan for the paper is as follows. The next section presents the concept and imperative of equity and inclusion in higher education, and its role in facilitating the creation of an equitable society. Section 3 examines the empirical evidence on expansion in access to higher education, and the persisting inequalities within

the context of massification. Section 4 identifies the determinants of access to higher education. Section 5 delineates the factors affecting equity in educational attainment by analysing learning and employment outcomes for students from the disadvantaged groups. The final section concludes the paper by highlighting the nature of emerging inequalities in the massified era, and the need for devising new strategies to ensure inclusive higher education campuses and promote educational attainment across student groups.

Equity and Inclusion in Higher Education

The turn of this century was characterised by growth in economies across the globe. However, it was less recognized that this positive economic growth was accompanied by widening economic and social inequalities. Studies have shown that human capital is the single most important factor contributing to faster economic growth (Engelbrecht, 2003). It can be argued that in the current context, the unequal distribution of opportunities for developing human capital can be an important source of inequalities. Therefore, promoting faster growth of higher education among the disadvantaged sections of the population is a necessary condition for ensuring equity in the future.

The expansion of the education system is expected to lead to greater inclusion as compared to a corresponding system that is not inclusive and not growing. For example, empirical evidence shows (Shavit, Arum and Gamoran, 2007) that expansion may be accompanied by widening inequalities when the benefits of expansion are shared by the rich. When expansion is accompanied by no change in inequality indicators, both the rich and the poor benefit; when expansion is accompanied by a reduction in inequality indicators, the poor benefit more than the rich. On the basis of these situations, it can be argued that in an unequal society such as India, there is need for a higher rate of progression for the disadvantaged classes in order to neutralise the existing inequalities in access to higher education. The policies to improve access need to focus on achieving an accelerated rate of growth of higher education for the disadvantaged groups.

Strategies focusing on equity in development are driven more by a commitment to democracy and social justice rather than by narrow economic objectives. Democratic societies are, in general, less tolerant to all forms of inequalities and the unequal provision of opportunities for facilitating progress in life. Further, the public good nature of knowledge (Samuelson, 1954; Stiglitz, 1999) and institutions producing knowledge demands progressive State policies and enhanced pubic investment in higher education. It would also be desirable for the State to fund the growing

demands of an expanding higher education sector. However, the fiscal constraints faced by the State may not permit it to allocate adequate funds to the sector.

The experience in many countries shows that when the higher education system catered mostly to the elite, offering limited access to the marginalised sections, State support was guaranteed and offering of subsidies was a common practice. When the system expanded and started admitting students from relatively poor and disadvantaged backgrounds, the financial burden of pursuing higher studies systematically shifted to the students and their households. This is reflected either in the privatisation of public institutions or the promotion of private higher education institutions (HEIs).

The access policy in higher education was dominated by three principles, namely, inherited merit, equality of rights, and equality of opportunity (Clancy and Goastellec, 2007). The concept of 'inherited merit' relates access to higher education to the circumstances of birth. Access to higher education was earlier mostly confined to the elite with inequalities persisting in the system. Thereafter, democratic principles and political compulsions started challenging the inherited merit approach to access to higher education. The idea of inherited merit was replaced by the notion of equality of rights (Goastellec, 2006), which reduced, if not eliminated, barriers to entry and promoted access to higher education for the disadvantaged groups.

The move towards equality of opportunity highlights the variations in the opportunity structure in any given society. This approach focuses not only on removing barriers to entry but also on widening the net to select talents from all social groups. Fairness and inclusion in access are the bases for ensuring equality of opportunity (Marginson, 2011). The concept of equity as fairness entails that access to higher education and achievement of one's educational potential are not influenced by group membership, that is, gender, socio-economic position, place of residence, or disability. Fairness is achieved only when the student composition in HEIs at each level of the hierarchy reflects the social diversity of the population.

The second dimension of equity in education relates to inclusion, which, as noted by Marginson, "moves beyond changing the terms of social competition (the objective of fairness policies) to focus on strengthening human agency of persons hitherto excluded". Marginson defines inclusion as the enhancement of human agency through "building aspirations, confidence and educational capabilities", with a focus on strategies that "facilitate democratic process of agent formation". Inclusion is achieved when "each advance in the participation of persons from

the under-represented groups is a move forward, regardless of whether the participation of the middle class is also advanced" (Marginson, 2011, pp. 27, 34, 35).

An expanding higher education system with high participation rates "by definition is more socially inclusive than elite higher education" (Marginson, 2016, p. 413) and is qualitatively different (Trow, 1973). However, the expanding higher education system also offers a stratified structure of opportunities, with hierarchy in institutional prestige and the field of study, which in turn, determines earnings and social outcomes. This paper provides an analysis of the levels of social participation and the nature of social inclusion in higher education in India, which is the second largest higher education sector in the world, with around 37.4 million students and a GER of 26.3 per cent (MHRD, 2019). Over the last few decades, higher education in India has seen a shift from the elite stage of development to a stage of massification (Varghese and Malik, 2016).

In operational terms, ensuring equality of opportunity may imply that merit-based admissions are supplemented with affirmative action measures to ensure equality of opportunity. The disadvantaged sections are provided additional incentives for pursuing higher education. The quota system in admissions and other incentives are based on the understanding that equal inputs need not always lead to equal outcomes in education. Students belonging to different socio-economic backgrounds may vary in their ability to compete and may find it difficult to compete with those from privileged backgrounds. The additional inputs are meant to equalise conditions to enable the disadvantaged to compete with their more advantaged counterparts.

Inequalities in higher education are influenced by inequalities in the preceding levels of education. In a country where basic and secondary education facilities are not equally distributed, it is very difficult to ensure equality of opportunity in higher education. Higher education is offered only to those who have completed the secondary level of education, and the existing inequalities in secondary education may be reflected in the higher education sector too. On the other hand, countries where secondary education is universal, as is the case in most of the developed countries, equity in access to higher education may be more easily achieved.

Many strategies devised to improve equity are common across countries. One of the most common strategies is relaxation of the admissions criteria and extension of financial support to students to allow them continue their studies. The quota system, as well as implementation of special incentive programmes for those admitted from the disadvantaged groups is example of this trend. For example, Brazil has affirmative measures in the form of a 'quota' system. In the United States and South Africa,

affirmative action takes the form of 'preferential boosts', which accord additional points to such candidates additional for boosting their scores and enabling them to compete for tough positions. In the United Kingdom (UK), the 'Ethnic Minorities Achievement Programme' is specifically targeted to tackle disparities in achievement and enhance the achievement levels of children from the minority ethnic groups. Schools are provided with additional financial and staff resources in order to mainstream the achievements of ethnic minorities into development plans and implement various concomitant projects (Bent, Rose and Tikly, 2012). Countries such as Australia, Mexico, and New Zealand have set up specialised institutions for selected disadvantaged groups. India follows a similar policy at the school level for students belonging to tribal groups.

India's policies concerning equity have been progressive and are in line with the democratic principles enshrined in the Constitution. For example, the quota system in admissions and job recruitment is a constitutional provision in India. Originally quota was made available for Scheduled Castes (SCs) and scheduled tribes (STs). Over a period of time, the quota system in admissions has encompassed other disadvantaged groups called Other Backward Classes (OBCs). The Supreme Court ruling increased the share of students to be admitted from disadvantaged groups to 49.5 per cent in all central universities and private (aided) and professional institutions, except minority institutions. The Supreme Court ruled that the reservations should not exceed 50 per cent of the total enrolment, though in some of the states such as Tamil Nadu and Karnataka the share of disadvantaged in admissions does exceed 50 per cent.

Inequalities in Access to Higher Education in India: Empirical Evidence

Equity has been an important concern in the expansion of higher education in India (Varghese, Sabharwal and Malish, 2018). The strategies followed in India include measures to reduce regional inequalities in the provision of institutions and infrastructure, reservation policies, relaxation in admission criteria, and financial support for the disadvantaged groups. Based on the data provided in the 52nd, 64th and 71st Rounds of the National Sample Survey Organisation (NSSO), the following paragraphs in the paper discuss the changes in the equity dimensions. The 71st Round refers to the period between January and July 2014, the 64th Round refers to the period between July 2007 and June 2008, and the 52nd Round of the NSS pertains to the period between July 1995 and June 1996. In addition, we have relied on other sources such as the All India Survey of Higher Education carried out by the Ministry of

Human Resource Development (MHRD). The discussions on equity in higher education consist of challenges relating to regional, social and gender inequalities.

Regional Inequalities in Higher Education

Regional inequalities in development are very common among most countries, particularly so in the higher education sector. Since HEIs have been traditionally established in urban areas, one may observe an urban bias in higher education development in India (Varghese, Panigrahi and Rohtagi, 2017). Although there is need for dispersed growth among universities and enhancement of research capacities for balanced regional development, the social demand for higher education in India has largely emanated from the urban areas. Since distances act as a constraint for many people, especially those belonging to the disadvantaged groups, an urban bias in the location of HEIs has reinforced the elite nature of higher education. Based on analysis of data from the NSSO (2014), Borooah (2017) shows that persons from rural areas attending higher education had to travel a longer distance (4.1 km) than urban students (3.7 km). This urban bias results in rural-urban disparities in access to higher education. For example, in 2014, access to higher education remained low in rural areas, at a GER of 24 per cent, as compared to urban areas, which had a corresponding GER of 44 per cent.

