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Private Sector Involvement in Higher Education in India: A State-Level Analysis

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Abstract:

Higher education in India today is at the crossroads. There is a gradual shift from education being a government responsibility to its privatisation. The number of private unaided colleges and private universities has increased, share of enrolment in private institutions increases for most of the states in India. The study focuses on the status of private higher education enrolment of all states/regions in India and the factors influencing private higher education in India. There are considerable inter-state and inter-regional disparities in private higher education enrolment in India. As per AISHE report, in 2020-21, in India, 65 per cent of degree colleges are private unaided, only 21.4 percent colleges are fully public funded, 40.1 per cent of universities are private. Share of enrolment in private unaided college is 44.4 percent and in private aided college is 21.1 per cent; total share of private enrolment is 65.5 per cent. NSSO 71st round unit level data reveals that the private enrolment in higher education in India is about 58.4 percent. Privatisation in Southern and Western states is much higher than other states of India. Private enrolment in general courses is 42.2 per cent and in technical/professional courses it is 71.1 per cent. The picture is very clear that in professional and technical courses private enrolment is too high compared to general courses. Binary logistic regression results suggest that different socio-economic factors like religion, caste, gender, education level and occupation of household, type of courses are responsible for private enrolment of students in Higher education in India.

Keywords: Higher Education, Privatisation, India

Subject Classification Code: A13, I20, I21, I23, L33

1. Introduction

The higher education systems in many countries today are at the crossroads. There is gradual shift from education being a state responsibility to its privatisation (Tilak, 2005). All those who have passed senior secondary examination are eligible and willing to join higher education must have an access to an institution of higher learning. The number of colleges in almost every discipline have increased significantly, but these are not adequate to accommodate all who are willing to join higher education (Dev, 2010). The case for privatisation of higher education exists mostly on the basis of financial considerations. The new economic policy initiated by the government of India (1991) supported the view that public expenditure in the social sector should be lowered, including in areas like education (Upadhyay, 2007). Budgetary allocations

to higher education were squeezed off in the post-economic reforms period and this sector also suffered significantly (Jana and Maiti, 2019). The share of education in the budgets of most state governments declined significantly (*Shariff and Ghosh, 2000*). When the public higher education system is not able to meet the growing demand for higher education, the private sector enters to meet the excess demand (*Tilak, 2018*). Along with all these, absence of any policy on development on higher education, that is helping erratic and unregulated growth of private higher education (*Tilak, 2004*). The unprecedented growth in Higher Education during the past two decades has to a large extent been due to the participation of private sector. This is particularly true in some of the large states of India and also in much of the professional disciplines (*FICCI, 2011*).

There may be tensions between the two notions of higher education - as a public good and as a marketable and saleable commodity. In practical terms, the privatization of higher education has brought about many innovative practices and public-private partnerships in the higher education sector (Lee, 2008). As externalities exist in higher education, the market system also fails to keep consumers well informed of the costs and benefits of higher education. Private system of higher education is also insensitive to distributional consideration, and in fact contributes to socio economic inequalities (*Tilak, 2018*). It is argued that, if the higher education is public good, then it is the responsibility of the government to supply it at a cost which is affordable for all. On the other hand, if it falls in the category of private good, then like any other commodity, it will be supplied at given cost to the consumer by the private supplier, whether it is affordable to the poor or not (*Throat and Khan, 2018*). Equity in access in higher education can be achieved more through the promotion of public institutions than private institutions (*Sinha, 2018*). Market, it is argued, fails to respect social ethos and community feeling. The problem becomes serious in case of a social good like education (*Chattopadhyay, 2009*). The social responsibility of higher education needs to be valued, protected and nurtured, and this is not possible in a system dominated by profit motivated private higher education system (*Tilak, 2014*).

There is a huge demand for private higher education, as private education is qualitatively superior to public education (*Tilak, 2018*). It is widely believed that graduates from private universities receive higher rewards in the labour market in the form of lower unemployment rates, better paid jobs and consequently higher earnings (*Jimenez and Tan, 1987; Patrinos, 1990*). The external efficiency in private higher education is argued to be greater than public higher education, which would explain the growth of privatisation (*Tilak, 2018*). The private sector responds to the economic needs of the individual and society, and provides relevant

types of education. 'The major advantages of private universities has been in more responding more quickly and efficiently to market demands' (*Balan, 1990*). Most public higher education institutions are politicised, only private institutions are apolitical (*Tilak, 2018*).

The paper focuses on the status and various issues of privatisation in higher education in India like the share of private higher education institutions and also the share of enrolment in private institutions by different states & regions in India. The paper also attempts to analyse the status of privatisation in higher education by different dimensions like region, social category, consumption class, course/stream and gender.

2. Materials and Methods

Objectives

1. Status of privatisation of higher education in India
2. To find out the share of private institutions and share of enrolment in private institutions, for the states in India
3. To study the determinants of enrolment in private institution for higher education in India.

