

BROOKINGS INDIA

REVIVING  
**HIGHER  
EDUCATION  
IN INDIA**

NOVEMBER 2019



SHAMIKA RAVI | NEELANJANA GUPTA | PUNEETH NAGARAJ

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Designed by Mukesh Rawat

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## Acronyms

<b>AICTE</b>	All India Council for Technical Education
<b>AIIMS</b>	All India Institute of Medical Sciences
<b>AISHE</b>	All India Survey on Higher Education
<b>CSIR</b>	Council of Scientific and Industrial Research
<b>CSR</b>	Corporate Social Responsibility
<b>DEC</b>	District Education Council
<b>DNEP16</b>	Draft National Education Policy 2016
<b>DNEP19</b>	Draft National Education Policy 2019
<b>GDP</b>	Gross Domestic Product
<b>GER</b>	Gross Enrolment Ratio
<b>GERD</b>	Gross Expenditure on Research and Development
<b>GNP</b>	Gross National Product
<b>HECI</b>	Higher Education Commission of India
<b>HEFA</b>	Higher Education Funding Agency
<b>HEGC</b>	Higher Education Grants Council
<b>HEI</b>	Higher Education Institution
<b>ICMR</b>	Indian Council of Medical Research
<b>IIM</b>	Indian Institute of Management
<b>IISc</b>	Indian Institute of Science
<b>IIT</b>	Indian Institute of Technology
<b>IoE</b>	Institution of Eminence
<b>ISB</b>	Indian School of Business
<b>ICSSR</b>	Indian Council of Social Science Research
<b>MCI</b>	Medical Council of India
<b>MHRD</b>	Ministry of Human Resource Development
<b>MIT</b>	Massachusetts Institute of Technology
<b>NAAC</b>	National Assessment and Accreditation Council
<b>NBA</b>	National Board of Accreditation
<b>NCHER</b>	National Commission for Higher Education and Research
<b>NEP</b>	National Education Policy
<b>NHERA</b>	National Higher Education Regulatory Authority of India
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>R&amp;D</b>	Research and Development
<b>RUSA</b>	Rashtriya Uchchatar Shiksha Abhiyan
<b>SHEC</b>	State Higher Education Councils
<b>STEM</b>	Science, Technology, Engineering, and Mathematics
<b>UGC</b>	University Grants Commission
<b>UIS</b>	UNESCO Institute for Statistics
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization

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## Executive Summary

- India has seen a rapid expansion in the higher education sector since 2001. There has been a dramatic rise in the number of higher education institutions (HEIs) and enrolment has increased four-fold. The Indian higher education system is now one of the largest in the world, with 51,649 institutions.
- Despite the increased access to higher education in India, **challenges remain. Low employability of graduates, poor quality of teaching, weak governance, insufficient funding, and complex regulatory norms** continue to plague the sector. India's gross enrolment ratio (GER) in 2018-19 was 26.3% but still far from meeting the Ministry of Human Resource Development's target of achieving 32% GER by 2022.
- As the government evaluates proposals to reform the University Grants Commission and implement the recently proposed Draft New Education Policy 2019, this Brookings India report takes a wider view of reforms necessary to respond to challenges facing higher education in India today. It examines the **capacity of HEIs with respect to students as well as teachers; governance and accountability; funding and affordability; research and innovation; and, regulatory regime, to create a globally relevant and competitive ecosystem that can produce employable graduates and sophisticated knowledge workers.**
- The exponential growth of the sector has been due to the increased demand for higher education. The higher education sector has grown across all levels and disciplines. However, broad trends and patterns in enrolment, graduation and placement suggest that **access to higher education continues to remain a challenge, especially at the postgraduate level.**
- Given the low proportion of students that go on to pursue postgraduate and doctoral education, a **shortage of qualified teachers** is a further problem that is plaguing even the best universities in India. High entry barriers, poor incentive structures, stringent tenure rules and rigid promotion practices lead to a limited supply of faculty.
- Faculty shortage, low inputs available for research and inadequate industry linkages amplify the existing **limited uptake of good quality independent research** in HEIs across all disciplines. We find that while countries like the United States, China and South Korea have invested in research to build a skilled, productive and flexible labour force, HEIs in India, in contrast, lack the culture of independent academic research.



- The higher education sector in India is crippled due to the **lack of financial, academic and administrative autonomy granted to institutions**. Overall, this has resulted in the poor quality of institutions as well as education. Under the affiliating university model, the supervisory authority for most colleges is the university or a government authority; both lack the capacity to effectively regulate their constituent colleges and hold them accountable. In contrast, autonomous HEIs are at an advantage since they have the power to constitute their own academic councils and make decisions on academic matters.
- In the last three decades, the government has taken a step back from its role as the primary funder of higher education. Union **funding for government and government-aided HEIs is skewed in favour of central universities**, and state governments spend a lot more than the central government on higher education. While, there is little to no data on how the higher education sector is funded, we do know that household expenditure on higher education is now the biggest source of funding. Private HEIs are funded almost entirely by student fees. Research suggests that the average tuition fee for an engineering degree from a private institution is almost twice as that of a public institution, while private HEIs account for three-fourths of all enrolments.
- **Limited assessment and accreditation capacity** of the NAAC and NBA has been a significant barrier in linking the performance of an institution to autonomy and funding decisions. Thus far, NAAC has retained the exclusive power to accredit HEIs, allowing corruption and profiteering to creep into the sector.
- Several proposals, committees and draft policies in the last decade have suggested the need to revamp the University Grants Commission in order to resolve the numerous roadblocks in an **over-regulated regime in the Indian higher education sector**. The distribution of functions, roles and responsibilities among several agencies and providers has inhibited innovation and creativity, and led to issues with accreditation of HEIs, their autonomy and inadequate funding. Some recent measures—for instance, granting Institution of Eminence status to select HEIs, enactment of IIM Bill 2017, many proposals made under the DNEP19—demonstrate that these issues have been acknowledged and reforming the regulatory regime is non-negotiable.

# Capacity: Enrolment, Employment and Quality

India has seen a dramatic increase in the capacity of its higher education sector in the last two decades. Enrolment in higher education has increased four-fold since 2001. With a Gross Enrolment Ratio (GER)<sup>1</sup> of 26.3% (AISHE 2018-19), we are close to achieving the target of 32% GER by 2020. However, many important questions such as the quality of Higher Education Institutions (HEIs) and employment of graduates merit further examination.

In this chapter, we address these questions by examining the enrolment trend and patterns; graduation and employment patterns; and the quality assurance framework for HEIs in India. Before addressing these questions, we first map the expansion of the higher education sector since independence in Section 2. We also track the policy shifts that enabled this expansion. We offer context to India's expansion by comparing it to other countries. We also compare the growth of India's higher education sector to that of China over the last 25 years.

Despite the increasing number of professional colleges, three-year degrees in arts, commerce and sciences remain the most popular programmes as evidenced by high enrolment rates.

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<sup>1</sup> GER for higher education is the proportion of college-age (18-23) individuals enrolled in a higher education institution

We examine the implications of such enrolment patterns in Section 3. Graduates of three-year programmes find it difficult to enter the organised sector as these programmes do not readily impart skills relevant to the job market. Section 4 takes a closer look at graduating patterns across disciplines and the impact it has on the labour market. The exponential growth in the number of HEIs has diminished the capacity of regulators to enforce quality standards. We analyse India's quality assurance framework against this backdrop in Section 5. In Section 6, we address the shortage of teachers, a problem that plagues even the best universities in India. The section specifically discusses problems in data related to teachers in higher education, given the recent disparities observed in the AISHE, and identifies the problems that lead to teacher shortages. Sections 3 to 6 also identify specific recommendations to upgrade the capacity of higher education in India while maintaining quality and imparting skills that are relevant to the job market.

## 1.1 Growth of the higher education sector in India

With 51,649 HEIs, the Indian higher education system is one of the largest in the world.<sup>2</sup> In terms of enrolment, India is second only to China (41.8 million)<sup>3</sup> with 35.7 million students currently enrolled in universities and colleges. India has seen a massive expansion in the higher education sector as enrolment and the number of HEIs have increased almost four-fold since 2001 (Table 1). This increase was primarily driven by privately-owned institutions.

The entry of the private sector in the 1980s signalled a policy shift. Post-independence, the expansion in higher education was mainly through public institutions. The focus of the government was on establishing high-quality institutions, rather than increasing access to higher education. For instance, the Radhakrishnan-led University Education Commission (1949) sought to

limit the number of students in universities to 3000 and colleges to 1500.<sup>4</sup> Similarly, the Education Commission (1964-65) recommended a planned expansion of higher education while imposing stricter norms for entry.<sup>5</sup>

The policy of establishing small, high-quality institutions was in stark contrast to what China, the United States and European countries followed. In China, for instance, 41.8 million students were enrolled in just 2,596 HEIs in 2016.<sup>6</sup> Having students concentrated in a relatively small number of institutions allowed these countries to scale up faster and manage the higher education system more easily.<sup>7</sup> In India, the GER was 4.2% in 1970-71 despite the establishment of 2,699 new colleges and 75 new universities from 1950-1970 (Table 1).

In the 1970s, expansion in higher education occurred through 'private aided' colleges.<sup>8</sup> These colleges were privately owned but were subsidised by the government. Aided private colleges operated very similarly to government colleges. They offered the same courses, followed the same study programmes and students appeared in the same exams as those in government colleges.<sup>9</sup> However, the policy of consolidating and improving existing universities continued.<sup>10</sup> The 1970s saw a much smaller growth in enrolment as compared to the previous decade.

In the 1980s, the government faced a growing demand for higher education but was unable to meet the demand through public institutions.<sup>11</sup> This period also saw the growth of 'private unaided' colleges. Set up by individuals or family groups, they were not dependent on the government for funding (see Figure 12).<sup>12</sup> The entry of private players in the sector, coupled with a newly liberalised economy, enabled the expansion of higher education at a much faster pace from the 1990s onwards. From 1990 to 2001-02, enrolment doubled from 4.4 million to 8.8 million, equivalent to the increase in the previous 40 years.