The international experience shows that the massification of higher education helps level off geographical inequalities in the distribution of higher education facilities. However, this has not happened in India primarily because the massification of higher education in India was led by the private sector. Private institutions in India are mostly established in the urban, sub-urban, and semi-urban areas where there is a market for higher education due to the presence of students with the capacity to pay the fees. This leads to polarisation of access to higher education and regional inequalities in the distribution of higher education opportunities.

The experience in India indicates that expansion of higher education in the country is accompanied by widening regional disparities. The disparities have widened because of varying rates of growth of HEIs among the states. It may be observed that states with a high concentration of private institutions also exhibit a higher density of HEIs. Table 1, depicting the number of colleges per population of 100,000 shows that there are 28 colleges per population of 100,000 at the all-India level. The number of colleges per population of 100,000 varies from 7 in Bihar, 9 in Jharkhand, 9 in Delhi, and 10 in West Bengal to 55 in Puducherry, 50 in Karnataka, and 45 in Andhra Pradesh.

Table 1: Number of Colleges per 100,000 Population (18-23 Years)

S. No.	States/Union Territories	No. of Colleges	Colleges per 100,000 Population
		2015-16	2015-16
1	Andaman & Nicobar Islands	7	15
2	Andhra Pradesh	2532	45
3	Arunachal Pradesh	28	17
4	Assam	539	15
5	Bihar	744	7
6	Chandigarh	25	14
7	Chhattisgarh	706	23
8	Dadra & Nagar Haveli	8	13
9	Daman & Diu	8	15
10	Delhi	191	9
11	Goa	55	32
12	Gujarat	2019	28
13	Haryana	1113	35
14	Himachal Pradesh	348	47
15	Jammu & Kashmir (erstwhile)	329	25
16	Jharkhand	328	9
17	Karnataka	3555	50
18	Kerala	1302	43
19	Lakshadweep	0	0
20	Madhya Pradesh	2260	26
21	Maharashtra	4569	34
22	Manipur	87	30
23	Meghalaya	63	18
24	Mizoram	29	22
25	Nagaland	65	26
26	Odisha	1076	23
27	Puducherry	84	55
28	Punjab	1050	32
29	Rajasthan	3050	35
30	Sikkim	16	20
31	Tamil Nadu	2368	32
32	Telangana	2454	60
33	Tripura	51	12
34	Uttar Pradesh	6491	26
35	Uttarakhand	439	36
36	West Bengal	1082	10
All India		**39071**	**28**

Source: MHRD, 2016

While all the states have improved their GERs in higher education, there have been wide variations in this improvement, with the GER increasing threefold in states such as Andhra Pradesh and Tamil Nadu, and doubling in many major states, whereas the increase has been relatively lower in states such as West Bengal. This skewed increase has led to a widening of inter-state disparities in enrolment in higher education. For instance, in 2002-03, the GER varied from a low of 4.33 per cent in Nagaland to a high of 28.7 per cent in Chandigarh; in 2016, the variation in GER ranged from 5.7 per cent in Daman and Diu to 57.6 per cent in Chandigarh. These figures indicate that the variations in GER between the highest and lowest states increased from 23.7 percentage points in 2002-03 to 52 percentage points in 2015-16 (Varghese, Panigrahi and Rohatgi, 2017).

Social Inequalities: Caste, Religion, Class and Gender

Social inequalities continue to persist in the context of the expansion and massification of higher education in India. Unlike regional inequalities, social inequalities in access to higher education have not widened, though they continue to be high. The analysis in this section is based on data from the 71st Round of the NSSO) (for the period January-July 2014), the 64th Round (for the period July-2007-June 2008), and, the 52nd Round of the NSSO (for the period July 1995-June 1996).[1]

The NSSO data allows us to calculate the Gross Enrolment Ratio (GER) in higher education for the age group of 18-23 years. The GER, which is an important measure for assessing the general level of participation in education, has been calculated as the total enrolment in higher education, regardless of age, expressed as a percentage to the eligible official population (18-23 years) in a given education year. Table 2 delineates the GER for gender, by social groups and by expenditure classes.

Table 2 shows that the GER increased dramatically in the 19 years between the 52nd and 71st NSSO Rounds, from 8.8 per cent to 30.06 per cent and from 17.8 per cent to 30.06 per cent between the 64th and 71st Rounds, with all the groups experiencing a considerable rise in their respective GERs. The higher education GER for STs and SCs rose from 3.42 and 4.84 in 1995 to 17.19 and 22.31 in 2014, respectively. Interestingly, between 1995 and 2014, the increase of 21 percentage points in the aggregate GER was accompanied with an increase in the number of universities in India with the post-1990s being classified as a period of expansion of higher education.

[1] All the results reported in this study are derived from the grossing up of survey data using the observation-specific weights provided by the NSS for each of the surveys. The GER and other indicators provided in this section may be at variance with what was discussed in the previous section since the data sources for the two are different.

The number of universities increased from 177 in the early 1990s[2] to 803 in 2015. Of the 803 universities in 2017, 47 were central universities, 365 were state universities, 122 were 'deemed' universities, and 269 were private universities.[3] As regards the increase in the number of colleges, in the early 1990s there were 5748 colleges, which increased to 38,498 colleges in 2014-15 (MHRD, 2016), with the largest growth being witnessed in the number of private unaided colleges (Varghese, 2015). Although expansion of higher education in India has led to an improvement in participation rates in higher education, inequality in access to higher education with regard to parameters such as socio-economic class, gender, region, and location, which were seen in 1995, also persisted in 2014. The pattern of these persistent persisting inter-group disparities across the dimensions of castes, classes, gender, and location is evident from the data presented in Table 2a.

Social Group Inequalities

In terms of disparities across social groups, the data in Table 2a shows that the origin of an individual's social group belonging[4] has a strong influence on access to higher education. For example, the GER of the higher castes was nearly twice that of the socially excluded groups such as the Scheduled Tribes (STs) and 1.5 times that of the Scheduled Castes (SCs). As one moves up in the caste hierarchy from the low castes to the middle- and upper castes, the GER also moves up, providing evidence of graded access to the resources needed for entering higher education, with fewer resources being available at the lower level as compared to the higher levels in the caste hierarchy. Another dimension of the disparities concerns religious groups in terms of their access to and enrolment in higher education. The GER was the lowest for Muslims, at 16.54 per cent, compared to a corresponding figure of 42 per cent for other minorities like Christians, Sikhs and Jains, and 32 per cent for Hindus.

Furthermore, when social and geographical disadvantages intersect, it results in inequalities in access to higher education opportunities. The need to commute long distances to reach HEIs also places an economic burden on students from the disadvantaged groups seeking access to of higher education opportunities.

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2 http://planningcommission.nic.in/plans/planrel/fiveyr/8th/vol2/8v2ch11.htm

3 See the University Grant Commission's list of universities in India, 2017 http://www.ugc.ac.in/oldpdf/Total%20list.pdf

4 According to the official classification, Hindu population is classified into four social group categories--upper castes, Other Backward Castes (OBCs), Scheduled Castes (SCs), and Scheduled Tribes (STs). While the upper castes occupy the top of the social hierarchy, OBCs are middle level castes placed below the upper castes. The SCs or the erstwhile 'untouchable' castes are placed at the bottom of the caste hierarchy and have historically suffered from exclusion in social and economic life. The STs are aboriginal ethnic groups.

For example, students from the socially excluded groups such as STs from rural areas had a GER that was one-fourth that of the higher-caste urban students (NSSO, 2014b). Many factors cumulatively lead to disadvantages for SC and ST students in accessing opportunities for higher education, including, hailing from low socio-economic backgrounds, being first-generation learners, and, residing in rural areas that suffer from poor learning infrastructure.

Income Inequalities

Apart from social and religious group disparities, inequalities in access to higher education are also seen by income levels. For example, in 2014, the GER for the top quintile was seven times higher than that for the lowest monthly per capita expenditure quintile (0-20 per cent), with the enrolment ratio being the lowest for the relatively poor vis-à-vis the rich, and with access to higher education progressively increasing in every quintile (Table 2a). The data thus indicates that economic status continues to have a significant bearing on the likelihood of gaining access to higher education.

Gender Inequalities

Another form of inequality reflected in access to higher education is by gender with the inequalities being compounded when gender intersects with social belonging. At the national level, access to higher education still favours men with a gender parity index of 0.86. Women among the lower-caste group suffer more acutely in terms of access to higher education vis-à-vis women from the higher castes. For instance in 2014, as against the overall average of 27.73 per cent for women, the GER was 13.05 per cent among the ST women followed by 18.17 per cent among the SC women, 23.11 per cent for OBC women, and 35.39 per cent for the non-SC/ST/OBC women. Thus, the GER of higher-caste women was almost three times that of ST women. Similarly, the GER of higher-caste women was twice that of SC women (Table 2b).