Data Source

Household level data particularly on higher education are scarce. The National Sample Survey Organisation (NSSO) is main source for household level data on education in India. Importantly, the NSSO occasionally conducts rounds concentrating on education. The most recent survey on education NSSO conducted the 71st round in 2014 January- 2014 June. These surveys provide lot of detailed information on participation and household data in various level of education, by different characteristics of population-region, caste, household expenditure, etc. The present study uses the household survey, conducted by NSSO in January-June 2014 (71st round). Here we have used data related to privatisation in higher education of all states and regions in India. Data related to privatisation of higher education also have been collected from All India Survey of Higher Education (AISHE, 2016-17) Report by Ministry of Human Resources Development (MHRD), Government of India.

Methodology

Basically the percentage method has been employed for analysing the data to find out the share of private institutions and share of enrolment in private institutions. To find the extent of privatisation in higher education, we have arranged the data by different categories like region,

caste, gender, consumption class and have calculated the required percentages of privatisation for these categories.

To identify the determinants of private enrolment in higher education, a binary logistic regression model has been employed. Logistic regression applies maximum likelihood estimation after transforming the dependent into a logit variable. In our analysis the dependent variable is Y is binary variable, Y=1; when the student chooses private institution for higher education and Y=0; when the student does not choose private institutions for higher education. Now, the Logit model may be presented as in equation (1).

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + u_i \dots\dots\dots (1)$$

$P_i = E(Y_i = 1/X_i)$ means the student chooses a private institution for higher education. $P_i/(1 - P_i)$ is simply the odds ratio in favour of enrolling in private institutions for higher education – the ratio of the probability that a student enrolled in private institutions to the probability that not choose private institutions. L_i , the log of the odds ratio, is not only linear in X but also linier in the parameters. L is called the **logit**, and hence the name **logit model** (models like equation 1).

X_i s are independent variables.

β_0 , represent the value of the *logit* when the covariate is zero.

β_i represent the change in the value of the *logit* for a unit change in the covariate (when continuous) or the difference from one category to the next if the covariate is binary.

u_i , is the error term.

Selected explanatory variables for the analysis are presented in table 1.

Table 1: Independent Variables selected for binary logistic regression model analysis

<i>Explanatory Variables</i>		
<i>Categories</i>	<i>Variables</i>	<i>Variables Label</i>
1. Sector	Rural	<i>Rural=1, Urban=0</i>
2. Region	Southern	<i>Southern=1, Others Region=0</i>
	Western	<i>Western=1, Others Region= 0</i>
3. Gender	Female	<i>Female=1, Male=0</i>
4. Course	Graduate	<i>Graduate=1, Post Graduate= 0</i>
	Technical/Professional	<i>Technical/Professional=1, General Course= 0</i>
5. Religion	HINDU	<i>Hindu=1, Others=0</i>
6. Social Caste	NON Scheduled	<i>Non Scheduled=, Scheduled=0</i>
7. HHs Consumption Expenditure	Quintile 1	<i>Quintile Class 1=1, Quintile Class 2-5= 0</i>
	Quintile 5	<i>Quintile Class 5=1, Quintile Class 1-4= 0</i>
8. Education Level of Head	Up to Upper Primary	<i>Up to Upper Primary =1, otherwise=0</i>
	Graduation and Above	<i>Graduate and Above =1, otherwise= 0</i>

9. Age of Head of household of the Student	AGEHEAD	<i>Number of Years</i>
10. Occupation of Head	Wage and Salaried	<i>Wage and Salaried = 1, Others=0</i>
	Casual Labour	<i>Casual Labour = 1, others=0</i>
11. Medium of Instruction	English	<i>English = 1, Others=0</i>
12. Household has Computer and Internet	COMPUTERINT ERNET	<i>Household has Computer and Internet both=1, Otherwise=1</i>

Source: Authors own

3. Results & Discussion

The first part of this section have analyse the share of private higher education institution and share of enrolment in private higher education institutions in India at state level based on the various reports of All India Survey of Higher Education (AISHE) and the second part of this section provides an analysis about the disparity in private enrolment of higher education in India by, region, subject/courses, castes, religion, consumption and gender based on NSSO 71st round unit level data.

3.1 Private Sector in Higher Education: Analysis Based on AISHE Report

There has been remarkable growth in privatisation in higher education in India during recent years, as shown in Table 2. The number of private unaided colleges and private universities has increased, share of enrolment in private institutions increases, but share of enrolment in public institutions decreases. As per AISHE report, in 2020-21, in India, 65 per cent degree college are private unaided, only 21.4 per cent college are fully public funded, 40.1 per cent universities are private. Approximately the share of enrolment in private institutions and the number of private institutions as proportion of the total number of institutions are more than half of the total. In Indian higher education, the share of enrolment in private unaided college is 44.4 per cent and in private aided college is 21.1 per cent; total share of private enrolment is 65.5 per cent.