<sup>2</sup> All India Survey on Higher Education, 2016-17. This excludes vocational 11,169 training institutions

<sup>3</sup> Ministry of Education of the People's Republic of China (2016), 'Number of Students in Higher Education Institutions', available at <[http://en.moe.gov.cn/Resources/Statistics/edu\\_stat\\_2016/2016\\_en01/201708/t20170822\\_311603.html](http://en.moe.gov.cn/Resources/Statistics/edu_stat_2016/2016_en01/201708/t20170822_311603.html)>

<sup>4</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>5</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>6</sup> Ministry of Education of the People's Republic of China (2016), 'Number of Higher Education Institutions'

<sup>7</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>8</sup> Varghese, N V (2015), *Challenges of Massification of Higher Education in India*, CPRHE Research Paper Series No. 1

<sup>9</sup> Varghese, N V (2015), *Challenges of Massification of Higher Education in India*, CPRHE Research Paper Series No. 1

<sup>10</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>11</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>12</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

**Table 1: Higher education expansion in India**

Year	Number of Universities	Number of Colleges	Enrolment (millions)	GER (%)
1950-51	27	578	0.2	-
1960-61	49	1,819	0.6	1.5
1970-71	102	3,277	2.0	4.2
1980-81	132	4,577	2.8	4.7
1990-91	185	6,627	4.4	5.9
2001-02	260	11,146	8.8	8.1
2011-12	621	34,908	28.5	19.4
2016-17	864	40,026	35.7	25.2
2017-18	903	39,050	36.6	25.8
2018-19	993	39,931	37.4	26.3

Data Source: Varghese (2015) and AISHE, various years

The 1990s also marked a policy shift with the government inviting greater private sector participation in higher education.<sup>13</sup> As government investment in primary education increased, its role as the main provider of higher education diminished.<sup>14</sup> Focus also shifted towards cost recovery in HEIs and making public sector HEIs self-sufficient.<sup>15</sup> The last two decades saw an increase in the number of affiliated private colleges as well as deemed universities. The former became an important source of revenue for universities that charge an affiliation fee. The latter allowed private colleges to operate as universities and award degrees. Therefore, there was a drastic increase in the number of institutions and enrolment in higher education from 2001-2002 to 2011-2012. Enrolment tripled from 8.8 million to 28.5 million while the GER doubled from 8.1% to 19.4%.

The frenetic growth of higher education institutions and enrolment has continued in the last five years with over 6,000 institutions and six million students being added to the higher education system from 2011-2012 to 2016-2017.

Under the Rashtriya Uchchatar Shiksha Abhiyan 2.0 (RUSA) the Ministry of Human Resource Development has set a target of achieving 32% GER by 2022. Going by the current growth rates, this target is likely to be met in the next few years. However, India is not the only country to experience such dramatic growth; we examine this in greater detail in Section 2.

## 1.2 GER: International comparison

There are three stages in the development of a higher education system based on their level of enrolment. When the GER is less than 15%, the higher education system is an elite system where access to higher education is limited and is seen as a privilege.<sup>16</sup> When the GER is between 15% and 50%, the higher education system is a mass system where higher education is seen as a right for those who have certain formal qualifications.<sup>17</sup> Higher education systems are universal when the GER is above 50% and higher education is an obligation.<sup>18</sup> India with a GER of 26.3% (AISHE 2018-19) is in its initial stages of 'massification'.<sup>19 20</sup>

India's GER is lower than the global average of 36.7%. But it compares favourably with other Lower Middle-Income Countries, which have an average GER of 23.5%.<sup>21</sup> The GER in higher education is said to be dependent on the level of income and the occupational structure of the economy.<sup>22</sup> Service economies in developed countries tend to have a greater demand for higher education.<sup>23</sup> It is interesting to note that the average GER in Lower Middle-Income Countries has doubled from 11.5% in 2001 to 23% in 2016. In the same period, the GER in Upper Middle-Income Countries increased from 19% to 50%. The expansion in higher education around the world has been driven by the private sector.<sup>24</sup>

<sup>13</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>14</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

<sup>15</sup> Varghese, N V (2015), *Challenges of Massification of Higher Education in India*, CPRHE Research Paper Series No. 1

<sup>16</sup> Trow, Martin (1973): *Problems in Transition from Elite to Mass Higher Education*. Carnegie Commission on Higher Education

<sup>17</sup> Trow, Martin (1973): *Problems in Transition from Elite to Mass Higher Education*. Carnegie Commission on Higher Education

<sup>18</sup> Trow, Martin (1973): *Problems in Transition from Elite to Mass Higher Education*. Carnegie Commission on Higher Education

<sup>19</sup> Varghese, N V (2015), *Challenges of Massification of Higher Education in India*, CPRHE Research Paper Series No. 1

<sup>20</sup> A country is at an elite stage of higher education when the GER is less than 15%, at a stage of massification when the GER is between 15% and 50%, and at a stage of universalisation when the GER reaches 50% mark. (Martin Trow, 2006)

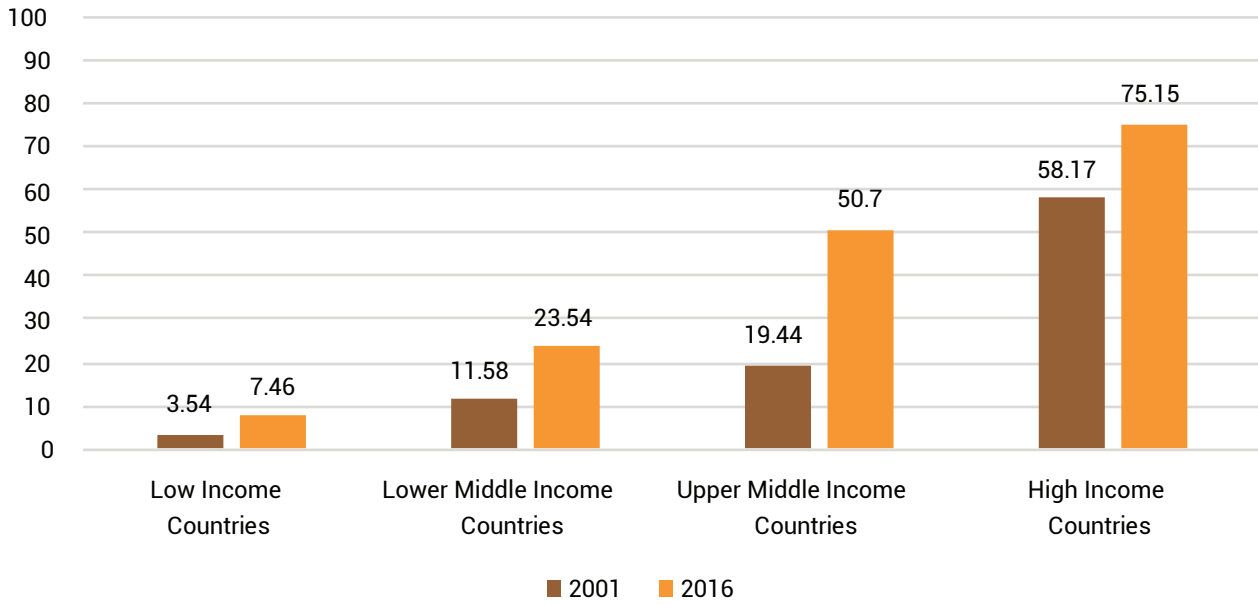
<sup>21</sup> UNESCO Institute for Statistics (UIS), 2016

<sup>22</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>23</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>24</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

Figure 1: Gross enrolment ratio by income group

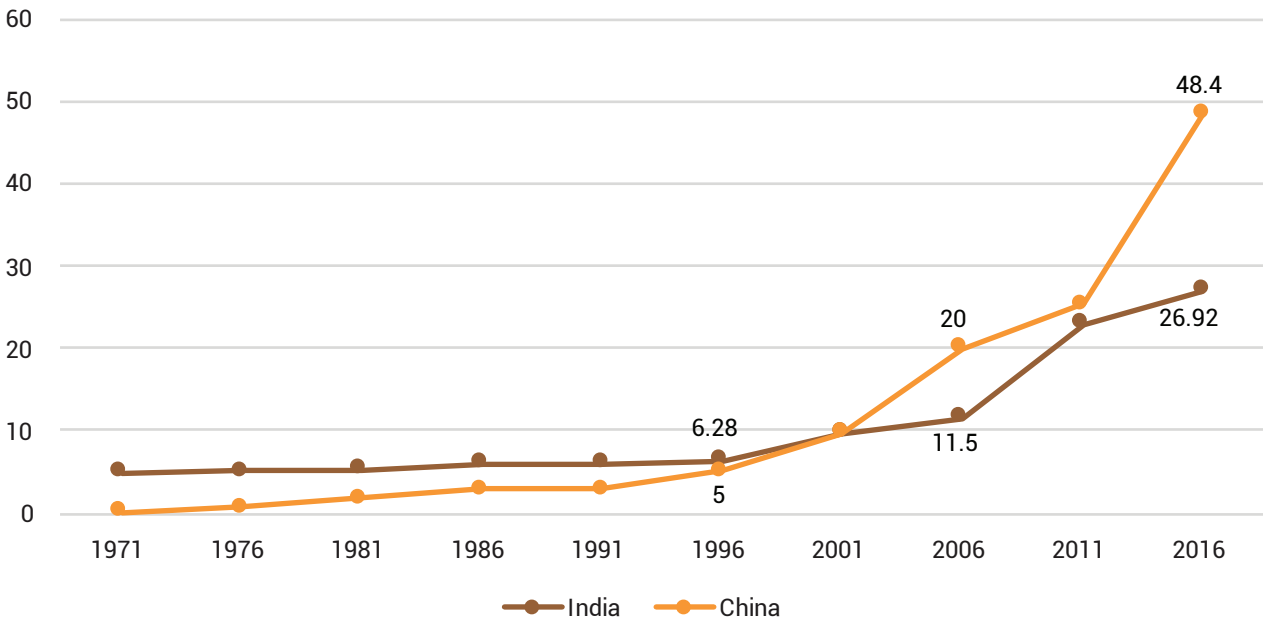


Data Source: UIS (2016); based on a similar chart in Agarwal (2006)

The growth of India's higher education sector since 2001 is comparable to most other developing countries. But few countries have expanded on the same scale. From 2001 to 2016, India added 26.9 million students to its higher education system. One country that has far outpaced

India in this respect is China (Figure 2). Between 1996 and 2001, both countries had similar GERs. However, in the next five years, China almost doubled its enrolment rate from 9.76% to 20% while India's enrolment increased by less than merely 2%.