Table 2a: Gross Enrolment Ratio (GER) by Social and Income Groups: 1995, 2007, 2014

Categories	1995	2007	2014
Gender			
Male	10.78	18.76	32.14
Female	6.76	14.72	27.73
Social Groups			
ST	3.43	7.22	17.19
SC	4.84	11.35	22.31
OBC	NA	14.57	29.36
Others (Higher Castes)	NA	26.22	41.65
Others+OBC	10.53	19.44	34.13
Religion			
Hindu	NA	17.85	31.97
Muslim	NA	9.35	16.54
ORM*	NA	22.12	42.02
Income Quintiles			
0-20	1.06	3.99	9.89
20-40	2.39	6.97	18.31
40-60	4.73	10.03	26.64
60-80	9.39	18.53	41.55
80-100	29.91	47.56	73.79
Total	8.82	16.83	30.06
Locational			
Rural	4.2	11.1	24
Urban	18.2	30.3	44

**Other Religious Minorities*
Source: NSSO, 1995, 2007-08, 2014a

Table 2b: GER by Social Group and Gender, 2014

Social Group	Male	Female
ST	17.38	13.05
SC	21.94	18.17
OBC	29.64	23.11
Others	37.92	35.39

Source: NSSO, 2014a

Social Inequalities in Access to STEM Subjects and Elite Institutions

The discussion in the previous sections showed that while the access of the historically excluded groups to higher education has improved, regional inequalities have widened and social disparities persist. The poor, socially excluded groups including the SCs and STs, and those living in certain regions of the country have unequal access to higher education. Furthermore, it is important to analyse which spheres of higher education are accessible and to whom, even when access to education appears to be extensive.

One of the noticeable trends is also the process of segmentation of social groups in the selected fields of study and social inequalities in access to elite HEIs. The social segmentation pertaining to the field of study is reflected in the concentration of certain social groups in selected disciplines, which acts as a constraint in achieving equity. Inequalities in access and social exclusion in institutions placed at a high level in the hierarchy of the education system also lead to social inequalities.

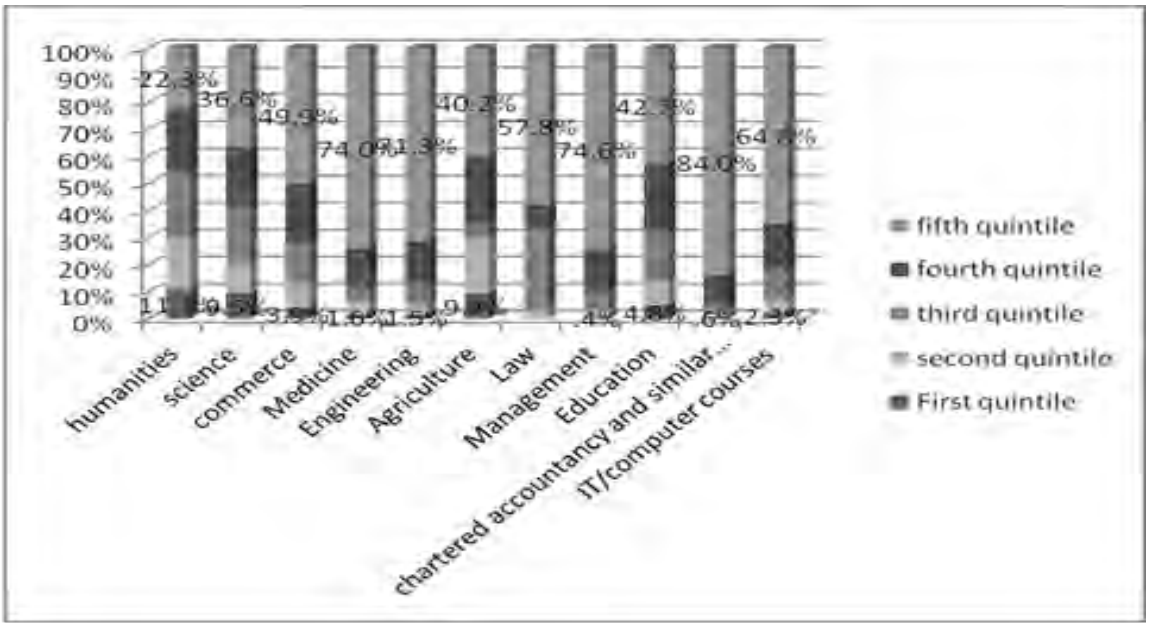
The manifestation of social inequalities in educational opportunities is evident in the under-representation of the socio-economically disadvantaged learners in various fields of study, and, particularly in the social and gender divide in education. Data in Table 3 clearly shows this pattern of unequal access to opportunities for higher education by social class, gender, and the students' locational backgrounds. Women remain under-represented in certain fields, such as STEM subjects like sciences, technology, engineering, management and chartered accountancy and over-represented in other subject areas such as medicine and education. For example, in 2014, the number of men studying engineering was three times that of the number of women, while the number of women enrolled in the field of education was twice that of men (Table 3).

Table 3: Subjects being studied by Students as per Social Groups, Gender and Location, 2014 (%)

Subjects Being Studied	Social Groups				Gender		Location	
	Scheduled Tribes	Scheduled Castes	Other Backward Classes	Others	Male	Female	Rural	Urban
Humanities	8.9	20.3	38.1	32.6	51.4	48.6	70.9	29.1
Science	6.5	12.8	48.7	32.0	59.0	41.0	57.9	42.1
Commerce	5.7	13.5	37.8	43.1	57.3	42.7	42.7	57.3
Medicine	4.5	11.2	40.3	44.0	33.9	66.1	43.5	56.5
Engineering	2.7	9.9	47.6	39.7	74.4	25.6	32.9	67.1
Agriculture	11.6	20.9	37.7	29.7	62.8	37.2	53.7	46.3
Law	5.1	13.3	37.0	44.6	59.9	40.1	41.9	58.1
Management	1.9	8.6	39.9	49.6	58.9	41.1	28.3	71.7
Education	5.8	18.9	43.1	32.1	32.0	68.0	59.0	41.0
Chartered accountancy and similar courses	2.1	3.6	21.3	72.9	60.8	39.2	14.5	85.5
IT/computer courses	4.5	10.9	37.0	47.5	59.2	40.8	40.2	59.8
Total	6.7	15.6	41.2	36.6	56.6	43.4	54.8	45.2

Source: Authors' own calculations from unit level data set of NSSO, 2014a

Figure 1: Subjects Being Studied by Students as per Their Economic Classes, 2014



Source: Prepared from unit level data sets of NSSO, 2014a

Similarly, the disadvantaged social and economic groups also suffer from inequality of access to the high-value fields of study, such as Science, Technology, Engineering and Mathematics. It has been found that STEM subjects are mostly being studied by the privileged students, including men, those belonging to the higher castes and higher economic classes, and those residing in urban areas, whereas students from the socially excluded groups and those residing in rural locations study subjects such as social sciences and agriculture. Similarly, in 2014, access to STEM subjects was lower for the poor than for the richer economic classes (Figure 1). The participation of students from the disadvantaged socio-economic groups in technical and professional courses such as engineering, medicine, and chartered accountancy is much smaller than their share in the population (Table 3). Moreover studies (Sabharwal and Malish, 2016) have also shown that socio-economically advantaged students are over-represented in elite/prestigious institutions whereas the less prestigious institutions primarily serve the under-privileged groups. This leads to ghettoisation of the student population, thereby impacting the level of student diversity in campuses. The campuses remain less diverse, offering limited opportunities to students for inter-group interactions and learning from diverse peers.

Determinants of Access to Higher Education and Fields of Study

The previous section highlighted inter-group disparities in access to higher education and fields of study by geographical characteristics (location and region), social, religious, economic classes, and between sexes, especially for women from the disadvantaged groups. Using the method of inequality decomposition, Borooah (2017) computed the proportionate contribution of social groups; gender; sector; and poverty status factors to inter-personal inequality in the probabilities of 18-22 year olds in India being in higher education. The study found that the largest contributor was social group and poverty, followed by location, with a very small contribution by gender. Various studies (Hurtado, 1994; McDonough, 1997) have shown that family attributes such as socio-economic background and the educational level of parents are positively related to students' access to higher levels of education; and that cultural capital and habitus (tastes/preferences), which are influenced by the students' socio-economic backgrounds, impact the college-related decision-making process for high school students.

In this section, we discuss the results of an econometric exercise on the determinants affecting the likelihood of access to higher education and the subjects

studied in India. The results in Table 4[5] indicate that access to higher education in India is influenced by different factors such as household income, social group, religion, means of livelihood, and region.[6]

In terms of social group, the marginal probabilities of the disadvantaged social groups, irrespective of their significance, were lower than those for the reference group of the higher castes. For the economic group, the bottom two expenditure classes, which is a proxy for income, were significantly less likely to be in higher education than their non-poor counterparts. The hierarchy by economic groups in access to higher education does not seem to have changed much over the years. In fact, the probability of accessing higher education for students from the poorest expenditure classes has declined between 1995 and 2014 (Table 4). Related to economic vulnerabilities, the predicted probability of individuals belonging to daily wage labour households accessing higher education was 6.3 per cent lower than that for regular salaried households.