Table 2: Private sectors in higher education in India over years (2010-11 to 2020-21)

Year	Percentage of private institutions and percentage of enrolment in Private Institutions						
	University (%)	Number of colleges (%)			Enrolment in colleges (%)		
		Private aided	Private unaided	Total private	Private aided	Private unaided	Total private
2010-11	28.7	14.2	59.0	73.2	23.8	37.0	60.8
2011-12	28.7	15.1	58.2	73.3	23.7	38.3	62.1
2012-13	30.3	14.8	59.8	74.6	22.4	40.9	63.2
2013-14	32.4	14.9	60.4	75.3	22.4	42.6	65.0
2014-15	34.3	14.1	63.0	77.1	21.6	45.4	67.0
2015-16	34.7	13.8	63.8	77.6	21.4	45.6	67.0
2016-17	36.2	13.6	64.2	77.8	21.1	46.2	67.3
2017-18	38.0	13.4	64.7	78.0	20.6	46.7	67.3

2018-19	38.3	13.5	64.3	77.8	21.2	45.2	66.4
2019-20	39.2	13.4	65.2	78.6	21.4	44.9	66.3
2020-21	40.1	13.6	65.0	78.6	21.1	44.4	65.5

Source: Own Calculation Based on AISHE Report, Government of India, Various Years

From the above discussion we find that Private sector is expanding at a very fast pace in India.

Higher education institutions by management types in India

The size of the private sector comprises the private state universities; private deemed universities and private colleges. This section presents management-wise share of higher education institutions in recent times separately for college and university by the states in India.

Management-wise university in India

Growth in number of different types of universities/ university level institutions in India for last decade (2010-11 to 2020-21) is presented in the Table 3. It is found that the number of universities has increased from 621 in 2010-11 to 1113 in 2020-21. It is found that in India in the year 2010-11 total private university are 178 out of that 87 state private universities and 91 private deemed universities. In 2020-21 out of total number of universities, there were about 80 private deemed universities, 365 private state universities and one state private open university, making 446 private universities, which account for about 40%.

Table 3: Growth in numbers of different types of universities during last decade (2010-11 to 2020-21) in India

University Type	2010-11		2019-20		2020-21	
	Number of Universities	%	Number of Universities	%	Number of Universities	%
State Public University	281	45.2	386	37.0	403	36.2
State Private University	87	14.0	327	31.4	365	32.8
Institution of National Importance	59	9.5	135	12.9	149	13.4
Deemed University Private	91	14.7	80	7.7	80	7.2
Central University	41	6.6	48	4.6	51	4.6
Deemed University Government	40	6.4	36	3.5	34	3.1
State Open University	13	2.1	14	1.3	14	1.3
Deemed University Government Aided	-	-	10	1.0	10	0.9
Institution under state Legislature Act	5	0.8	5	0.5	5	0.4
Central Open University	1	0.2	1	0.1	1	0.1
State Private Open University	-	-	1	0.1	1	0.1

Others	3	0.5	-	-	-	-
Total	621	100	1043	100	1113	100

Source: Government of India (2013), Government of India (2020), Government of India (2021)

Management-wise colleges for states in India

Table 4 presents the management-wise share of colleges for the states in India for the year 2010-11 and 2020-21. From the table it also found how the share of private college and government college changed in the last decade. In 2010-11 with respect to the total number of colleges, the percentage shares of institutes by management type were: government institutions: 26.8%, and private unaided: 59%. The private aided and unaided taken together accounted for about 73.2%. With respect to the total number of colleges in 2020-21, the percentage shares of institutes by management type were: government institutions: 21.4%, and private unaided: 65%. The private aided and unaided taken together accounted for about 78.6%. In 2020-21 highest proportion of private unaided college accounted for the state of Andhra Pradesh (including Telangana) (81.2%), followed by Uttar Pradesh (78.9%), Tamil Nadu (76%), Karnataka (71.3%), Rajasthan (70.5%), Haryana (63.4%), Punjab (63.1%), Kerala (62.6%), Maharashtra (62.6%), Gujarat (61%), Madhya Pradesh (56.7%), Himachal Pradesh (49.1%) and other states. In 2020-21, the proportion of government college highest in the state of Tripura (88.1%), followed by Assam (80.7%), Mizoram (79.5%), Sikkim (78.9%) and other states.

Table 4: Management-wise distribution of colleges (in percentage) in India

	2010-11			2020-21		
	Government	Total private*	Private un-aided	Government	total private*	Private un-aided
Andhra Pradesh + Telangana	12.0	88.0	80.8	12.7	87.3	81.2
Uttar Pradesh	24.4	75.6	55.4	11.4	88.6	78.9
Tamil Nadu	5.8	94.2	88.5	14.0	86.0	76.0
Karnataka	20.2	79.8	66.3	16.7	83.3	71.3
Rajasthan	24.1	75.9	70.5	21.6	78.4	70.5
Haryana	22.9	77.1	60.2	23.9	76.1	63.4
Punjab	20.3	79.7	72.8	19.3	80.7	63.1
Kerala	22.5	77.5	53.6	20.5	79.5	62.6
Maharashtra	28.1	71.9	45.1	11.8	88.2	62.6
Gujarat	36.1	63.9	40.0	17.9	82.1	61.0
Madhya Pradesh	33.1	66.9	59.1	32.1	67.9	56.7
Himachal Pradesh	47.0	53.0	45.7	47.1	52.9	49.1
Uttarakhand	49.7	50.3	43.0	39.0	61.0	48.9
West Bengal	40.2	59.8	36.4	34.1	65.9	47.1
Chhatisgarh	49.0	51.0	39.5	46.5	53.5	43.3
Jharkhand	70.3	29.7	13.5	47.3	52.7	42.6
Jammu and Kashmir	59.3	40.7	37.3	54.7	45.3	38.3
Delhi	49.6	50.4	42.4	56.6	43.4	37.0
Arunachal Pradesh	66.7	33.3	33.3	56.1	43.9	34.1