Figure 2: Gross enrolment ratio: India versus China 1971-2016



Data Source: UNESCO, UIS Statistics Data  
 Note: For China, data is available for 1970 (0.13), not 1971.

More importantly, China is close to achieving universalised higher education within 15 years of entering the mass stage of development. The drastic increase in China's GER is due to increased higher education funding in the last two decades.<sup>25</sup> Besides, it is easier to achieve scale in China as the students are concentrated in a smaller number of universities. For instance, Indian HEIs, on average, have about 690 students. Chinese HEIs, on the other hand, have 16,000 students per HEI. As we discovered in Section 1, the low student count per HEI in India is a result of a conscious move to develop small, high-quality institutions. This has resulted in a fragmented system that is hard to manage.

In the recent past, the Yash Pal Committee (2009) and the Draft National Education Policy 2016 (DNEP16) have called for clustering colleges in a geographic area to create small universities that are easier to manage. The effect of clustering on the governance and quality of such institutions is examined in greater detail in Chapter 2. However, clustering could help in scaling up the higher education system. Experiences from China and developed countries suggest that bigger HEIs with a high student count are easier to manage.<sup>26</sup>

## 1.3 Enrolment

The exponential growth of the higher education sector has been due to the increased demand for higher education. Though the sector has grown across all levels and disciplines, some degrees and programmes have grown faster than the others. We examine this growth and its implications in greater detail below.

### 1.3.1 Enrolment by discipline

According to the AISHE 2018-19, 264 different programmes are offered by HEIs in India across all levels. However, 10 programmes account for more than 76% of all enrolments (Table 2). Of these, just three programmes- Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.) and Bachelor of Commerce (B.Com.) make up 50% of all enrolments. These 'traditional' programmes are three-year-long courses, usually run by affiliated colleges. There is limited scope for innovation in terms of curriculum in traditional degrees as the syllabus is prescribed by the affiliating university. The university also conducts a common exam for all its affiliated colleges.

**Table 2: 10 Most popular programmes (2018-19)**

Programme	Number of Students Enrolled	Percentage of Total Enrolment (%)
B.A.-Bachelor of Arts	93,49,287	25.90%
B.Sc.-Bachelor of Science	46,80,159	12.96%
B.Com.-Bachelor of Commerce	40,30,325	11.16%
B.Tech.-Bachelor of Technology	21,25,043	5.89%
B.E.-Bachelor of Engineering	16,45,906	4.56%
B.A.(Hons)-Bachelor of Arts (Honours)	16,39,796	4.54%
M.A.-Master of Arts	15,12,814	4.19%
B.Ed.-Bachelor of Education	12,23,858	3.39%
M.Sc.-Master of Science	6,97,217	1.93%
M.B.A. - Master of Business Administration	5,88,833	1.63%

Data Source: AISHE (2018-19)

Note: Programme titles include sub-disciplines in each category. For instance, B.E. includes all disciplines of engineering.

<sup>25</sup> British Council (2014): *A Brief Overview of Chinese Higher Education System*, available at <[https://www.britishcouncil.in/sites/default/files/higher\\_education\\_system\\_of\\_china.pdf](https://www.britishcouncil.in/sites/default/files/higher_education_system_of_china.pdf)>

<sup>26</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

'Professional programmes' like Bachelor of Engineering (B.E.), Bachelor of Technology (B.Tech.) account for close to 10.5% of all enrolments. Most professional programmes are run by private institutions and are significantly more expensive than the three-year programmes.<sup>27</sup> Data from the regulator, the All India Council for Technical Education (AICTE) shows that the enrolment (1.84 million) for its courses is at 50% of the sanctioned intake (3.61 million).<sup>28</sup> Such a big gap between intake and enrolment points to saturation of interest in professional programmes.

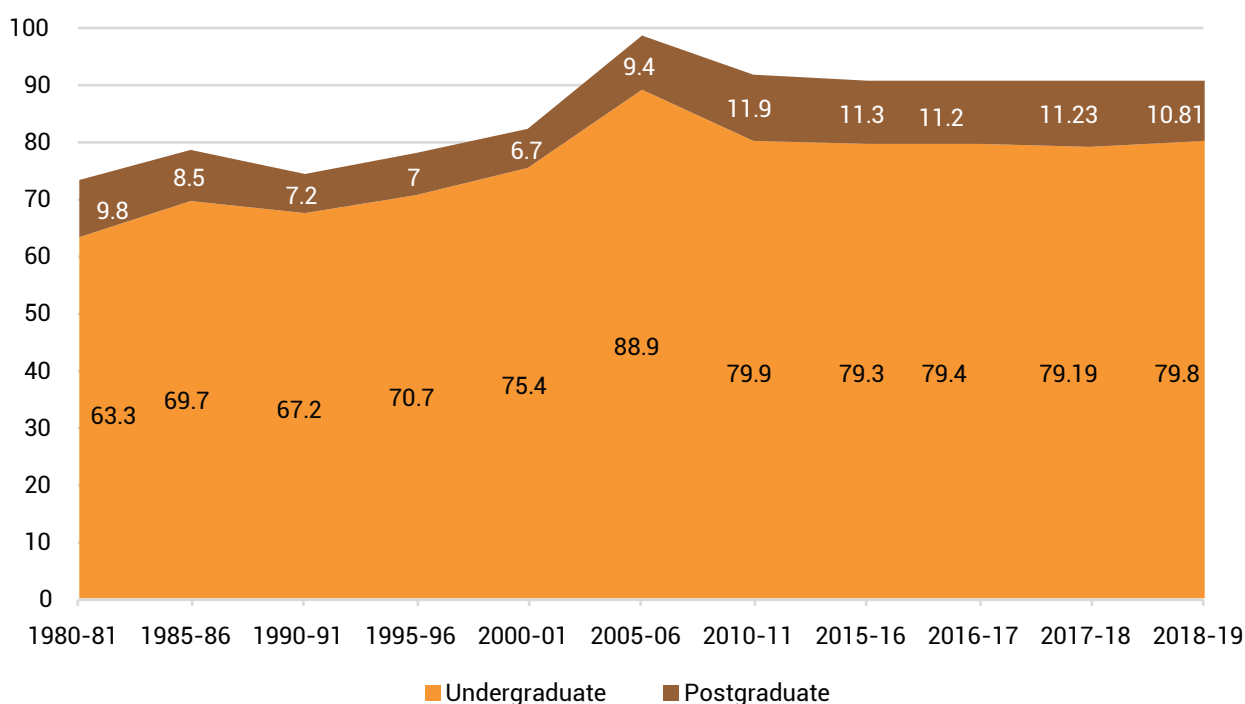
However, the growth of diploma programmes suggests that affordability may be an issue in the reduced demand for professional courses. Diplomas are vocational courses offered by polytechnics in different branches of engineering, pharmacy, hotel management, computer science, to name a few. Unlike college degrees which require students to pass 12th grade, diplomas admit students who have passed the 10th grade. They are six-

month to three-year programmes and are diluted versions of degrees.<sup>29</sup> Enrolments in diploma programmes have grown exponentially in the last decade. From 1% of total enrolments in 2005, they now account for 7.22% of all enrolments (2018-19). The growth in enrolment for diplomas appears to be at the cost of undergraduate degree programmes<sup>30</sup> whose share has fallen from 89% in 2005 to 79.76% in 2018-19 (AISHE).

### 1.3.2 Enrolment by level

Postgraduate enrolments have more than doubled since 2009-10. However, undergraduate programmes make up a clear majority of enrolments in India. According to the AISHE (2018-19), undergraduate enrolments account for close to 80% of all enrolments in India. With around four million students enrolled, postgraduate programmes are a distant second at 11%.<sup>31</sup> As shown below, the proportion of postgraduate enrolments has seen a slight increase in the last decade.<sup>32</sup>

Figure 3: Level-wise enrolment as percentage of total enrolment



Data Source: UGC (2008) and AISHE (various years)

<sup>27</sup> British Council (2014): *A Brief Overview of Chinese Higher Education System*

<sup>28</sup> AICTE, available at < <https://www.facilities.aicte-india.org/dashboard/pages/angulardashboard.php#!/graphs>>

<sup>29</sup> Mehrotra, Sunil, *The Employability of Tertiary Level Graduates in India* in N V Varghese and Garima Malik (eds), *India Higher Education Report 2015*

<sup>30</sup> Varghese N V (2015), *Challenges of Massification of Higher Education in India*, CPRHE Research Paper Series No. 1

<sup>31</sup> AISHE 2018-19

<sup>32</sup> UGC Annual Report, 2009-10

As the trend in undergraduate programmes, the Master of Arts (4.1%), Master of Sciences (1.9%) and Master of Business Administration (MBA) (1.6%) are among the most popular programmes at the postgraduate level. Interestingly, the MBA is the third most popular postgraduate programme, even above Commerce (1.1%). The popularity of MBA programmes can be attributed to the higher rate of employment of MBA graduates. According to placement data from the AICTE, placement rates for MBAs (~40%)<sup>33</sup> are among the highest. It is comparable to or higher than many popular engineering disciplines.<sup>34</sup>

At the postgraduate level, general programmes and those with high chances of employment are the most popular. Research degrees account for a very small proportion of enrolments. This is borne out by the fact that the proportion of PhD enrolments to total enrolment has fallen in the last decade. Though the number of PhD enrolments has doubled in the last five years, its share in total enrolment has actually fallen.

**Table 3: Growth in PhD enrolments (1980- 2019)**

Year	Total Number of PhDs Enrolled	Percentage of Total Enrolment
1980-81	26,820	0.9
1985-86	27,020	0.7
1990-91	34,230	0.7
1995-96	38,520	0.6
2000-01	48,050	0.5
2005-06	70,579*	0.64*
2010-11	77,798	0.28
2015-16	1,26,451	0.37
2016-17	1,41,037	0.4
2017-18	1,58,363	0.4
2018-19	1,69,170	0.45

Data Source: UGC (2008) and AISHE, various years

\*Refers to enrolment in 'research programmes' rather than just PhD

The disparity in undergraduate and postgraduate enrolment is due to a lack of capacity in Indian HEIs. According to the AISHE (2018-19), only 34.9% of all HEIs run postgraduate programmes and just 2.5% of HEIs run PhD programmes. Further, 34.8% of all colleges in India run a single programme, and close to 83% of these are privately managed. In addition to this, the poor quality of postgraduate education in India is illustrated by the increasing number of Indian students pursuing postgraduate programmes abroad.