The last two decades have also comprised a period of revival and massive expansion of higher education (Varghese, 2015). However, the declining probability of the poor classes accessing higher education opportunities during the stage of massification has larger implications of expansion of the system with equity, considering that the expansion during the stage of massification in India has been facilitated mostly a) through the private sector, b) through privatization of public institutions, and c) access mostly being financed by households. The lower probabilities of the poor accessing higher education opportunities vis-à-vis the rich indicate that the increasing costs of entry to higher education for many families may impede the achievement of goals of equity in higher educational attainment and fuel economic inequalities in the society.

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[5] Table 4 shows the marginal probabilities of enrolment in higher education. Marginal probabilities imply the change in the probability of enrolling in higher education consequent upon a unit change in the value of independent variables, keeping other variables constant. Marginal effects, calculated at the mean of all the variables from specifications of the probit model, are presented in Table 4 for two points of time, viz., 1995 and 2014.

[6] All the states and UTs are clubbed into *five* different regions, namely, north, north-east, west, east and south. The *northern* region comprises the erstwhile Jammu &Kashmir, Himachal Pradesh, Punjab, Chandigarh, Uttaranchal, Haryana, Delhi, and Uttar Pradesh. Madhya Pradesh, which is a central Indian state, has also been clubbed under the northern region. Therefore, there are altogether *nine* states/UTs in the northern region. The north-east region has *seven* states, namely, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, and Assam. The western region includes *five* states/UTs, including Gujarat, Maharashtra, Rajasthan, Daman & Diu, and Dadra &Nagar Haveli; while the eastern region comprises six states including Chhattisgarh, Bihar, Jharkhand, Odisha, Sikkim, and West Bengal. Finally, the southern region comprises *nine* states, namely, Andhra Pradesh, Karnataka, Telangana, Tamil Nadu, Goa, Pondicherry, Andaman & Nicobar Islands, Lakshadweep Islands, and Kerala.

The probability of accessing higher education in India is also significantly related to the state one resides in because the distribution of institutions of higher education is uneven among states, as has been analysed in the preceding section. The predicted probability of accessing higher education in the north-east was 23 per cent lower than that in the southern states. Certain studies (Varghese, Panigrahi and Rohatgi, 2017; Varghese, 2015) point to regional disparities in terms of the number of institutions, with southern states like Andhra Pradesh and Karnataka accounting for a considerably higher share of 37,862 institutions in India, at approximately 10 per cent of the total vis-à-vis the states in the north-east, that is, 0.2-0.3 per cent in Mizoram, Meghalaya, Manipur, Nagaland, and Tripura, respectively. It is now widely recognized that in today's knowledge based economy, a regions growth prospects depends to a large extent on the skills level of regional labour force. The unequal distribution of institutions across regions leads to polarisation of access to higher education, regional inequalities in the distribution of higher education opportunities, and overall unequal regional economic development.

In terms of access of women to higher education, however, the picture is positive. The positive signs of the marginal probabilities of participation in higher education for women indicate that women were at an advantage relative to men in 2014: the predicted probability of women participating in higher education was 2.3 per cent higher than that for the reference group of men. The expansion of secondary education, increase in the number of girls eligible for seeking admission to higher education, and once women cross the threshold of higher secondary education, contribute to an increase in their chances of participation in higher education. Similarly, the probability of participation in higher education by students residing in rural areas was 4 per cent higher than that for their urban counterparts, indicating that there has been an improvement in access to educational institutions in rural areas.

Table 4: Predicted Probabilities of Participation in Higher Education by Persons Aged 18-23 years, 1995 and 2014

Variables	NSS 71st Round (2014)		NSS 52nd Round (1995-96)	
Currently Enrolled in HE	**Coef.**	**dy/dx**	**Coef.**	**dy/dx**
Sex_Female	0.068*	0.023*	0.228***	0.020***
Rural	0.129***	0.043***	-0.093	-0.008
ST	-0.153**	-0.053**	0.430*	0.050*
SC	-0.089	-0.031	-0.010	-0.001
OBC	-0.002	-0.001		
q1	-0.525***	-0.195***	-0.428*	-0.026*
q2	-0.391***	-0.142***	-0.986***	-0.043***
q3	-0.171***	-0.060***	-0.558***	-0.034***
q4	-0.178***	-0.062***	-0.393***	-0.027***
Muslim	-0.220***	-0.078***		
North	-0.206***	-0.073***	0.316***	0.030***
East	-0.339***	-0.120***	0.221**	0.020**
North_East	-0.618***	-0.233***	-0.461**	-0.027**
West	-0.361***	-0.130***	0.267***	0.025***
Casual	-0.179**	-0.063**		
Self_Employed	0.035	0.012		
Constant	1.158***		-1.324***	
Log pseudolikelihood	-10602.511		-1701.2168	
Pseudo R2	0.0711		0.1037	
Number of obs	18783		8754	

Source: Authors' own calculations from NSSO (2014a)

Note: The classification of OBC and religion was not made during the 52nd Round NSS survey. dy/dx= marginal effect Notation for significance level: *** significant at 1 per cent level, ** significant at 5 per cent level,* significant at 10 per cent level.

However, the predicted probabilities of women studying STEM subjects, those residing in rural areas and in the north-east have declined over two decades (Table 5). For example, in comparison to the reference group of men, the likelihood of women studying STEM subjects declined between 1995 and 2014 (- 5 percent in 1995; -10 percent in 2014 respectively); compared to the reference group of students residing in urban areas, those from rural areas were less likely to study STEM subjects in 2014 as compared to 1995 (-2.8 per cent in 1995 to -4 per cent in 2014). Similarly, the predicted probability of studying STEM subjects of students from lower income groups was less than that for the higher income groups. In other words, the results show that the challenges faced by these groups in accessing the STEM subjects have increased over the years.

Moreover, the results show that it is less likely that STEM subjects are studied in Hindi or a regional language, and more likely that English is the medium of instruction. This becomes a disadvantage for students who have studied in Hindi or any regional language at the higher secondary level. A regional language being the medium of instruction poses a barrier to the writing of competitive examinations for higher studies. Furthermore, research (Sabharwal and Malish, 2016) has shown that family background and pre-college credentials affect the choice of subjects. Students from the disadvantaged socio-economic backgrounds and first-generation learners (who are more likely to be from government schools with a regional language as the medium of instruction) are most often tracked into less rigorous courses earlier in education, which then typically leads them to opt for less rigorous courses in higher education. This issue is discussed in detail later in the paper.

Significantly, the results show a lower likelihood of students studying STEM subjects in public institutions as compared to private institutions. The probability of students studying STEM subjects in government institutions vis-à-vis private institutions has declined over the years. For example, the results detailed in table 5 show, as compared to the reference group of private institutions, in 1995, the probability of studying STEM subjects was more likely to be in government institutions (+4.3 per cent). In 2014, however, the probability of studying STEM subjects in government institutions declined (- 11 per cent) in reference to the comparator group of private institutions. As stated earlier, the post-1990s period has been a phase of expansion, which has been led by the private sector and has been largely financed by the households. Most of the private higher education institutions were established to offer students the opportunity to study engineering and other STEM subjects.

The lower probability of students studying STEM subjects in government institutions vis-à-vis private institutions explains why students from the poor households have a lower probability of accessing STEM subjects vis-à-vis those from the rich households. Private institutions have contributed to the disciplinary divide across economic classes with access to the most selective programmes of study being restricted to those from the most privileged backgrounds. Thus, inequalities in access to prestigious programmes continue to reflect the inherited social privileges and contribute to the persistence of social inequalities. The exponential growth of institutions offering STEM subjects has also led to disciplinary distortions in the system (Varghese, 2015).

Table 5: Probability of Attending STEM Subjects: 1995, 2014

Variables	NSS 71st Round (2014)		NSS 52nd Round (1995-96)	
STEM	Coef.	dy/dx	Coef.	dy/dx
Sex_Female	-0.272***	-0.101***	-0.295***	-0.050***
Rural	-0.106***	-0.040***	-0.153**	-0.028**
ST	0.081	0.031	-0.424**	-0.061**
SC	0.020	0.007	0.083	0.016
OBC	0.223***	0.084***	-	-
q1	-0.133	-0.049	-0.665***	-0.084***
q2	-0.313***	-0.112***	-0.590***	-0.080***
q3	-0.166***	-0.061***	-0.533***	-0.078***
q4	-0.161***	-0.059***	-0.282***	-0.047***
Hindi	-1.186***	-0.400***	-0.751***	-0.125***
Regional language	-1.338***	-0.384***	-0.842***	-0.131***
North	0.525***	0.206***	0.109	0.021
East	0.000	0.000	-0.063	-0.011
North-east	-0.757***	-0.234***	-0.560***	-0.075***
West	-0.080	-0.030	0.049	0.009
Govt.	-0.307***	-0.114***	0.245**	0.043**
Constant	0.535***	-	-0.477***	-
Log pseudo-likelihood	-9875.0338		-3051.7671	
Pseudo R2	0.2148		0.1461	
Number of obs	18783		8755	

Source: Authors' own calculations from NSSO (2014a)
Note: The OBC classification was not made during the 52nd Round of the NSS survey. dy/dx = marginal effect; Notation for significance level: *** significant at a 1 per cent level, ** significant at a 5 per cent level,* significant at a 10 per cent level.