Odisha	35.9	64.1	31.3	31.0	69.0	32.0
Bihar	87.6	12.4	5.2	52.8	47.2	31.9
Meghalaya	29.2	70.8	25.0	43.5	56.5	27.4
Manipur	63.2	36.8	10.5	57.3	42.7	27.2
Goa	42.4	57.6	15.2	34.4	65.6	23.0
Sikkim	55.6	44.4	44.4	78.9	21.1	21.1
Mizoram	92.9	7.1	3.6	79.5	20.5	17.9
Nagaland	38.5	61.5	25.0	29.9	70.1	17.9
Assam	82.6	17.4	12.2	80.7	19.3	14.8
Tripura	85.7	14.3	11.4	81.1	18.9	11.3
All India	26.8	73.2	59.0	21.4	78.6	65.0

Source: Government of India (2013) & Government of India (2021)

*Total private = private aided + private un-aided

State-wise share of enrolment in higher education by types of institutions in India: based on AISHE report (2010-11 & 2020-21)

Table 5 presents the management-wise share of enrolment in higher education by the states in India for the year 2010-11 and 2020-21. From the Table 5 it also found how share of enrolment in private college and Government College changed in last decade. In 2010-11, In India, highest share of enrolment is accounted for by government colleges (39.2%), followed by the private-unaided colleges (37%), and private-aided colleges (23.8%). The private aided and unaided together accounted for 60.8%. In 2020-21, a highest share of enrolment is accounted for by private-unaided colleges (44.4%), followed by the government colleges (34.5%), and private-aided colleges (21.1%). The private aided and unaided together accounted for 65.5%.

In the state of Mizoram, the maximum share of enrolment accounted for by the government colleges (95.1%), followed by the private-unaided colleges (4.8%) and private-aided colleges (0.1%). In Assam, the maximum share of enrolment accounted for by the government colleges (93.6%), followed by the private-unaided colleges (5.3%) and private-aided colleges (1.1%). In the states of Andhra Pradesh (including Telangana), Uttar Pradesh, Tamil Nadu, Rajasthan, Karnataka, Kerala, Maharashtra, Punjab and Gujarat, a larger share of enrolment is occupied by the private-unaided colleges. In the states of Mizoram, Assam, Tripura, Manipur, Sikkim, Jharkhand, Bihar, J & K, Delhi, Himachal Pradesh, Arunachal Pradesh, Chhattisgarh, Madhya Pradesh, Meghalaya and West Bengal, a larger share of enrolment is occupied by government colleges.

Table 5: Management-wise distribution of enrolment in colleges (in percentage) in India (2010-11 & 2020-21)

States	2010-11			2020-21		
	Government	Total Private*	Private un-aided	Government	Total private*	Private un-aided
Andhra Pradesh+Telangana	13.8	86.2	75.7	14.6	85.4	77.0
Uttar Pradesh	19.2	80.8	40.8	11.7	88.3	70.1
Tamil Nadu	9.7	90.3	78.8	20.8	79.2	57.3
Rajasthan	59.6	40.4	33.2	41.3	58.7	52.9
Karnataka	28.5	71.5	46.4	28.4	71.6	51.4
Puducherry	40.5	59.5	54.5	51.7	48.3	48.1
Kerala	19.2	80.8	37.4	18.1	81.9	45.6
Maharashtra	30.1	69.9	24.2	10.0	90.0	40.6
Punjab	40.0	60.0	49.5	28.6	71.4	40.1
Gujarat	46.0	54.0	24.3	24.5	75.5	39.4
Haryana	28.7	71.3	30.5	40.2	59.8	34.3
Madhya Pradesh	66.5	33.5	25.3	59.7	40.3	31.9
Uttarakhand	58.1	41.9	15.9	53.6	46.4	31.1
Chhatisgarh	56.7	43.3	29.9	66.0	34.0	25.3
Odisha	36.5	63.5	27.0	37.0	63.0	21.9
Arunachal Pradesh	90.2	9.8	9.8	72.8	27.2	21.8
Delhi	66.8	33.2	22.2	71.2	28.8	21.8
Himachal Pradesh	78.0	22.0	16.1	76.0	24.0	18.2
West Bengal	52.8	47.2	12.4	60.1	39.9	16.2
Meghalaya	15.8	84.2	13.9	56.4	43.6	13.9
Goa	38.8	61.2	8.0	34.4	65.6	12.2
Jammu and Kashmir	86.5	13.5	12.7	86.2	13.8	11.6
Nagaland	35.9	64.1	26.5	33.3	66.7	11.2
Jharkhand	81.5	18.5	4.1	78.1	21.9	9.3
Sikkim	90.7	9.3	9.3	91.5	8.5	8.5
Bihar	84.9	15.1	3.3	78.5	21.5	7.4
Manipur	76.4	23.6	5.7	80.0	20.0	6.3
Assam	95.0	5.0	2.9	93.6	6.4	5.3
Tripura	95.7	4.3	3.0	90.3	9.7	5.0
Mizoram	98.4	1.6	0.3	95.1	4.9	4.8
All India	39.2	60.8	37.0	34.5	65.5	44.4