According to 2016 estimates, 2,78,383 Indian students were pursuing tertiary education in other countries, almost double the number from 2005-06.<sup>35</sup> This meant that Indian students studying abroad accounted for 1% of India's total enrolment.<sup>36</sup> However, a clear majority of Indian students abroad are studying at the postgraduate level.<sup>37</sup> Overseas Indian students accounted for almost 7% of postgraduate enrolment in India.<sup>38</sup> This is despite the fact that higher education in many of the top destination countries is far more expensive than in India.

The low rate of postgraduate enrolment points to a serious need to improve both the quality and capacity of postgraduate programmes in India.

### 1.3.3 Recommendations

#### a. Expand capacity in postgraduate education

There is an urgent need for greater investment in postgraduate education in India. The effort must be led by the government as the private sector has not expanded its capacity sufficiently at the postgraduate level. Private institutions find it commercially unfeasible to run postgraduate programmes<sup>39</sup> except for a few professional programmes like management and engineering. The Medical Council of India recently mandated that all medical colleges must also have postgraduate departments.<sup>40</sup> Expanding such requirements to other fields where there is a paucity of postgraduates may help bridge the gap.

<sup>33</sup> Includes PG diplomas

<sup>34</sup> The MBA placement rate (40%) is higher than computer (35%) and mechanical (34%) engineering programmes, but lower than the electronics (42%) engineering programme. Available at <<https://www.facilities.aicte-india.org/dashboard/pages/angulardashboard.php#!/graphs>>.

<sup>35</sup> UNESCO Institute for Statistics (UIS), 2016

<sup>36</sup> Also known as Outbound Mobility Ratio

<sup>37</sup> M.M Advisory Services, "Indian Students Mobility Report 2016"

<sup>38</sup> Authors' estimates

<sup>39</sup> Varghese N V (2015), *Challenges of Massification of Higher Education in India*, CPRHE Research Paper Series No. 1

<sup>40</sup> Pushpa, N. (2018, April 11). All medical colleges will have to start PG courses by 2020. *The Times of India*.



### b. Incentivise postgraduate education and research

It is important to incentivise postgraduate education to make teaching and research a more attractive proposition. The recent move to award fellowships to PhD students in Indian Institutes for Technology (IITs) and the Indian Institute of Science (IISc) is welcome.<sup>41</sup> These fellowships are currently limited to the sciences and engineering. The government must look to expand this programme to other institutions as well.

### c. Diversify course offerings in HEIs

The high rate of enrolment in three-year programmes suggests a need to diversify the programmes in most HEIs. Universities should look to limit the number of three-year programmes and expand capacity in emerging areas and new programmes for their affiliate colleges. Courses in existing three-year programmes should be tweaked to incorporate more vocational skills to prepare students for the job market.

## 1.4 Graduation and employment

The increasing enrolment in higher education means that a greater number of students are graduating from HEIs

in India, which in turn implies that an increasing number of graduates are entering the workforce. However, given that most students pursue three-year programmes, it is not easy for them to enter the job market. We discuss some of the challenges associated with the current pattern of graduation and employment below.

### 1.4.1 Graduation

Across all programmes, the average pass percentage for a student appearing in exams in India is 74.3%.<sup>42</sup> Pass percentages for the top 10 programmes by the number of graduating students are listed below. As in the case of enrolments, the top 10 graduating programmes account for 78% of all graduates. In general, science and technology programmes have a higher pass percentage as compared to other disciplines.

In accordance with their enrolment rates, almost 50% of the graduates are from three-year programmes. The total pool of graduating students across all disciplines and levels in 2018-19 was 9.09 million. However, the organised sector of the economy is estimated to be around 50 million. As we see in the next section, many of the graduates for three-year programmes end up working in the unorganised sector of the economy.

Table 4: Pass percentages of top 10 programmes (2017-18)

Programme	Number Appeared	Number Passed	Pass Percentage
B.A.-Bachelor of Arts	26,48,205	18,63,049	70.35
B.Sc.-Bachelor of Science	12,85,737	9,53,586	74.16
B.Com.-Bachelor of Commerce	12,53,419	8,91,942	71.16
M.A.-Master of Arts	7,69,849	5,80,637	75.42
Diploma	7,51,729	5,07,626	67.52
B.E.-Bachelor of Engineering	5,04,931	4,25,156	84.2
B.Ed.-Bachelor of Education	5,16,576	4,17,965	80.91
B.Tech.-Bachelor of Technology	5,06,012	3,93,046	77.67
B.A.(Hons)-Bachelor of Arts (Honors)	3,88,660	3,10,277	79.83
M.Sc.-Master of Science	3,29,139	2,49,853	75.91

Data Source: AISHE (2017-18)

<sup>41</sup> Kunju S., S. (2017, August 21). IIT, IISc PhD Researchers To Get Rs. 70,000 Monthly Central Fellowship. NDTV.

<sup>42</sup> AISHE 2018-19

## 1.4.2 Employment

Though India has one of the largest education systems in the world, its contribution to the workforce is only marginal. According to one estimate, only 10% of India's workforce is educated up to the tertiary level.<sup>43</sup> The organised sector, which most graduates expect to enter, makes up only 15% of the market.<sup>44</sup> In this section, we explore two issues in relation to the employment of graduates. First is the employment of these graduates in the organised sector. Second is the question of employability of the graduates produced by Indian HEIs.

### a. Employment rate of graduates

Three-year programmes account for half of all Indian graduates. However, the training in these courses is very general. Traditionally, graduates from these programmes applied for government jobs.<sup>45</sup> However, since the growth in enrolment has far outpaced the increase in government jobs<sup>46</sup>, they turn to the private sector for employment. Unlike technical colleges, only a few elite three-year colleges have placement cells that foster closer linkages between the institution and industry, leaving graduates with no obvious pathways to enter the job market.

It is difficult to assess the level of unemployment for graduates of three-year degree programmes as these colleges do not record placement data. However, statistics from employment exchanges are a useful indicator.<sup>47</sup> In 2013, there were 9 million graduates who had signed up on employment exchanges around the country. Of these, close to 8 million were graduates of four programmes viz., Arts (3.7 million), Science (1.7 million), Commerce (1.3 million) and Education (1.38 million). In total, graduates from the four programmes accounted for 89% of all registrations in employment exchanges in India. Certainly, job exchanges are one of the many platforms available to job seekers.

But the fact that only 3,49,000 job seekers were placed in 2014 suggests that the unemployment rate among three-year graduates is quite high. As a result, many of the graduates from three-year programmes end up working in the unorganised sector for lesser pay in non-permanent jobs.<sup>48</sup>

Technical programmes, on the other hand, are popular based on the perception that graduates of these programmes find employment more easily. Colleges often advertise their placement rates to attract prospective students. Students also pay a premium to attend such colleges.<sup>49</sup> However, data from the AICTE suggests that the placement rates in these institutions are not very high. Of the 1.84 million enrolled students, only 33% (6,15,539) students were placed in 2016-17.<sup>50</sup>

It must be noted that placement data only captures those students who find employment through the college placement cell. It does not account for students who find jobs through other means and those who pursue further education. The latter is an increasingly popular choice but is only a small fraction of the total number of graduates. The placement-to-enrolment percentage is also not an accurate measure as it does not account for dropouts. Another estimate places the total unemployment rate of educated engineers at 48%.<sup>51</sup>

In both general and technical courses, the unemployment rate is quite high. The Employment-Unemployment survey notes that the unemployment rate increases with the level of education in India. The survey also finds that this is because graduates cannot find work commensurate to their education and salary expectations.<sup>52</sup> Graduates may also have the economic wherewithal to remain unemployed in search of a suitable job as opposed to those with lesser education.<sup>53</sup>

<sup>43</sup> Mehrotra, Sunil, *The Employability of Tertiary Level Graduates in India* in N V Varghese and Garima Malik (eds), India Higher Education Report 2015

<sup>44</sup> Ministry of Labour, "Quarterly Report on Employment Scenario in Selected Sectors", March 2018, available at <[http://labourbureau.gov.in/QES\\_7th\\_round\\_Report\\_final\\_12032018.pdf](http://labourbureau.gov.in/QES_7th_round_Report_final_12032018.pdf)>

<sup>45</sup> Mehrotra, Sunil, *The Employability of Tertiary Level Graduates in India* in N V Varghese and Garima Malik (eds), India Higher Education Report 2015

<sup>46</sup> Mehrotra, Sunil, *The Employability of Tertiary Level Graduates in India* in N V Varghese and Garima Malik (eds), India Higher Education Report 2015

<sup>47</sup> Khare, M. (2014). Employment, employability and higher education in India: The missing links. *Higher Education for the Future*, 1(1), 39-62

<sup>48</sup> Mehrotra, Sunil, *The Employability of Tertiary Level Graduates in India* in N V Varghese and Garima Malik (eds), India Higher Education Report 2015

<sup>49</sup> British Council (2014): *A Brief Overview of Chinese Higher Education System*

<sup>50</sup> AICTE

<sup>51</sup> United Nations Development Programme, "India Skills Report 2018", available at <[http://www.in.undp.org/content/dam/india/docs/poverty/india-skills-report-2018\\_undp.pdf](http://www.in.undp.org/content/dam/india/docs/poverty/india-skills-report-2018_undp.pdf)>

<sup>52</sup> Ministry of Labour, "Report on Fifth Annual Employment-Unemployment Survey (2015-16)"

<sup>53</sup> Mehrotra, Sunil, *The Employability of Tertiary Level Graduates in India* in N V Varghese and Garima Malik (eds), India Higher Education Report 2015

## b. Employability

Various industry surveys in the last few years have found that between 10% to 40% of engineering graduates are employable depending on the role.<sup>54</sup> India Skills Report 2018 finds that employability across disciplines is at 45%. The report found that engineering and pharmacy graduates are the most employable while those from general three-year programmes are the least employable. In the last five years, the India Skills Report has found an increase in employability of more than 10%.