Our results show that despite the expansion of higher education, students from privileged backgrounds still maintain their relative advantage and have greater access to opportunities for social and economic mobility offered by higher education. The admission policies of institutions and social–cultural capital of the students determine access to elite HEIs. The admission policies of the institutions have a direct impact on differences in the level of representation of students from the disadvantaged groups. Elite institutions most often impose an additional screening stage in the form of selection tests for their prospective students. This results in skewed access in favour of students from privileged groups.

It needs to be emphasised that even when indicators of equality in access show positive signs, social inequalities continue to persist. This does not imply that the disadvantaged groups did not improve their access to higher education. In fact, the GERs of the students from the SC, ST, and OBC have categories increased over this period. Three factors may have contributed to this positive development. First, the prevalent reservation policies and quota system have put pressure on institutional managers to ensure participation from the disadvantaged groups.

Second, the success of Education for All (EFA) programmes has resulted in the availability of a larger number of student graduates from the secondary level who are eligible for pursuing higher education. For example, in 2016, nearly 38.82 million and 24.04 million students were enrolled in secondary education and higher secondary education, respectively, in India (Table 5a). Over the decade 2006 to 2016, the enrolment in secondary and higher secondary education increased by 50 per cent and 70 per cent, respectively. The average secondary education GER at the national level rose from 53 per cent in 2006 to 79 per cent in 2016, with increased enrolment in most of the states in India (Table 5b).

Table 5a: Enrolment (in millions) across Secondary and Higher Secondary Education by Social Group (All-India)

Level of Education/ Social Group	Secondary (9-10)			Higher Secondary (11-12)		
	2006-07					
	Boys	Girls	Total	Boys	Girls	Total
All Categories	14.93	10.97	25.90	8.06	5.98	14.04
SC	2.46	1.63	4.09	1.19	0.78	1.97
ST	0.99	0.68	1.67	0.46	0.27	0.73
	2016-17					
Social Group	**Boys**	**Girls**	**Total**	**Boys**	**Girls**	**Total**
General	5.57	5.02	10.58	4.10	3.66	7.76
SC	3.76	3.45	7.21	2.19	2.03	4.22
ST	1.68	1.59	3.28	0.86	0.80	1.66
OBC	9.37	8.38	17.75	5.63	5.13	10.76
Total	20.38	18.44	38.82	12.77	11.63	24.40

Source: U-DISE: Flash Statistics 2016-17;
MHRD Selected Educational Statistics 2006-07, Page nos - SE 14, SE 16, SE 24, SE 26, SE 34 and SE 36.

Most states achieved progress in secondary GER between 2006 and 2016, with the number of states whose secondary GER was higher than the national average increasing from 19 to 25 (panel 1). In other words, of the 36 states and Union Territories in India at the time, 25 states achieved a secondary GER of more than 79 per cent in 2016. Various factors have contributed to a high secondary education GER at the national level, including the adoption of a rights-based approach to education for all, a commitment to achieving universalisation of elementary education through implementation of the Sarva Shiksha Abhiyan (SSA), and efforts to develop and improve access to secondary education through the Rashtriya Madhyamik Shiksha Abhiyan programme of the Central Government (Tilak and Biswal, 2015).

There are disparities in the level of participation between the two stages of secondary and higher secondary education, with a significantly higher GER of 79 per cent observed at the secondary education level than that of 55 per cent observed at the higher secondary level. Nevertheless, there has been steady progress in the GER at the higher secondary level, which rose from 23 per cent in 2006 to 55 per cent in 2016—a substantial increase of more than 25 percentage points. A majority of the states in India too witnessed an increase in access to higher secondary level education between 2006 and 2016[7] (Table 5b).

[7] Among the large states, the most notable increase in access to higher secondary was observed in Punjab, Rajasthan, and Uttar Pradesh in northern India. In these states, the GERs at the higher secondary level rose by 41, 38, and 37 percentage points, respectively. Rajasthan and Uttar Pradesh, in fact, improved their positions, going up from a lower than average higher secondary GER in 2006 to a higher GER than the national average in 2016 (panel 1). Nonetheless, in 2016, participation in higher secondary education varied significantly across states, resulting in inter-state disparities in the GER at the higher secondary level. This GER Stood at 92 per cent, 84 per cent, and 79 per cent, respectively, in Himachal Pradesh, Tamil Nadu, and Kerala in 2016, as compared to corresponding figures of less 29 per cent and 37 per cent in Bihar and Jharkhand, respectively. These states have also recorded the lowest GER for secondary education (Table 5b).

Table 5b: GER by State across Levels of Education

State/UT	Secondary (9-10)		Higher Secondary (11-12)	
	2006-07	2016-17	2006-07	2016-17
Andaman & Nicobar Islands	89.71	84.05	28.65	72.79
Andhra Pradesh	58.70	76.30	40.80	60.56
Arunachal Pradesh	62.02	85.94	30.66	51.17
Assam	48.61	78.56	14.38	39.74
Bihar	24.42	76.71	11.19	28.82
Chandigarh	66.80	89.65	49.33	83.17
Chhattisgarh	44.29	87.65	23.04	54.45
Dadra & Nagar Haveli	52.81	91.16	22.58	51.76
Daman & Diu	86.25	73.26	54.45	34.61
Delhi	66.14	114.42	46.52	74.18
Goa	74.77	99.33	40.10	78.65
Gujarat	54.69	74.54	27.75	43.17
Haryana	56.35	86.34	35.62	60.78
Himachal Pradesh	96.06	103.86	62.06	91.97
Jammu &Kashmir (erstwhile)	43.15	61.65	27.47	52.91
Jharkhand	26.07	63.50	3.48	37.06
Karnataka	65.73	84.44	38.10	41.91
Kerala	92.93	99.36	51.80	79.37
Lakshadweep	51.24	102.26	38.20	97.87
Madhya Pradesh	52.95	80.15	31.02	47.12
Maharashtra	69.56	91.74	41.75	70.72
Manipur	76.45	86.52	24.50	64.36
Meghalaya	50.62	83.25	26.89	40.56
Mizoram	68.19	95.88	25.57	54.60
Nagaland	31.14	61.80	16.61	36.30
Odisha	52.74	79.91	30.56	40.09
Puducherry	105.18	87.51	54.62	74.19
Punjab	48.95	87.08	31.06	72.24
Rajasthan	48.61	76.63	22.26	60.31
Sikkim	42.67	111.96	24.65	64.22
Tamil Nadu	86.72	93.87	48.59	83.69

Source: U-DISE: Flash Statistics 2016-17 Table 5.12 Pages 272-277;
MHRD Selected Educational Statistics 2006-07, page SE 49.

Panel 1: Distribution of States by GER across Secondary and Higher Secondary Levels of Education in 2006 and 2016

Year/GER	Secondary Level of Education	Higher Secondary Level of Education
2006-07: States with GER **below** the national average	(16)—Sikkim, Jammu & Kashmir (erstwhile), Chhattisgarh, West Bengal, Uttar Pradesh, Rajasthan, Assam, Punjab, Meghalaya, Lakshadweep Islands, Odisha, Dadra & Nagar Haveli, Madhya Pradesh, Bihar, Jharkhand, Nagaland	(17) - Bihar, Jharkhand, Nagaland, Assam, Sikkim, Jammu and Kashmir, Chhattisgarh, West Bengal, Uttar Pradesh, Rajasthan, Meghalaya, Dadra & Nagar Haveli, Gujarat, Tripura, Mizoram, Andaman & Nicobar Islands, Manipur
2006-07:States with GER **above the** national average	(19)—Gujarat, Haryana, Tripura, Andhra Pradesh, Arunachal Pradesh, Karnataka, Delhi, Chandigarh, Mizoram, Maharashtra, Goa, Manipur, Uttarakhand, Daman & Diu, Tamil Nadu, Andaman & Nicobar Islands, Kerala, Himachal Pradesh, Puducherry	(18)— Goa, Andhra Pradesh, Maharashtra, Uttarakhand, Delhi, Chandigarh, Daman & Diu, Tamil Nadu, Kerala, Himachal Pradesh, Puducherry, Lakshadweep Islands, Karnataka, Haryana, Punjab, Madhya Pradesh, Odisha, Arunachal Pradesh
2016–17: States with GER **below the** national average	(11)— Bihar, Jharkhand, Nagaland, Assam, Jammu &Kashmir (erstwhile), Daman & Diu, Uttar Pradesh, West Bengal, Rajasthan, Gujarat, Andhra Pradesh	(18)— Bihar, Jharkhand, Nagaland, Assam, Daman & Diu, Mizoram, Chhattisgarh, Jammu &Kashmir (erstwhile), Dadra & Nagar Haveli, Arunachal Pradesh, West Bengal, Telangana, Madhya Pradesh, Gujarat, Tripura, Karnataka, Meghalaya, Odisha
2016 – 17: States with GER **above** the national average	(25)— Odisha, Chhattisgarh, Punjab, Meghalaya, Dadra & Nagar Haveli, Madhya Pradesh, Haryana, Arunachal Pradesh, Karnataka, Mizoram, Andaman & Nicobar Islands, Manipur, Goa, Maharashtra, Uttarakhand, Chandigarh, Tamil Nadu, Kerala, Puducherry, Telangana, Delhi, Tripura, Sikkim, Himachal Pradesh, Lakshadweep Islands	(18)— Himachal Pradesh, Lakshadweep Islands, Tamil Nadu, Chandigarh, Kerala, Goa, Uttarakhand, Sikkim, Uttar Pradesh, Rajasthan, Punjab, Haryana, Andaman & Nicobar Islands, Manipur, Andhra Pradesh, Maharashtra, Delhi, Puducherry

Source: MHRD 2007; 2017

In 2016, the participation of girls at both the secondary and higher secondary levels of education also improved. Table 5c shows that gender disparities were more prevalent in the year 2006-07 than in 2016, with a higher GER witnessed for boys at both the secondary and higher secondary levels of education in 2006. In 2016, however, the situation of boys worsened, with an increase in the GPI of secondary GER from 0.81 in 2006 to 1.02 in 2016, and from 0.83 to 1.02 for higher secondary GER,

indicating an increase in participation of girls at both the secondary and higher secondary levels of education.