Source: Government of India (2013) Government of India, (2021) (Based on actual response)

*Total private = private aided + private un-aided

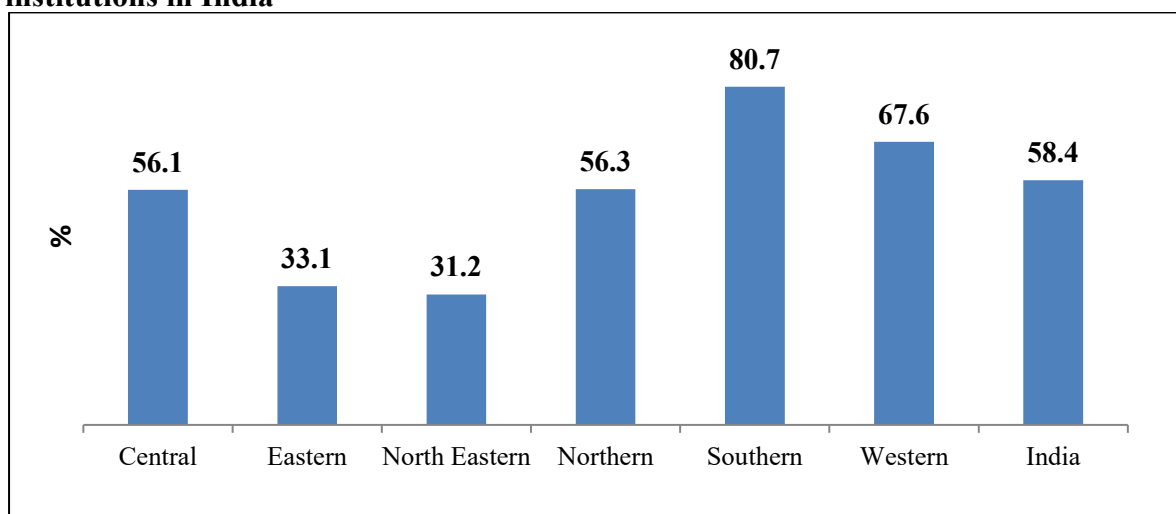
3.2 Privatisation in higher education in India: analysis based on NSSO 71st round unit level data

For analysing the private enrolment in higher education in India intuitively this section of the study has been used NSSO 71st round unit level data. The study has tried to estimate private enrolment by course, subject, by different socio-economic conditions like gender, caste, religion, and consumption class.

Region-wise privatisation in higher education in India

Figure 1 presents region-wise percentage of students pursuing higher education from private institutions in India. NSS 71st round unit-level data reveals that in India in higher education 58.4% students pursuing higher education from private institutions. There are considerable inter-regional disparities in private higher education enrolment in India. In higher education a highest proportion of students get enrolled in private institutions belongs to southern region (80.7%), followed by the western region (67.6%), northern region (56.3%), central region (56.1%), eastern region (33.1%) and north eastern region (31.2%).

Figure 1: Region-wise percentage of students pursuing higher education from private institutions in India



Source: Own Calculation, based on NSSO 71st round unit level data, (Government of India, 2015a)

Table 6 presents region-wise percentage distribution of students attending higher education by type of institutions. For higher education, share of enrolment in private institutions is higher compared to government institutions in southern, western, northern and central regions in India. But, in eastern and north eastern region share of enrolment in public institutions is higher compared to enrolment in private institutions. In higher education share of enrolment in government institutions is highest in the north eastern region (68.8%), followed by the eastern region (66.9%), the central region (43.9%), the northern region (43.7%), western region (32.4%) and the southern region (19.3%).

Table 6: Region-wise percentage of students attending higher education by type of institutions

Regions	Type of institutions	
	Public (%)	Private (%)
Central	43.9	56.1
Eastern	66.9	33.1
North Eastern	68.8	31.2

Northern	43.7	56.3
Southern	19.3	80.7
Western	32.4	67.6
India	41.6	58.4

Source: Own Calculation, based on NSSO 71st round unit level data, (Government of India, 2015a)

Course/subject-wise private enrolment in higher education in India

Now we will focus on course and subject wise private enrolment in higher education for all the regions in India. Table 7 presents course-wise private enrolment in higher education for all regions. The private enrolment is about 42.4 percent in general courses and 71.1 percent in technical and professional courses.

For technical and professional courses, a highest proportion of students get enrolled in private institutions for higher education belongs to southern region (84.5%), followed by western region (74.6%), central region (70.3%), northern region (65%), eastern region (55.8%) and north eastern region (39.8%).