Employability surveys measure skills required at the workplace. In addition to a lack of technical skills, in many cases, these tests have found poor communication and language skills among recent graduates.<sup>55</sup> To address the skills gap in fresh hires, many companies invest in lengthy training programmes which often retrace basic concepts. Training programmes in companies that hire freshers *en masse* can run from a few months to a year. This retraining has also spun off into businesses, with many companies offering to train and certify recent graduates of engineering programmes for the job market.<sup>56</sup>

The skill gap and unemployment rate for graduates point to two problems in the higher education system. First is the woeful lack of quality in many colleges in India, which we explore in Section 5. Second is the disconnect between education in colleges and the skills required in a workplace. The best colleges in India can place their graduates due to strong linkages with the industry and by creating space for internships in their curriculum. AICTE has recently mandated compulsory internships for all students in engineering colleges.<sup>57</sup> Though there is a high interest among students to sign up for internships, job providers are less enthusiastic about the prospect.<sup>58</sup> In this respect, the regulators have an important role to play in encouraging companies to invest in training of prospective employees from an early stage.

## 1.4.3 Recommendations

### a. Promote linkages between HEIs and industry

Many technical programmes have strong linkages with the industry as they rely on HEIs for their hires. Introducing vocational courses in three-year programmes can help bridge the skills gap in comparison to other professional courses. These courses can be designed in partnership with employers in the region to respond to the local demand for skilled workers.

### b. Create more pathways to employment in the organised sector

Mandating internships could help in familiarising students with the skills necessary to gain employment. If the AICTE programme to make internships compulsory is successful, it can be extended to other streams as well. For graduates of vocational programmes, the National Apprenticeship Promotion Scheme is a good example of gaining valuable work experience. The scheme offers subsidies to employers who hire students for short term apprenticeships. But the India Skills Report points to a lack of awareness about the scheme.<sup>59</sup>

## 1.5 Quality of institutions

A recurring theme through this chapter has been the quality of HEIs in India. In this section, we first map the quality assurance framework for HEIs and then analyse the latest data from the National Assessment and Accreditation Council (NAAC) to provide an understanding of the quality of HEIs in India.

### 1.5.1 Quality assurance framework

As the higher education regulator, one of the University Grants Commission's (UGC) functions is to monitor the quality of HEIs in India.<sup>60</sup> However, the UGC has not been able to perform this role adequately.<sup>61</sup> The UGC's power to inspect colleges does not include the power

<sup>54</sup> See, for instance the Aspiring Minds, National Employability Report Engineers (2016), available at <<https://www.aspiringminds.com/sites/default/files/National%20Employability%20Report%20-%20Engineers%20Annual%20Report%202016.pdf>>

<sup>55</sup> Aspiring Minds, National Employability Report Engineers (2016)

<sup>56</sup> See for instance, the Employability Proficiency Training Programme run by a company called Livewire, available at <[https://www.livewireindia.com/employment\\_proficiency\\_program\\_training.php](https://www.livewireindia.com/employment_proficiency_program_training.php)>

<sup>57</sup> Nanda, P. K. (2018, January 25). AICTE reduces theory burden, mandates internship for engineering students. *Live Mint*.

<sup>58</sup> United Nations Development Programme, "India Skills Report 2018"

<sup>59</sup> United Nations Development Programme, "India Skills Report 2018"

<sup>60</sup> NAAC, "A Decade of Dedication to Quality Assurance" (2005)

<sup>61</sup> This aspect has been discussed at length in Chapter 5.

to act against errant HEIs. This is by design, as the Radhakrishnan Commission sought to keep HEIs free from external influence.<sup>62</sup> The power to derecognise colleges rests with the affiliating university. The UGC publishes an annual list of 'fake universities' and 'fake colleges' that operate without recognition but does not have the power to directly act against such HEIs.

In addition to penalising HEIs that flout norms, quality assurance is necessary to reward high performing colleges. Many of the UGC's functions such as funding and granting autonomy require an objective assessment of quality.<sup>63</sup> Traditionally, decisions on funding and granting autonomy were made based on inspections by the UGC. However, the UGC has not been able to keep pace with the exponential growth of the higher education sector. Reports of corruption, especially in granting deemed-to-be university status to HEIs in the last decade underscore the need for a more objective assessment.<sup>64</sup> Accreditation agencies have filled this gap and the UGC is increasingly reliant on assessments to make many of its decisions.

There are two major accreditation bodies for higher education in India, NAAC and the National Board of Accreditation (NBA). NAAC assesses all colleges irrespective of their disciplinary focus. NBA, on the other hand, is limited to technical programmes such as engineering and management. The NBA also accredits individual courses rather than the institution. Both assessments are now mandatory: the UGC has made NAAC assessments compulsory for all HEIs that apply for funding and the AICTE recently announced that at least half the programmes run by an HEI must be accredited by the NBA.<sup>65</sup>

The problem with making assessments compulsory is that the accreditation agencies lack the capacity to assess all the HEIs in India. As of October 2017, only 5,742 or 14% of all HEIs in India have valid NAAC accreditation.<sup>66</sup> To bridge the gap, the DNEP16 and DNEP19 recommended certifying external agencies to conduct assessments.<sup>67</sup> The National Council for Teacher Education recently tied up with an external agency, the Quality Council of India

to conduct assessments for teacher training colleges.<sup>68</sup> Outsourcing assessment to external agencies would mean that the role of the regulators would change. They would have to set clear guidelines for accreditation agencies and establish a uniform methodology; DNEP19 envisions that this responsibility would lie with NAAC. The UGC so far has primarily relied on NAAC to conduct its assessments. It remains to be seen if private players would be allowed into the accreditation process. Chapter 5 describes recent recommendations made by different committees and draft policies to increase accreditation capacity.

### 1.5.2 NAAC and HEI performance

As mentioned above, a small proportion of HEIs have NAAC accreditation. NAAC process is still largely voluntary since only HEIs applying for UGC funding or obtaining for autonomy need mandatory accreditation. Outside of these two categories, several private HEIs advertise their NAAC grades as a certification of quality to attract prospective students. This naturally excludes low-quality HEIs which would not voluntarily sign up for accreditation at the risk of losing recognition. Hence the data presented below is likely to be skewed in favour of better performing colleges.

The methodology used by NAAC is undergoing an overhaul in response to criticism. The old methodology relied heavily on on-site visits which left room for a lot of subjectivity in the assessment.<sup>69</sup> The new methodology is based on self-disclosure and incorporates student feedback.<sup>70</sup> Despite its shortcomings, NAAC assessments provide an indication of the quality of a large set of institutions and make decision-making more objective.

In NAAC accreditation process, HEIs are graded on a scale of 1 to 4. Institutions with a score of greater than 3 are considered 'Good'. These institutions are usually eligible for autonomy and funding from the UGC. HEIs with a score less than 1.5 lose their accreditation while those with a score between 1.5 and 2 receive a warning. Figure 4 shows the distribution of institutions by NAAC grade.

<sup>62</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

<sup>63</sup> See for instance the Deemed University Regulations (2016), which mandate a NAAC score of more than 3

<sup>64</sup> Tandon Committee (2009): *Report of the Committee for Review of Existing Institutions Deemed To Be Universities*

<sup>65</sup> See AICTE Notification Dated 29th January, 2014, available at <[https://www.aicte-india.org/downloads/mandatory\\_accreditation\\_regulation\\_290114.PDF](https://www.aicte-india.org/downloads/mandatory_accreditation_regulation_290114.PDF)>

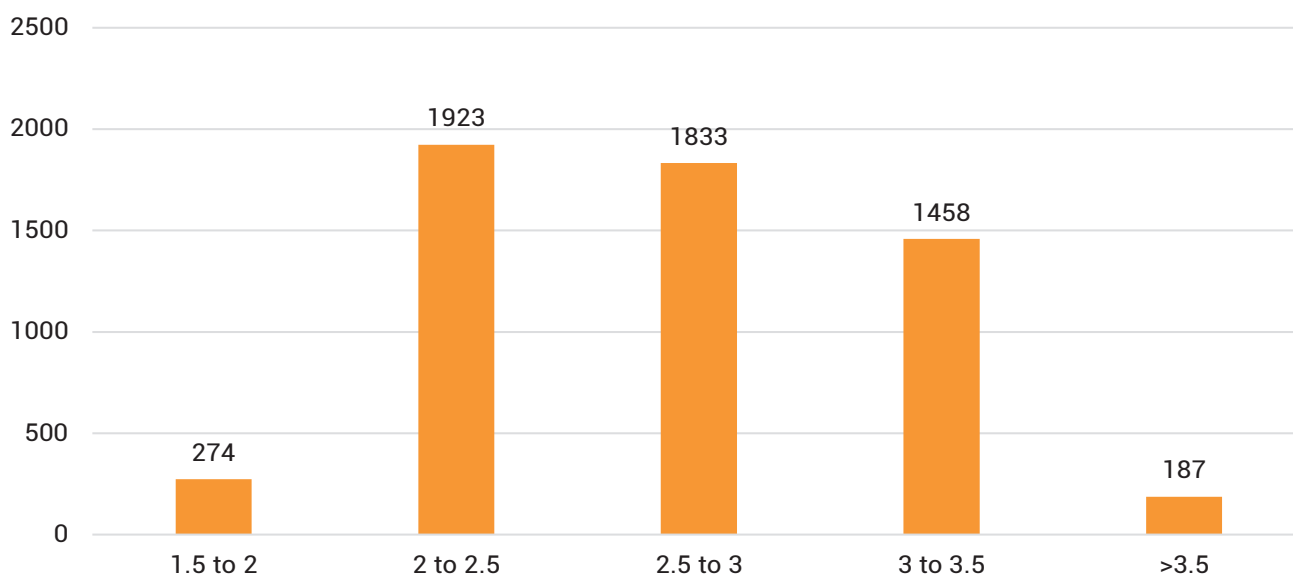
<sup>66</sup> This does not account for standalone institutions which are not accredited by the NAAC. When added, the number comes down to 10%

<sup>67</sup> Ministry of Human Resource Development, "Draft National Education Policy 2016"

<sup>68</sup> "Ranking of Teacher Education", Press Information Bureau, 17 July 2017, <<https://pib.gov.in/newsite/PrintRelease.aspx?relid=167479>>

<sup>69</sup> NAAC's Assessment and Accreditation process and methodology are detailed in Chapter 5.

<sup>70</sup> The Revised Methodology can be found at <<http://naac.gov.in/docs/Revised%20Accreditation%20Framework%20for%20Website%2027%20July%202017.pdf>>

**Figure 4: Number of institutions by National Assessment and Accreditation Council grade**

Data Source: NAAC (2017).