Table 5c further indicates that inter-group disparities in GER at both the stages of secondary and higher secondary education declined for the SCs but persisted over time for the STs. The GERs at the secondary as well as the higher secondary levels were lower for the STs as compared to the overall average GERs in 2006 and in 2016. On a positive note, between 2006 and 2016, the SCs achieved substantial progress in the GER at the higher secondary level, which rose from 26 per cent in 2006 to 56 per cent in 2016—a significant increase of 30 percentage points (Table 5c).

Table 5c: GER across Secondary and Higher Secondary Education by Social Group (All- India)

Level of Education/ Social Group	Secondary (9-10)			Higher Secondary (11-12)		
	2006-07					
	Boys	Girls	Total	Boys	Girls	Total
STs	47.48	35.49	41.75	23.39	14.72	19.18
SCs	58.30	44.57	51.92	29.18	21.84	25.75
All Categories	58.57	47.44	53.27	31.53	26.09	28.96
	2016-17					
Social Group	Boys	Girls	Total	Boys	Girls	Total
STs	72.65	74.39	73.48	42.71	42.62	42.67
SCs	82.49	86.12	84.19	54.48	57.59	55.93
Total	78.51	80.29	79.35	54.93	55.91	55.40

Source: U-DISE: Flash Statistics 2016-17 Tables 5.12, 5.13, 5.14 Page no - 272-281;
MHRD Selected Educational Statistics 2006-07, Page no - SE 49, SE 52, SE 55.

The third important contributing factor for the attainment of higher GERs has been the incentive schemes, which, despite all their limitations, seem to have attracted students to pursue higher studies and refrain from dropping out once they have secured admission in institutions of higher education. The focus of public policies and institutional interventions needs to be on the progression of students in studies and social integration in campuses to ensure equity in achievement. A study by Henry and Ferry (2017) demonstrated how the social and cultural capital stock of students from various social groups impacts their relative chances of securing admission in the Indian Institutes of Technology (IITs), which are elite HEIs. Qualifying Joint Entrance Examination (JEE) alone does not ensure admission to the elite HEIs. Those who make realistic choices based on their JEE rankings have higher chances of getting admission in IITs even if their test scores are low. Therefore, well-informed students from

the privileged social groups have a comparative advantage as compared to their ill-informed peers from the disadvantaged social groups. This trend of differentiation, which continues even after the admission, is discussed in the following section.

Equity in Attainment: Factors Affecting Attainment

Widening access to higher education is a necessary pre-condition for achieving equity in higher education. However, access, though a necessary initial step, alone is not sufficient to achieve equity. Both the learning and employment outcomes depend on the creation of conducive conditions for studies and social interactions in institutions. The more important question confronting those already enrolled in institutions is the extent to which the institutions succeed in providing opportunities for diverse student groups to help them optimize their potential.

The Issue of Inclusion

The dynamics of contemporary campuses in India need to be located in the larger context of massification of the system. With the expansion of the system, a large number non-traditional learners are entering into HEIs, including students from the disadvantaged social groups, lower income groups, from rural areas, and those who studied in schools with regional languages as medium of instruction, especially government schools. It can be seen that a large share of students in HEIs comprises mostly first-generation higher education learners. This adds to the widening diversity of higher education campuses in India.

While the social distance between those who are inside and outside the higher education system is narrowing down, that among student groups enrolled in institutions of higher education is widening. This is an important characteristic of the massification stage in contrast to the elite stage in the development of higher education. It may also be observed that the currently disadvantaged social groups constitute a major share of those enrolled in higher education. In fact, in some institutions, their share is close to 70 per cent.

As reported in a large-scale study by Sabharwal and Malish (2016), increasing campus diversity leads to different forms of discrimination and is a major source of social tensions on campuses. This also leads to the reproduction of prevalent social values and associated practices like discrimination based on caste and ethnicity and gender stereotyping in campus life. It can be argued that caste and ethnic origins continue to impact the social and academic lives of students in higher education, with this impact lasting from the first day of the students' admission right until their from the HEIs.

In the recent context, discrimination exists in three major domains of campus life (Sabharwal and Malish, 2016), including academic space, social space, and administrative space. Discrimination also assumes direct and indirect forms, and exists at both the individual and institutional levels. As far as academic space is concerned, the discriminatory attitude of teachers is reflected in the treatment they mete out to students from the former 'untouchable' castes, often shunning them as 'unteachable' students. Many teachers believe that affirmative action has resulted in the deterioration of quality and standards in higher education. This is reflected in their attitude towards students from the disadvantaged groups both in the classrooms and outside.

In classroom transactions, students from the disadvantaged social groups face high levels of exclusion, and perceive that they are ignored in the class room. They are less likely to receive any encouragement from teachers to engage in academic activities that help them develop their learning skills and leadership qualities. An extensive field visit as part of the CPRHE study by Sabharwal and Malish (2016) shows that classrooms are becoming arenas of exclusion due to the widening of social distances between teachers, who mostly belong to high-caste groups, and students, who are largely from the low castes.

Discrimination in social space is reflected in the lack of participation from disadvantaged students in extra-curricular activities. It has been found that any particular activity in which there is higher whenever participation of the disadvantaged students is stigmatised. For instance, in campuses where a higher number of SC and ST students are active in the National Service Scheme (NSS), a caste stigma is attached to the NSS, thereby preventing participation from students belonging to other higher-caste groups. Ideally, campuses should be spaces that provide opportunities to students to live with and learn from their diverse peers. This is, in fact, an important dimension of the social purpose of higher education.

The formation of groups in campuses is determined by social group identity. Identity-based peer group formation is a dominant practice in many campuses, and leads to the ghettoisation of social groups. While the fear of discrimination and the comfort levels they aspire for are reasons for identity-based grouping for disadvantaged groups, preference for associating with the same or a similar peer group leads students from the privileged groups to remain in their own circles. This leads to reduced interactions with the other groups, and the decline of campuses as social spaces for the learning of democratic principles and respecting diversity.

The student–administration relationship is another area of discrimination. Discriminatory behaviour and the uncooperative attitude of the administrative staff increase the vulnerability of students in campus life. Rude behaviour from the administration, particularly against the SCs and STs, are reported from many campuses. Such behaviour also often assumes takes the form of shaming of the students through jokes and derogatory statements against reservation. The disadvantaged students also report that they are compelled to visit colleges more than once even for submitting their admission forms as compared to their advantaged peers, who are given preference in submissions during their very first visits. Further, the SC and ST students have to frequently visit the administrative offices in HEIs to find out about the disbursal of their stipends/scholarships. They do not even receive dignified responses to their queries on this issue, and are instead often subjected to insults. There is also a tendency among the staff to suppress information related to scholarships/stipends. As a result, the students from the marginalised classes lack awareness about their own entitlements with regard to scholarships and other benefits. This situation also indicates the lack of receptivity towards the SCs and STs.

In addition to the individual forms of discrimination in various domains, the institution as a system also perpetuates discrimination through its policies and practices. This form of discrimination is called institutional discrimination (Pincus, 1996). The insensitivity of institutional leaders on concerns related to the disadvantaged groups such as the ineffective implementation of schemes targeted at these students is an example of institutional discrimination. Non-functional and ineffective mechanisms for addressing discrimination are common features across institutions. Given the lack of knowledge about higher education among the socially disadvantaged groups and first-generation learners, it is crucial to organise orientation and induction programmes for the disadvantaged students during the early days of their admission. Paradoxically, however, the disadvantaged students are less likely to get invitations to attend such orientation programmes.

All these instances indicate that institutions are ill-equipped to adapt to the changing nature of student diversity in campuses of HEIs and in upholding the spirit of equity and inclusion in higher education. The institutional habitus of colleges and universities are largely elitist in nature and are less likely to be receptive to non-traditional learners (Malish, 2011; Malish and Ilavarasan, 2016). Thus, a long distance still needs to be traversed for developing socially inclusive campuses in India. In this context, institutions have a major role to play in the higher education system for achieving socially inclusive campuses in India (Sabharwal and Malish, 2017).