For general courses, a highest proportion of students get enrolled in private institutions for higher education belongs to southern region (67.8%), followed by western region (57.9%), northern region (48.7%), central region (31.6%), north eastern region (25.8%) and eastern region (17.1%).

Table 7: Region-wise percentage of private enrolment in higher education (graduate and post-graduate level) in India for different courses

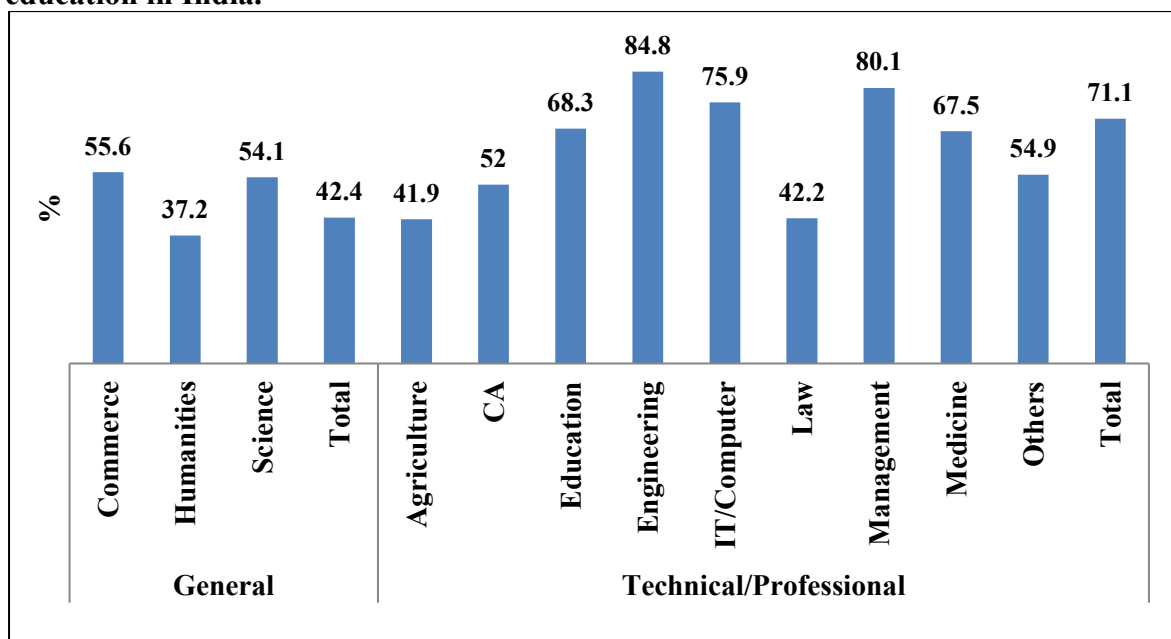
Region	Course	
	Technical/Professional	General
Central	70.3	31.6
Eastern	55.8	17.1
North Eastern	39.8	25.8
Northern	65.0	48.7
Southern	84.5	67.8
Western	74.6	57.9
India	71.1	42.4

Source: Own Calculation, based on NSSO 71st round unit level data, (Government of India, 2015a)

Figure 2 presents subject/stream-wise private enrolment in higher education in India. It shows that, in engineering, management and IT/computer courses private enrolment is too high in India. For general course, in commerce stream 55.6% of the total students are enrolled in private institutions, followed by the science stream (54.1%) and humanities stream (37.2%). For technical/professional courses, in engineering stream maximum percent of students (84.8%) are enrolled in private institutions, followed by Management (80.1%), IT/computer

(75.9%), Education (68.3%), Medicine (67.5%), CA (52%), Law (42.2%) and Agriculture (41.9%).

Figure 2: Course-wise percentage of students enrolled in private institution for higher education in India.



Source: Own Calculation, based on NSSO 71st round unit level data, (Government of India, 2015a)

Private enrolment in higher education by social category and religion

Now we will focus on private enrolment by different castes and religions in higher education in India. Table 8 presents caste and religion-wise private enrolment in higher education for all the states and regions. In India the private enrolment at aggregate level is about 61 % for non-scheduled category and it is greater than scheduled category i.e. 49.3%. Private enrolment in Hindu community is 59.6 %, 50.6 % in Muslim and 57.4% in others community.

Table 8: Region-wise percentage of private enrolment for higher education (graduate and post-graduate level) in India by social caste and religion

Regions	Religion			Social Caste	
	Hindu	Muslim	Others	Scheduled	Non-Scheduled
Central	55.9	55.8	61.3	46.7	58.8
Eastern	34.1	24.4	38.3	24.8	34.8
North East	21.1	27.6	41.6	35.2	25.8
Northern	58.6	40.8	61.4	55.3	56.5
Southern	80.4	81.5	83.3	69.4	82.9
Western	67.0	68.5	76.9	60.9	69.2
India	59.6	50.6	57.4	49.3	61.0

Source: Source: Own Calculation, based on NSSO 71st round unit level data, (Government of India, 2015a)

Private enrolment in higher education across consumption quintiles

Now we will focus on quintile class-wise private enrolment in higher education for all the regions in India. Table 9 presents quintile class-wise private enrolment in higher education. In respect to enrolment a highest proportion of the students (65.1%) of higher quintile class (Q5) admitted in private institution for higher education, followed by the quintile 4 (56.8%), quintile 3 (53%), quintile 2 (47.8%) and quintile 1 (45.5%). This indicates that in India, share of private enrolment increases from lower class to upper quintile class.