Note: Based on a list of institutions with valid accreditations, therefore, those with a score of 1.5 and below are excluded.

About 65% of the accredited HEIs can be found in the 2 to 3 range. About 29% of all accredited HEIs have a score greater than 3 and can be considered of 'good' quality as per NAAC; however, these institutions represent just 4% of all HEIs in the country. There is a need to improve the quality of a large number of middling quality HEIs. One proposal to do so is by clustering smaller colleges to create more manageable HEIs.<sup>71</sup>

### 1.5.3 Recommendations

#### a. Upgrade accreditation capacity

The two accreditation agencies together have assessed a very small number of HEIs in India. There is a need for more players in the sector as NAAC does not have the capacity to assess all the HEIs in India. Accreditation is not usually carried out by government bodies like NAAC in other countries. Certifying quality assurance agencies to carry out the assessments will add significant capacity.

#### b. Clustering colleges

A large number of colleges rated 2 to 3 on NAAC scale suggests that there is a need to closely scrutinise the

upgradation in quality of institutions. This task would be much simpler with fewer HEIs to oversee. Clustering HEIs will help make them more manageable.

## 1.6 Faculty

The teaching and research professions go hand in hand in India. From the very beginning, universities were planned to be research hubs and teachers were expected to have a strong research record.<sup>72</sup> The Radhakrishnan Commission (1949), for instance, noted that 'research [...] is not merely an additional casual activity of a university teacher which he may if he so chooses to omit, it is an essential part of his function'.<sup>73</sup> Many commissions since have reinforced the idea that research is an essential component of a teacher's job and a core function of the university.<sup>74</sup>

A direct consequence of low enrolments in postgraduate programmes is the shortage of qualified teachers in the higher education system. Hence, in this section, we focus on studying the growth of teachers in Indian HEIs, which further gives us a sense of the growth of research in institutions, covered in Chapter 4.

<sup>71</sup> Yash Pal Committee (2009): *Report of the Committee to Advise on Renovation and Rejuvenation of Higher Education*

<sup>72</sup> Matthew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>73</sup> Ministry of Education, "The Report of the University Education Commission (December 1948-August 1949) Volume 1", (1st Reprint 1962). Referred to as Radhakrishnan Report.

<sup>74</sup> See for instance, National Policy on Education 1986.

### 1.6.1 Teacher growth and minimum qualifications

As discussed previously, the growth of the higher education sector post-independence was primarily through government institutions. Their growth was planned and controlled with a view to maintain the quality of HEIs. This thinking also extended to the teaching profession. After the government-funded expansion in the 1950s and 1960s, the number of teachers grew at a steady, slow rate until 1990-1991 (Figure 5). This slow expansion was a result of government policy that mandated research or doctoral degrees as a minimum qualification to enter and advance in the teaching profession.

For instance, the Radhakrishnan Committee noted that lecturers (entry-level position) “should ordinarily have started as a Research Scholar or Fellow who may have his PhD”.<sup>75</sup> For higher positions, such as Reader or Professor, a PhD was mandatory. This was despite the fact that there were fewer than 100 PhD holders in India at the time.<sup>76</sup> Even as the number of HEIs and teachers increased through the affiliated model<sup>77</sup> in the 1950s and 1960s, the government sought to maintain a high threshold for entrance into the teaching profession. The Model Act Committee (1964) for instance stated that college and university teachers should have the same qualifications.<sup>78</sup> With a view to maintaining quality, the committee recommended revoking the recognition of colleges if applicants with high qualifications are rejected at the expense of those with lower qualifications.<sup>79</sup>

Figure 5: Teaching staff (in lakhs)



Authors' compilation based on data from UGC (2018) and AISHE, various years

<sup>75</sup> Ministry of Education, "The Report of the University Education Commission (December 1948-August 1949) Volume 1", (1st Reprint 1962). Referred to as Radhakrishnan Committee Report.

<sup>76</sup> Tilak, J. B., & Mathew, A. (2016). Promotion in academic profession in India: Upward mobility of teachers in higher education. *Asia Pacific Journal of Educators and Education*, 31

<sup>77</sup> See Chapter 2

<sup>78</sup> Ministry of Education, "Report of the Committee on a Model Act for Universities", *Minerva* 4(1) (September 1965)

<sup>79</sup> Ministry of Education, "Report of the Committee on a Model Act for Universities", *Minerva* 4(1) (September 1965)

The Sen Committee on the Governance of Universities and Colleges (1973) continued the policy of requiring a research degree to be appointed as a teacher. It stated that “a master’s degree alone would not suffice for the selection of a lecturer”.<sup>80</sup> Instead it recommended an M.Phil or a PhD as an essential requirement for recruitment to improve the quality of teaching.<sup>81</sup> The National Commission on Teachers for Higher Education in 1985 also endorsed a research degree as a minimum qualification to enter the teaching profession.<sup>82</sup> It further recommended an All India Test to select the best teachers.<sup>83</sup>

The Mehrotra Committee built on this proposal and recommended the National Eligibility Test (NET).<sup>84</sup> Conducted by the UGC, the NET is a minimum requirement for full time appointment as faculty in HEIs. Many states conduct a similar test at the state level. Importantly, the Mehrotra Committee also reduced the minimum qualifications to a master’s degree rather than a research or doctoral degree.<sup>85</sup> It noted that the high standard of a research or doctoral degree was neither followed, nor did it maintain a high-quality of instruction.

However, this did not lead to an immediate increase in the number of teachers. There was a de-facto freeze on teacher hiring in the 1990s, a direct consequence of reduced government spending on higher education post liberalisation.<sup>86</sup> There was then a dramatic increase in the number of teachers post 2000-2001 (Figure 5). This growth was driven primarily by private HEIs which also account for most of the enrolments. Most of these jobs have been as contract hires with limited scope for advancement or stable employment. The growth in teachers has not kept pace with the increase in enrolments.

## 1.6.2 Research in universities

Research has always been an important part of a university’s function in India. In addition to their role in imparting knowledge, the Radhakrishnan Committee envisioned universities as centres for the production of knowledge.<sup>87</sup> With this in mind, the Committee recommended that universities create a space for those who are interested in research “without being encumbered with teaching or other kinds of routine duties”.<sup>88</sup> However, the responsibility of carrying out research was not limited to such Research Fellows.

Research and scholarship were conditions for mid and senior-level teaching positions within the university as per the Radhakrishnan Committee. Both the Sen Committee and the NCT-HE also stressed the need for a body of published research as an essential condition for promotion.<sup>89</sup> The Mehrotra Committee drew an important distinction noting that a research degree is not necessary for appointment. But it was a necessary condition for promotion.

Research was also seen as an extension of postgraduate and doctoral education. Hence, it was seen as a core function of the university.<sup>90</sup> However, most research in India actually happens in stand-alone research institutions, outside of the university system (Chapter 4). Many government committees have taken a dim view of this development, pointing to a lost opportunity in developing synergies between teaching and research. The Yash Pal Committee stated that universities had been reduced “to centres that teach and examine masses”.<sup>91</sup> This claim is not without merit. As we noted earlier, only 34.9% of HEIs in India run postgraduate programmes while just 2.5% run PhD programmes.<sup>92</sup>

<sup>80</sup> Excerpt of the Sen Committee Report from UGC, “Report of the Committee to Review the Pay Scales of University and College Teachers”, (1997), available at <<http://krishikosh.egranth.ac.in/bitstream/1/2041455/1/CCS330.pdf>>

<sup>81</sup> Sen Committee Report (1997): *Report of the Committee to Review the Pay Scales of University and College Teachers*

<sup>82</sup> Tilak, J. B., & Mathew, A. (2016). Promotion in academic profession in India: Upward mobility of teachers in higher education. *Asia Pacific Journal of Educators and Education*, 31

<sup>83</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>84</sup> UGC note on Review of NET, available at <[https://www.ugc.ac.in/netpdf/net\\_review%20mungekar.pdf](https://www.ugc.ac.in/netpdf/net_review%20mungekar.pdf)>

<sup>85</sup> See the Government Notification establishing master’s degree as a minimum qualification based on the recommendation of the Mehrotra Committee < <https://www.ugc.ac.in/oldpdf/PSOrders/1986.pdf>>.

<sup>86</sup> Tilak, J. B., & Mathew, A. (2016). Promotion in academic profession in India: Upward mobility of teachers in higher education. *Asia Pacific Journal of Educators and Education*, 31

<sup>87</sup> Radhakrishnan Committee (1949): *The Report of the University Education Commission*

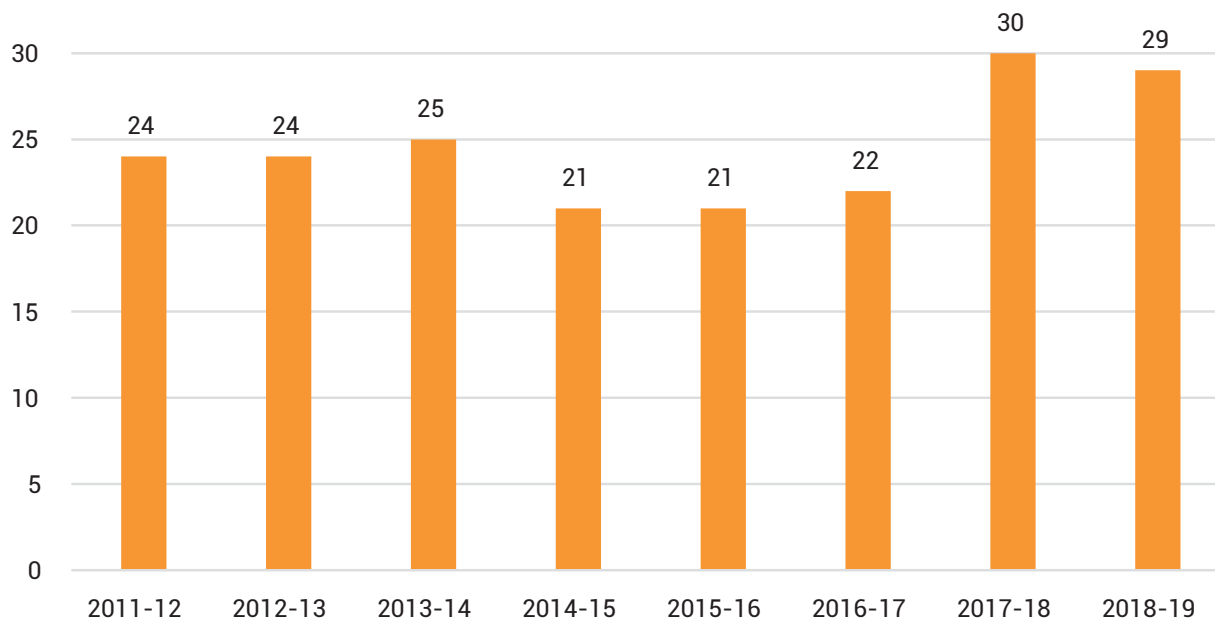
<sup>88</sup> Radhakrishnan Committee (1949): *The Report of the University Education Commission*