Equity in Outcome

Equity in outcome in higher education has two dimensions, viz. the attainment of -outcomes in terms of: (i) the grades and scores or successful completion of courses; and (ii) transition from educational institutions to the labour market. Equity can be fully realised only when those who enter the system are able to successfully complete their respective study programmes within the prescribed duration while also gaining access to decent employment commensurate with the academic degrees they have acquired. Further, institutional practices need to be sympathetic to these objectives for facilitating equity in development.

Successful Completion

Several studies have shown that a relatively higher proportion of dropouts from HEIs are students belonging to the disadvantaged social groups (Sivasankaran and Raveendran, 2004; Henry and Ferry, 2017; Sabharwal et al., 2014). The SCs and STs constitute a major share of those who drop out of the system. A recent study by Henry and Ferry (2017) reports that in elite engineering colleges like IITs, the drop-out rates for SCs, STs and students from the General category are 9.9 per cent, 7.7 per cent, and 2 per cent, respectively, indicating that the drop-out rates for SCs are five times higher than those for their counterparts from the General category. All these findings suggest that the lack of 'academic integration' among all categories of students is a major issue to be addressed (Tinto, 1975).

It is also true that various factors such as the lack of social inclusion, a comparative lack of academic preparedness, and the prevalence of a non-supportive institutional environment in HEIs adversely impacts the capacity of students from the disadvantaged social groups to integrate academically with their more privileged peers. More than being a mere academic issue, the problem of drop-outs is linked to the larger context of the social dynamics of education. In the context of school education, Reddy and Sinha (2010, p. 1) have argued that children do not simply drop out voluntarily but are "pushed out" of school due to multi-faceted social, economic, cultural, political, and pedagogical reasons. Empirical evidence points to the existence of a similar phenomenon in HEIs.

The medium of instruction and interactions is another fact that constrains academic integration among all categories of students. Since a major share of the disadvantaged, including first-generation higher education learners, are more likely to have studied in schools with regional languages as the medium of instruction, the transition to English as a medium of instruction in HEIs poses a major academic

challenge. A study by Borooah and Sabharwal (2017) sheds light on the relationship between the medium of instruction and unequal educational opportunities.

Table 6: The Medium of Instruction at the Level of Secondary Education, by Social Group, Gender, Poverty Status and Sector*

	71st Round of the NSS		
	English (%)	**Hindi (%)**	**Regional (%)**
Total	20.6	42.1	37.3
Social Group			
Scheduled Tribe	18.3	44.4	37.3
Scheduled Caste (excluding Muslims)	10.5	44.8	44.7
Non-Muslim OBCs	19.1	48.0	32.9
Muslim OBC (including SC Muslims)	19.7	42.8	37.5
Muslim Upper Class	26.4	24.0	49.6
Non-Muslim Upper Class	32.3	32.9	34.8
Gender			
Boys	22.5	41.8	35.7
Girls	18.4	42.4	39.2
Poverty Status			
Non-Poor	23.1	40.7	36.2
Poor	6.6	49.7	43.6
Location			
Rural	12.4	48.0	39.6
Urban	41.8	26.8	31.4

Source: Borooah and Sabharwal, 2017, page 14
Note: * Percentage of persons in each group with the medium of instruction being that language

Table 6 shows that across social, religious, and income groups, only two-fifths of the students are studying in English as the medium of instruction at the higher secondary level. The share of SCs and students from the rural areas who are studying in English is even lower. But nearly 50 per cent of the students are studying in English at the higher education level (see Table 7). Further, English is the medium of instruction for most professional courses in technical subjects and elite institutions. It is evident that as we move from the lower to higher ladders of education, English increasingly becomes the medium of instruction.

In addition to the disadvantages accruing from the usage of English in the classroom transactions, the lack of adequate learning material in regional languages also poses challenges in the academic lives of students from the disadvantaged groups. In fact, competency in the English language is more significant for learning

social sciences than the STEM subjects. Since much of the original texts in social sciences are in English, the lack of fluency in this language prevents students from reading and fully understanding the original texts, which, in turn, affects their competency in the subjects they are studying. A similar situation may be observed with regard to opportunities for using the Internet and audio resources.

Another related issue is the usage of outdated pedagogical practices in higher education. Although many of the HEIs have been brought under the ambit of a Choice Based Credit System (CBCS) and the semester system, a large part of the classroom practices have remained unchanged as they have failed to keep pace with the changes being brought about in the education system, in general. Teachers continue to follow the pedagogical practices in use for the annual examination system rather than the CBCS. The spirit of continuous evaluation is thus not internalised or reflected in classrooms. It can be argued that the vital relationship between the educational curriculum, and its transaction and evaluation is not adequately acknowledged. The evaluation pattern is changing but the nature of classroom transactions remains the same. This may be partly due to the lack of adequate teaching staff in institutions and the consequent higher student–teacher ratio and lack of adequate training and professional development opportunities for teachers.

The over-reliance on lecturing as a major method of teaching and comparatively lower focus on collective and peer learning is not helpful for students from diverse backgrounds. The prevailing forms of discrimination in campuses also contribute to the academic vulnerability of students from the disadvantaged social groups. Since the pace of classroom transaction is always in tune with the learning pace of the most competent students in the class, the learning requirements of first-generation students who achieve lower academic scores are not adequately taken into account.

The erstwhile tutorial system and work hours in the library, which have been found to be more effective strategies for promoting learning among students with lower academic preparedness, are steadily disappearing from the educational system. Remediation programmes are also not effectively implemented in colleges and universities, and have failed to become an institutional priority. The opportunities provided by new technologies, which are more rewarding for student learning, are not being optimally used. However, instead of constructively addressing these new challenges through the introduction of innovative pedagogical methods and classroom transactions, members of the teaching community and institutional leaders criticise the inadequacies of the schooling system and the policy of improving conditions of access for the disadvantaged (Sabharwal and Malish, 2016).

The cumulative effect of non-supportive social interactions and learning environments in campuses substantially impacts the academic achievement of students, who are unable to cope with the demands of higher education. They either fail their initial examinations or attain poor scores. Since the basics of the study programmes are introduced during the early semesters, these poor outcomes severely impact their further learning. When they enter into the next semester or year, managing back papers or academic arrears along with papers in the current semester/year becomes a major challenge for students. The process of accumulating back papers impacts not only their careers but also their mental health or what psychiatrists call the 'back paper syndrome', often leading to suicidal tendencies (Rajagopal, 2012). They consequently end up scoring low grades/marks or fail to complete the courses they are enrolled in.

Table 7: The Medium of Instruction in Higher Education, by Social Group, Gender, Poverty Status and Sector*

	71st Round		
	English (%)	**Hindi (%)**	**Regional (%)**
Total	49.4	34.4	16.2
Social Group			
Scheduled Tribe	40.8	34.9	24.3
Scheduled Caste (excluding Muslims)	34.3	43.9	21.8
Non-Muslim OBC	50.6	36.1	13.3
Muslim OBC (including SC Muslims)	47.6	36.5	16.0
Muslim Upper Class	59.7	22.1	18.2
Non-Muslim Upper Class	55.0	29.6	15.4
Gender			
Boys	50.3	33.9	15.8
Girls	48.2	35.0	16.7
Poverty Status			
Non-Poor	50.9	33.2	15.9
Poor	27.5	52.2	20.3
Location			
Rural	35.0	44.6	20.4
Urban	66.9	22.1	11.0

Source: Borooah and Sabharwal, 2017, page 16
Note: *Percentage of persons in each group with the medium of instruction being that language.

As far as higher education outcomes are concerned, the rate of completion of the course is one of the important indicators. There are two indicators for measuring completion rates, namely, the graduation rate, and the pass percentage. The graduation rates or completion rates are calculated as a percentage of the students who earn a degree. Graduation rates are also considered among the measures of productivity in higher education. In USA, for a four-year under-graduate programme, the graduation rates are measured as a percentage of the students who earn degrees within six years after enrolling in the under-graduate programme (Doyle, 2010). Evidence in India suggests that social hierarchies are translated into academic hierarchies as the exit grade is taken into account (Henry and Ferry, 2017).

The fact that we have limited data on graduation rates is an issue of concern. In the absence of data on graduation rates, placement data is considered as one of the proxy measures for assessing the productivity of institutions. It also serves as a marketing strategy for attracting students. In fact, the placement data provided by institutions, particularly private institutions, is misleading. Institutions claiming 100 per cent campus placement actually suggest that 100 per cent of the eligible candidates are offered jobs but this is not true of all those who enrolled in college. There is considerable exclusion to define the 'eligible' category, and the excluded are more likely to be from disadvantaged backgrounds.

Employment Outcome

The transition to a labour market and seeking access to decent jobs is another dimension of equity in outcome. Empirical evidence suggests that the rate of educated unemployment is substantially higher among the disadvantaged social groups (see Table 8). Disparity in the rate of unemployment is more visible among people who have acquired a post-secondary level of education. For instance, for the category of those who have acquired education up to the post-graduate and above level, the unemployment rate for SCs is double that of students from the General category. This needs to be assessed along with the high wage differentials between secondary school graduates and tertiary education graduates (see Table 9). It may also be argued that attaining a tertiary degree does not guarantee equal incomes for graduates from all social groups.