Table 9: Quintile class-wise percentage of private enrolment in higher education in India

Region	Quintile Class				
	Q 5	Q 4	Q 3	Q 2	Q 1
Central	62.1	58.7	49.1	52.4	42.6
Eastern	46.6	29.7	23.3	25.2	17.2
North Eastern	35.7	28.6	33.1	24.8	19.1
Northern	58.9	53.5	49.3	55.3	60.1
Southern	85.5	79.5	74.0	71.3	69.4
Western	71.5	67.6	64.1	54.3	61.5
India	65.1	56.8	53.0	47.8	45.5

Source: Own calculation, based on NSSO 71st round unit level data, (Government of India, 2015a)

Gender-wise and sector-wise share of private enrolment in higher education

Table 10 presents gender-wise percentage of private enrolment in higher education for all regions in India. The percentage of private higher education enrolment for male is 60% and for female it is 56.5%. In case of north eastern region it is 28.9% for male and 34.1% for female. In southern region it is 81.7% for male and 79.6% for female. Table 5.10 also presents percentage of private higher education enrolment by rural and urban sector for all regions in India. The percentage of private higher education enrolment for rural sector is 56.6% and 59.9% for urban sector in India. In case of north eastern region it is 26.7% for rural sector and 35.4% for urban sector. In southern region it is 78.5% for rural and 82.5 per cent for urban sector.

Table 10: Gender-wise and sector-wise percentage of private enrolment in India in 2015

Region	Sector		Gender	
	Rural	Urban	Female	Male
Central	48.4	60.5	51.2	59.4
Eastern	30.9	34.8	27.8	37.1
North Eastern	26.7	35.4	34.1	28.9
Northern	58.0	54.9	53.6	58.6
Southern	78.5	82.5	79.6	81.7
Western	66.0	68.8	65.1	69.4
Grand Total	56.6	59.9	56.5	60.0

Source: Own Calculation, based on NSSO 71st round unit level data, (Government of India, 2015a)

Determinants of private enrolment in higher education: Regression Analysis

To identify the determinants of enrolment of a student in private institute for higher education, a binary logistic regression model (given in equation 1) has been employed. The analysis has been done using the 71st NSSO unit level data for 13,637 students who were pursuing higher education (Graduate & Post Graduate) in all states in India.

Here the dependent variable is a dummy variable which is defined as follows:

private higher education enrolment (Private Institution = 1 and Public institution = 0); If a student go to Private Institution for higher education then we take 'one' and if go to public institutions then we take 'zero'.

We have taken various socio-economic variables as the determinants of the mentioned dependent variable. Table 11 presents the results of maximum likelihood estimation of the logistic regression model. The result shows that seven variables have significant positive impact and four variables have significant negative impact on the dependent variable i.e. enrolment of the student in private institute.

The probability of taking enrolment in private institutions is more likely in urban sector compared to rural sector and the effect is significant at 1% level. The private institutions as well as more technical and professional courses are available in urban sector compared to rural sector. Region is a significant determinant in the probability of taking enrolment in private institutions. Students from southern and western regions are more likely to enrol in private institutions for higher education. In these regions a major share of higher education institutions is private, and the technical/professional courses being mostly provided by private institutions major share of students of these regions take admission in private institutions.

Female students are less likely to be enrolled in private institutions when compared to males. A major share of the males admitted in technical/professional course, and family expense on male is higher compared to female.

Course taken by the students is an important determinant of probability of enrolment in private institutions. Variables *Graduate* and *Technical/Professional* under course category positively and significantly affect the probability of a student enrolled in private institutions for higher education. Being a graduate student having more chance to enrol in private institutions compared to post-graduate students. If students choose to study technical and professional course having more chance to getting enrolment in private institutions compared to general courses, as a major share of technical and professional courses provided by private institutions. Religion also an important determinant in the observations of probability of the student enrolled in private institutions for higher education. Variable '*Hindu*' under religion category has

positively and significantly affects the probability of a student enrolled in private institutions for higher education. Social caste of the student also effects significantly on the probability of taking enrolment in private institutions. Variable '*Non-scheduled*' under social caste has positively and significantly affect the probability of a student enrolled in private institutions for higher education.

Education level of household head is an important determinant of probability of enrolment in private institutions. Household head with graduation and above education level was found to be less likely to taking enrolment in private institutions when compared less education level and this is significant at 1% level. Occupation of household head also is a significant determinant of probability of enrolment in private institutions. Household head with wage/salaried is found to be less likely to taking enrolment in private institutions when compared other occupation and this is significant at 1% level. Medium of instruction is also a significant determinant of probability of enrolment in private institutions. If medium of instruction is '*English*' more likely to taking enrolment in private institutions compared to other mediums.