<sup>89</sup> Tilak, J. B., & Mathew, A. (2016). Promotion in academic profession in India: Upward mobility of teachers in higher education. *Asia Pacific Journal of Educators and Education*, 31

<sup>90</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>91</sup> Yash Pal Committee (2009): *Report of the Committee to Advise on Renovation and Rejuvenation of Higher Education*

<sup>92</sup> AISHE 2018-19

**Figure 6: Student Teacher Ratio (2011-18)**

Data Source: UGC (2018) and AISHE, various years

This trend is also a consequence of distinct funding structures of research centres and big universities. The former are largely independent, small and well-funded institutions. The latter are dependent on the government for their operational expenses. With the exception of a few elite institutions, most universities in India do not have research centres or departments. We examine the effect of this long-term shift towards standalone research centres in greater detail in Chapter 4.

### 1.6.3 Teacher shortages

According to the AISHE 2018-19, the Indian higher education system has a student teacher ratio of 29, a sharp rise from 21 in 2014-15 (Figure 6). The student teacher ratio for the United States in 2015 was 12.35, whereas Brazil's was 19.4.<sup>93</sup> Amplifying the problem of teacher shortages in the Indian higher education system, even elite institutions such as the IITs and IIMs report teacher shortages as high as 30%.<sup>94</sup> However, there is little meaningful data to analyse the problem in greater detail at the institution-level.

In this section, we look into both issues in some detail. We first look at the problems in teacher data given the recent disparities in the AISHE. Second, we attempt to identify the problems that lead to teacher shortages.

#### a. Data on teachers

The number of teachers in India grew consistently since the 1950s. However, the AISHE has reported a dramatic fall in teacher numbers in the last two years. The survey has cited the use of a new 'Teacher Information Format' (TIF) of data collection to explain this sudden drop.<sup>95</sup> After the initial spurt in the number of teachers in the 1950s and 1960s, the number of teachers grew at a steady rate until 2000-2001. In the next decade, the number of teachers more than doubled from 3,50,000 to 8,17,000. From 2010 to 2018, more than 4,50,000 teachers have been added to the system. However, from a peak of 15.2 lakh in 2015-16, the higher education system has lost around 2,30,000 teachers over the last two years. The reasons for this fall are not immediately apparent.

The government has indicated that there may be problem with the newly instituted TIF process which collects data directly from teachers rather than the institution. Two changes introduced with the use of the TIF could explain the sudden fall in the number of teachers. First, AISHE 2017-18 does not use pooled data to estimate the total number of teachers.<sup>96</sup> From 2010-11 to 2016-17, teacher data also included a pooled component, which was an estimation based on previous years' data. This was used for institutions whose data was not available for that particular

<sup>93</sup> World Bank Data

<sup>94</sup> In 2018, the teacher shortage at IITs was estimated to be 34%

<sup>95</sup> AISHE 2018-19

<sup>96</sup> AISHE 2017-18



year. Second, the TIF requires teachers to mandatorily link their Aadhaar number to the AISHE database.<sup>97</sup> This move has met with resistance from many teachers who were unwilling to share their Aadhaar details.<sup>98</sup>

However, the introduction of the TIF alone does not account for the discrepancy in teacher numbers over the last two years. We have used two estimates to highlight this difference (Figure 5). First is the UGC estimate, which unlike the AISHE has shown a comparatively moderate, if not consistent, increase in the number of teachers over the last five years. Second, our projection, based on historical growth rates shows a much wider gulf in the number of teachers.

There is a wide difference between the three estimates. This is a function of their methodologies. UGC's estimates are based on data submitted by states that may not be as accurate as the AISHE. Our estimate is based on the average growth rates from 1990-1991 and shows a difference of 7,00,000 teachers or more than 50% of the AISHE estimate.<sup>99</sup>

A few conclusions can be drawn. First, if the AISHE estimate is the most accurate, the fall in teachers over the last two years could be due to over-reporting in the previous years. The AISHE introduced the TIF to identify such over-reporting through 'ghost teachers.' However, so far only 80,000 ghost teachers have been identified. This is not large enough to explain the gap between the AISHE and other estimates.

Second, if either the projection or the UGC estimate is more accurate, it means that the introduction of the TIF has introduced a greater error in the estimates than initially thought. There has always been a divergence between UGC and AISHE estimates of teachers. This can be explained by the sources of their data. However, if the error is as large as our estimate suggests, the AISHE committee should take a closer look at the TIF. So far, no other reason has been offered by the government to explain this gap other than the introduction of Aadhaar. Finally, in the case of all three estimates, the number of teachers is dwarfed by the massive increase in enrolments. We discuss the underlying problems that have led to teacher shortages in the next section.

## b. Teaching as a profession

The key human resource involved in 'delivering' high-quality education to students is the faculty. In addition to teaching long-term educational programs of the institution, faculty members are also expected to be involved in the training of executives and managers as development professionals. They are also required to engage in research, publish and disseminate research output. Finally, faculty also participates in various institution-building activities and contributes to key academic and administrative activities. A nurturing ecosystem would make it possible for HEIs to retain high potential faculty.

To hire faculty, positions are first sanctioned by the central or state government. However, perhaps due to the limited funding available, neither state nor central government universities open an adequate number of full-time positions. Therefore, universities continue to operate by hiring ad-hoc or part-time faculty. Ad-hoc faculty are not compensated as well as full-time faculty, therefore, they have far less incentive or motivation to stay in the system. Private HEIs also prefer to hire large number of part-time or ad-hoc faculty to maximise profits. The limited availability of qualified professionals to teach at HEIs and dwindling number of students pursuing research degrees leads to a vicious cycle of faculty shortage in HEIs. Further, the recent legal prescription of the Supreme Court to resort to department-wise reservation, instead of university-wise quotas, to fill faculty positions in government and government-aided HEIs has resulted in vacancies.<sup>100</sup>

Like India, China struggled with faculty shortages and management in the higher education sector. Recruitment of faculty in China was traditionally dominated by personal contacts and political clout. However, in 2012, China brought about reforms and adopted the American way of offering faculty tenure-track depending on the faculty member's position and experience. Such lifetime guarantees and assurance secures faculty members from being randomly fired or terminated while also defending the principle of academic freedom. The need to offer teaching faculty in Indian HEIs similar permanent positions is discussed at greater length in Chapter 4.

<sup>97</sup> Teacher Information Format, available at <<http://aishe.nic.in/aishe/viewDocument.action?documentId=221>>.

<sup>98</sup> See for instance Mazoomdaar, J. (2017, April 27). Give us your religion, caste, Aadhaar: HRD to all college teachers. *The Indian Express*

<sup>99</sup> We chose 1990-91 as the starting point as the expansion in the higher education system and the dramatic increase in teacher numbers began in that year.

<sup>100</sup> Vishnoi, A. (2019, January 23). Supreme Court upholds department-wise SC/ST quota in universities. *The Economic Times*

#### 1.6.4. Recommendation

##### a. Devise a well-structured promotion policy and incentive plan for faculty

Attracting and retaining qualified faculty is a key challenge faced by HEIs. Adequate compensation, in terms of monetary consideration as well as career security (tenure-track), should be provided to teaching staff to incentivise them.

### 1.7 Summary of recommendations

Recommendations	Objective
Expand capacity in postgraduate education	Increase postgraduate enrolment and reduce teacher shortages
Incentivise postgraduate education	Make research and teaching a more attractive career choice
Diversify course offerings	Prepare students for the job market
Promote linkages between HEIs and Industry	Improve employability of graduates
Create more pathways to employment in the organised sector	Reduce unemployment rate among graduates
Upgrade accreditation capacity	Monitor the quality of all HEIs in India
Cluster colleges	Improve the quality of colleges and make them easier to manage
Offer greater incentives to faculty members	Attract and retain well-qualified teaching staff

## Governance and Accountability

There are two aspects to higher education governance: in looking at the relationship between the government and HEIs, this chapter examines the problems with the affiliating model of university that is followed in India. Further, the relationship between HEIs and students is discussed from the lens of the accountability framework for HEIs.

This chapter has five sections. In Section 2, we discuss the affiliating university model, which accounts for a majority of HEIs in India. In examining the problems associated with model, we locate the increasing demand for autonomy among HEIs. We take a closer look at the policy for granting autonomy to HEIs in India. This includes an evaluation of the process and the effects of granting autonomy. A recent alternative to autonomy is the idea of the cluster university. The first cluster university in India was set up in 2013. In Section 3, we examine the antecedents of this policy as well as its current effect on the affiliating model.

In Section 4, we look at the existing framework for accountability in HEIs. This section draws on many of our learnings from the quality assurance framework discussed in Chapter 1. We discuss the shortcomings of the existing accountability framework and make the case for a more student-centric notion of accountability.