Table 8: Unemployment Rates among Social Groups (Rural and Urban)

Social Group	Not Literate	Literate up to the Primary level	Middle Level	Secondary Level	Higher Secondary Level	Diploma/ Certificate	Graduate	Post-graduate and above
STs	0.1	0.4	1.8	6.2	6.4	5.5	8.9	8.9
SCs	0.3	1.6	2.5	2.6	5.0	12	10.5	13.1
OBCs	0.4	0.8	2.1	2.7	4.0	10	8.2	8.3
Others	0.4	1.4	2	2.2	4.5	4.7	6.4	6.1
All	0.4	1.1	2	2.7	4.4	8.1	7.6	7.5

Source: Based on NSSO, 2014b (NSS 68th Round)

Table 9: Wage Differentials by Levels of Education

Level of Schooling	1983	1993-34	2004-05	2011-12
Not literate	1.0	1.0	1.0	1.0
Up to the primary level	1.4	1.3	1.3	1.1
Up to the middle level	1.5	1.4	1.3	1.3
Up to the secondary and higher secondary levels	2.3	2.1	2.3	2.1
Tertiary level	3.7	3.6	4.6	4.1

Source: Madheswaran and Singhari, 2018

Since public sector jobs in India are shrinking and jobs in the private sector are increasing (Mazumdar and Sarkar, 2008; Kapila, 2008), the private sector is a major source of employment for higher education graduates. Unlike the public sector, social protection policies like reservation are relatively absent in the private sector. Studies have also shown the existence of labour market discrimination in the private sector in India (Thorat and Attewell 2007; Upadhya, 2007). Based on a correspondence study Thorat and Attewell (2007) argue that even if they have equal credentials as those of others, SCs and Muslim candidates have fewer chances of getting interview calls from the private corporate sector. This also highlights the existence of a deep-rooted structure of social discrimination in the country.

Upadhya (2007) avers that candidates from the disadvantaged groups are systemically excluded from the process of interviews by the Human Resource divisions of companies in India in the much-celebrated information industry sector. Many of the personal attributes that are valued in the recruiting process are embodied in cultural capital accumulation, which is heavily influenced by the social locations of individuals (Malish and Ilavarasan, 2011). Even when one of

the disadvantaged students succeeds in the technical interview that assesses the technical competency of the candidates, the lack of middle class cultural capital becomes a hurdle in such interviews. As demonstrated by Henry and Ferry (2017), in the IITs, even with a similar Cumulative Performance Indicator (CPI) level, the SC, ST and OBC students have a lower predicted probability of securing jobs through placement cells than their counterparts from the General category. All these facts point towards a persistent exclusionary mechanism for graduates belonging to the disadvantaged groups.

The empirical evidence and discussions examined in this paper clearly indicate the prevalence of social group disparities among students in terms of retention, and learning and labour market outcomes. The factors that engender low levels of attainment in higher education include under-preparedness at the school level, English being the medium of instruction, and the lack of institutional support for academic integration and for creating a conducive learning environment. It is thus evident that HEIs are not yet adequately equipped to address multifarious issues related to student diversity for promoting inclusion and creating a positive learning environment. Given the fact that students from the disadvantaged social and income groups possess a lower stock of social and cultural capital, which is highly valued in the labour market, HEIs need to lay special emphasis on promoting both transferable and general competency skills among students along with their regular curricular studies.

Conclusion

Education or lack of it impacts the economic growth of nations, individual incomes, and the social well-being of all the citizens of a country. The attainment of education provides an opportunity for all to grow and improve their life chances. Given this crucial role of education, it is important to provide everybody an equal opportunity to pursue education. This paper argues that providing equal opportunities for accessing higher education is a necessary condition for achieving inclusive growth and a fair and inclusive society free from discrimination. However, ensuring equality of opportunities to everyone for pursuing higher education is a distant dream in India.

The development of higher education in India has progressed at a fast rate, leading to its massification. The expansion of the system has been accompanied by the widening of regional inequalities and persistence of social inequalities. Inequalities in opportunities of access to higher education continue to persist for poor students, and those from the socially excluded groups and from rural areas. The study shows

that regional inequalities have widened while social inequalities persist in access to higher education. However, the empirical evidence and analysis show that the indicator of equality in access has improved over a period of time for all groups including for those from the disadvantaged groups. The increase in the GERs of students from the SC, ST and OBC categories is a reflection of this positive achievement.

This paper asserts that public policies have helped in widening access to higher education for students from the disadvantaged classes. It can be argued that a strict implementation of reservation policies has helped enhance the participation of members of the disadvantaged groups in higher education. Similarly, the success of EFA programmes has resulted in the creation of a larger pool of secondary school graduates who are eligible for pursuing higher education. Various incentive schemes being offered by the Government have also attracted students to join HEIs while also helping to retain them in the institutions until the completion of their studies.

These achievements in widening access to education are, however, shadowed by the increasing admission of graduates from the disadvantaged groups into non-STEM subject areas, and non-elite institutions, resulting in their slow academic progress, low learning levels, and poor labour market outcomes. Hence, students from the disadvantaged groups are less represented in elite institutions and in preferred programmes of study (such as STEM), and are compelled to pursue their higher education in non-elite institutions. In this way, the elite institutions and STEM subject areas continue to be the exclusive domain of the privileged. An analysis of the employment market also shows that labour market outcomes do not favour graduates from the disadvantaged groups. Thus, unemployment rates are high and earning levels are low among graduates from the disadvantaged groups in comparison to their counterparts from privileged backgrounds.

This paper, however, shows that though disparity continues to exists, the current scenario entailing an increasing share of the disadvantaged and non-traditional learners in higher education is a progressive development. The Draft National Education Policy (DNEP) recommends further expansion of the system to double the GER by 2035. This paper argues that access to higher education has improved across all segments of the population, including those from the disadvantaged groups following massification of the sector. But continuing disparity in access makes targeted interventions imperative for the under-represented groups. The need for the disadvantaged students to catch up with their more advantaged counterparts also necessitates the achievement of a higher rate of growth for the former. Equity in

access to higher education can be reasonably achieved when the aggregate data is taken into consideration. An analysis of this disaggregated data on access shows gain in the democratisation of access to higher education.

Empirical evidence suggests that the disadvantaged groups lag behind the advantaged students in terms of access to elite and professional study programmes such as STEM, and to elite institutions. Since access to elite institutions and elite subjects is one of the major determinants of opportunities for accessing elite and lucrative employment, the over-representation or under-representation of social groups in certain disciplines and institutions is likely to have far-reaching social and economic implications. This situation must be analysed keeping in mind the fact that the private sector is a major provider of professional courses in India. There is also a need to comprehensively understand the nature and implications of disciplinary distortion for devising strategies to equalise educational opportunities. Albeit, the supply conditions for higher education need to be improved. The State should make greater investment in establishing new institutions for imparting teaching in STEM while also ensuring the provision of STEM subjects in the existing colleges and universities. The extension of reservation in the private sector could be another option. There is also a need for intervention on the demand side. Since a majority of the non-traditional learners in higher education have studied in government school located in rural and remote areas, often with the mother tongue as the language of instruction, there is a case for exploring school-based interventions to promote access to the inherent opportunities and prospects of STEM subjects among such students.

More importantly, the achievements in equity in access are neither supported nor strengthened in the current campus climate, which still remains unfavourable for achieving academic progress, improved scores, and social inclusion on the campus. Thus, along with improving supply conditions, institutional efforts should also be made to make campuses more inclusive and welcoming to students from diverse backgrounds. The relative ineffectiveness of institutional mechanisms to address issues related to diversity and discrimination, and the lack of inclusive policies for social integration lead to inconsistent performance and poor academic achievement among students from disadvantaged groups. All these factors contribute to low learning outcomes and poor labour market outcomes for the latter.

To conclude, the overall development of the higher education sector has been commendable in recent times. However, empirical evidence indicates that inequalities assume new forms as the system expands. Thus, systemic efforts are required for understanding the underlying processes of the emerging inequalities and for

assessing their magnitude. This necessitates the formulation of policies based on robust research and perspectives. Secondly, more institutional interventions are required to equalise educational opportunities and outcomes. State support should, of course, be continued, but expansion demands more pro-active interventions from institutions to make higher education inclusive. There is scope for devising better strategies for social integration and developing inclusive higher education campuses in India. The issues of equity and inclusion in the expanding system can be assessed based on the extent to which HEIs succeed in producing equitable outcomes for students from diverse backgrounds.

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About the paper

Equitable distribution of education is an essential condition for inclusive growth. This paper discusses equity and inclusion in higher education in India. Along with many social and economic indicators, the country has made commendable progress in education at all levels. Based on the analysis of empirical evidences, it is argued that inequality continues to exist in access to higher education in India. Moreover, new forms of inequalities are emerging in terms of access to elite institutions and selective fields of studies. However, the progress made so far in access to education is shadowed by inequalities in outcomes in terms of retention as well as the completion of education and transition from education to the labour market. These inequalities are influenced by social, economic, and pedagogical factors. The failure of institutional systems and processes to accommodate and provide pathways for students from diverse backgrounds to succeed in higher education is one of the major sources of inequitable outcomes. This paper calls for more proactive interventions from institutions to equalise the educational outcome of diverse student body.

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