The binary logistic regression model has been estimated based on the data of 13, 637 students in higher education. The classification table (Table 12) shows us the sensitivity of prediction, that is, the percentage of occurrences correctly predicted (74.6%). We also see specificity of the prediction, which is the percentage of non occurrences correctly predicted (68.4%). Overall our predictions were correct 9828 out of 13,637, for an overall success rate 72.1%.

Table 11: Logit model (determinants of taking admission in private institution for higher education)

Independent Variables						
Categories	Variables	B	S.E.	Wald	Sig.	Exp(B)
Sector	<i>Rural</i>	-0.13	0.05	11.2	0.001	1.17
Region	<i>Southern</i>	1.26	0.06	490.6	0.000	3.52
	<i>Western</i>	0.99	0.05	331.3	0.000	2.69
Gender	<i>Female</i>	-0.10	0.04	6.5	0.011	1.11
Course	<i>Graduate</i>	0.48	0.05	94.9	0.000	1.62
	<i>Technical/Professional</i>	0.28	0.05	35.6	0.000	1.33
Religion	<i>Hindu</i>	0.11	0.05	4.4	0.036	1.11
Social Caste	<i>NON Scheduled</i>	0.19	0.05	16.3	0.000	1.21
HHs Consumption Expenditure	<i>Quintile 1</i>	0.10	0.08	1.62	0.203	1.11
	<i>Quintile 5</i>	0.04	0.05	0.7	0.402	1.04
Education Level of Head	<i>Up to Upper Primary</i>	-0.02	0.05	0.2	0.698	0.98
	<i>Graduate and Above</i>	-0.17	0.06	9.5	0.002	0.84
Age of Head	<i>AGEHEAD</i>	0.00	0.00	3.3	0.068	1.00
Occupation of Head	<i>Wage/Salaried</i>	-0.26	0.06	17.2	0.000	0.77
	<i>Casual Labour</i>	-0.11	0.10	1.3	0.254	0.89

Medium of Instruction	<i>English</i>	0.19	0.05	14.8	0.000	1.21
Household has Computer and Internet	<i>Computer/internet</i>	-0.03	0.05	0.4	0.516	0.97
Constant		-1.39	0.13	108.2	0.000	0.25
Cox & Snell R Square = 0.22 ; Nagelkerke R Square = 0.30; -2 Log likelihood = 15043.99*						

Source: Own Calculation, based on NSSO 71st round unit level data, (Government of India, 2015a) * Estimation terminated at iteration number 5 because parameter estimates changed by less than .001

Table 12: The observed and the predicted frequencies for choosing private institution by logistic regression with the cut-off of 0.50

Observed	Predicted		Percentage Correct
	No	Yes	
No	3865	1782	68.4
Yes	2027	5963	74.6
Overall Percentage			72.1

Source: Own Estimation

4. Conclusions

This study has provided important and unique insights into the factors that influence private higher education in India. In India private sector played an important role in providing higher education, basically in Southern, Western and Northern region. As per AISHE report, in 2020-21, in India, 65 per cent degree college are private unaided, only 21.4 percent college are fully public funded, 40.1 per cent universities are private. Share of enrolment in private unaided college is 44.4 percent and in private aided college is 21.1 per cent; total share of private enrolment is 65.5 per cent. According to NSS 71st round unit level data, it has been revealed that, the private enrolment in higher education is 58.4 %; it is 80.7% in Southern region and 67.6 % in Western region. Private enrolment in general courses is 42.2% and in technical/professional courses it is 71.1 % for all over India. Private enrolment in engineering courses is 84.8 %, in management courses it is 80.1% and in IT/computer courses it is 75.9%. The picture is very clear that in professional and technical courses private enrolment is too high compared to general courses.

Private enrolment increases from lower quintile class to upper quintile class. Private higher education enrolment for male is greater than female student. Privatisation in non-scheduled category is greater than scheduled category. In Hindu community private enrolment is greater than all other community. In urban area it is greater than rural area. From regression results, it

is clear that, privatisation in under graduate courses is greater than post graduate courses and in technical/professional courses it is greater than general courses. One interesting aspect we have seen from the regression result- those household head education level is graduate and above they do not prefer private institution for higher education. Those household head is a wage/salaried person they do not prefer private institution for higher education. 'English' as a medium of instruction is an influencing factor of private enrolment in higher education.

Private higher education has grown for several reasons, which can be summed up into two categories: *Firstly*, Public system is not able to fulfil the increasing demand for higher education, *Secondly*, demand for different quality (high quality) and content in education and different type (such as technical & IT related courses) also contributes to the growth of privatisation.

It seems that instead of reduction of public expenditure on higher education, the government policy requires reorganization of the educational structure in a way to create more scope for technical education and vocational education in place of expanding simple bachelor level general education. According to Tilak, An education bazaar, no matter how big, is no substitute for a public higher education system. A strong, vibrant, accessible to all, high-quality public higher education system, is the solution for the country. There is no place for profit-seeking private higher education in a democratic society that aims to transform itself into a knowledge society and an advanced economy, with faster inclusive growth.

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