## 2.1 The affiliating model and the demand for autonomy

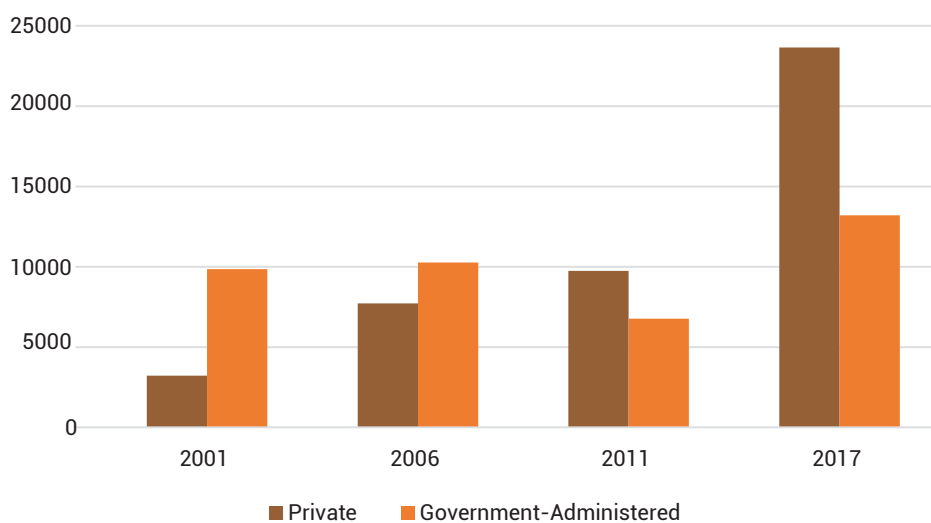
The higher education sector in India has undergone drastic changes in the last two decades. Until the mid-2000s, government-owned institutions made up a majority of the HEIs in India.<sup>101</sup> However, private institutions currently account for twice the number of government institutions. This is attributed to a conscious move by the government in the 1980s to invite private sector participation to meet the increasing demand.<sup>102</sup>

This transformation has also necessitated a change in the way the government regulates higher education. Change in this respect has been slow. The UGC, modelled after its erstwhile British counterpart,<sup>103</sup> is the central higher education funding and regulating agency in India. But most of its funding is focussed on a small number of centrally-administered institutions. Though it frames many of the regulations that govern HEIs in India, the UGC has limited capacity and authority to administer them.<sup>104</sup> This means that state-level authorities and

affiliating universities become the primary regulators of higher education. This creates bureaucratic bottlenecks that spur demand for greater autonomy. As shown in Figure 7, private institutions far outnumber government-administered HEIs in India. But a clear majority of these institutions are 'affiliated colleges'. This means that despite being owned privately, most colleges in India are subject to the norms established by government-owned affiliating universities. The affiliating university system is a model inherited from the British, similar to the one followed by the Oxford and Cambridge Universities.<sup>105</sup> The affiliating university allows the establishment of a network of institutions around a small number of universities.<sup>106</sup>

As such, affiliating universities enrol a very small number of students (usually at the postgraduate and doctoral level). Their primary responsibility is that of a regulator. Affiliating universities are responsible for the development of the curriculum for affiliated colleges, overseeing teaching quality, and assessing student performance.<sup>107</sup> However, universities have not shown themselves to be effective regulators.

Figure 7: Private institutions in India



Data Source: AISHE, various years and Agarwal (2006)

Note: Government-Administered is a sum of government-owned colleges and government-aided colleges. 2005-06 is the year the number of private colleges overtook the number of government-owned colleges.

<sup>101</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>102</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>103</sup> The UGC was wound up in the UK in 1989. After its most recent revamp, the higher education regulator in the UK is now called the Office for Students

<sup>104</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>105</sup> Kulandaiswamy, V. C. (2006). *Reconstruction of higher education in India*. Hyderabad: The ICFAI University Press

<sup>106</sup> Kulandaiswamy, V. C. (2006). *Reconstruction of higher education in India*. Hyderabad: The ICFAI University Press

<sup>107</sup> Rizvi, F., & Gorur, R. (2011). Challenges Facing Indian Higher Education. *The Fearless Nadia Occasional Papers on India–Australia Relations*, Australia India Institute, Melbourne

Almost half of the affiliating universities in India have more than 100 colleges affiliated to them (Table 5). Therefore, overwhelmed university administrators can enforce only minimum standards required to establish and operate colleges. Many colleges do not have adequate educational facilities or trained teachers. College managements, often driven by a profit motive, have limited accountability as the university is ultimately responsible for enforcing quality norms.<sup>108</sup>

**Table 5: Affiliated colleges per affiliating university**

Range of affiliated colleges	Number of affiliating universities
0-100	156
100-200	52
200-300	31
300-400	14
400-500	9
500-1000	16

Data Source: AISHE (2016-17)

The government has not been blind to this problem. Many government-appointed committees have pointed to affiliating universities as a problem in reforming the higher education sector. As far back as 1986, the National Education Policy (NEP) had called for the affiliating system to be replaced by a 'freer and more creative association of universities with colleges'. The UGC Committee on New Educational Management stated that university administrations placed statutory and financial restrictions that were 'non-conducive to achieving excellence'. In 2009, the Yash Pal Committee noted that colleges in the affiliating system are stifled by the university bureaucracy due to 'delays, controls and inadequate support'. The Yash Pal Committee also called for the elimination of the affiliating system in favour

of greater autonomy to educational institutions. Most recently, the DNEP16 found that affiliated colleges 'suffer from severe fund constraints and poor governance, leading to poor quality of outcomes'.

Despite these criticisms, the affiliating model remains popular as it requires very little investment from the government.<sup>109</sup> The affiliating fee paid by colleges is an important source of revenue for many state universities that often face funding shortages.<sup>110</sup> Autonomy is often presented as a solution to the problems created by the affiliating system.<sup>111</sup> The UGC has progressively accorded autonomous status to several institutions based on their past performance. Most recently, the UGC announced a policy of according 'graded autonomy' to 62 high-performing institutions based on their NAAC grades.

However, autonomous HEIs constitute a very small number of the total number of HEIs in India, as shown in Figure 8. In the last decade, India has seen a three-fold increase in the total number of HEIs (Agarwal, 2006; AISHE 2017-18). But the number of autonomous HEIs has remained 2% or less. In 2009, the Yash Pal Committee noted that 1,500 colleges (7.5% of the then total number of HEIs) had the infrastructure necessary to be upgraded as universities or be granted greater autonomy. Close to a decade later, there are only 892 (2.1% of the total number of HEIs today) autonomous HEIs

On the other hand, there has been a modest increase in the number of affiliating universities in the last five years from 239 to 278. But affiliating universities currently account for 74% of all student enrolments at the undergraduate levels (AISHE 2017-18). There is a considerable demand for autonomy since it allows HEIs the freedom to inter alia administer their own courses, explore new revenue streams and award their own degrees. We take a closer look at some of these powers awarded under the various schemes of autonomy.

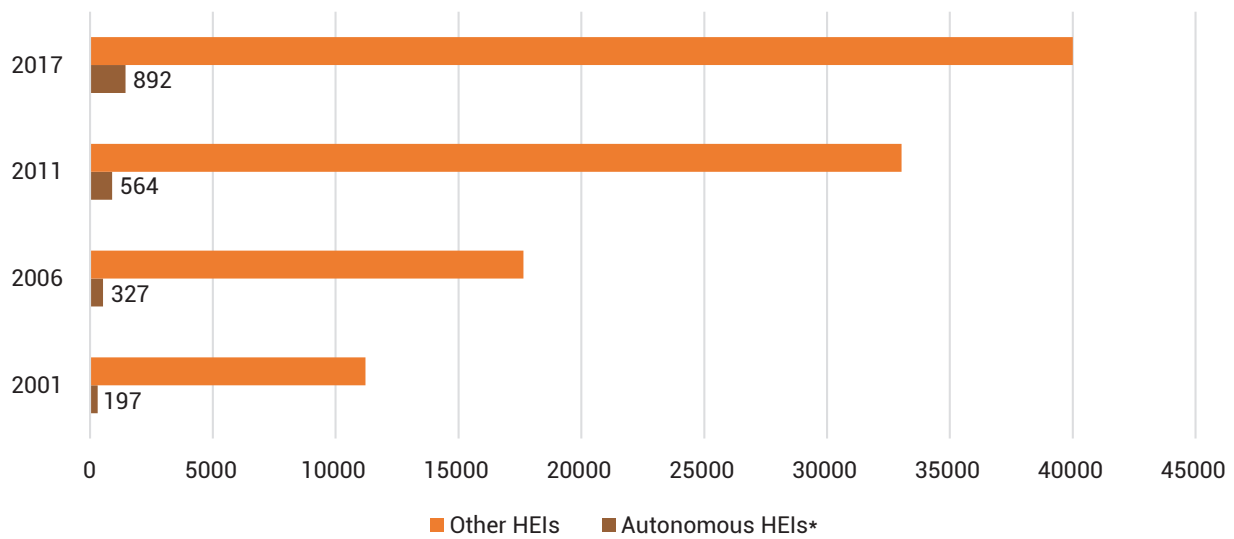
<sup>108</sup> Rizvi, F., & Gorur, R. (2011). Challenges Facing Indian Higher Education. *The Fearless Nadia Occasional Papers on India–Australia Relations*, Australia India Institute, Melbourne

<sup>109</sup> Ernst & Young Pvt Ltd. "Higher Education in India: Twelfth Five Year Plan (2012-2017) and Beyond". FICCI Higher Education Summit 2012

<sup>110</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>111</sup> See the Kothari Commission 1966; National Policy on Education 1986; Draft National Education Policy 2016 among others

Figure 8: Autonomous higher education institutions in India



Data Source: Authors' calculations based on data from AISHE (various years), Agarwal (2006) and Malik (2017)  
 \*Autonomous HEIs= Deemed Universities + Autonomous Colleges + Institutions of National Importance

## 2.2 The meaning and effect of autonomy

UNESCO defines institutional autonomy as a 'degree of self-governance necessary for effective decision making by institutions of higher education regarding their academic work, standards, management and related activities'.<sup>112</sup> According to the UGC Committee on New Educational Management (1990), autonomy is 'the freedom to function to achieve academic excellence and to administer the institution through its own rules and regulation'.<sup>113</sup> In both these definitions, autonomy is not limited to the academic functions of a college or university. Especially in India, debates on autonomy usually centre around funding, recruitment and the awarding of degrees.

### 2.2.1 How is autonomy granted?

There are four schemes for autonomy in India. They are listed in Figure 9 along with the statutes/rules that govern them.

Existing HEIs usually apply under the guidelines mentioned in Figure 10. The UGC in consultation with the concerned university or technical body evaluates their applications. However, in the case of Institutions of National Importance,

they are established with a high degree of autonomy to begin with, and do not have to apply for autonomous status separately. Similarly, deemed universities have a sub-category called *de novo* institutions where an institution is established as a deemed university.

Figure 9: Types of autonomous HEIs

Category	Law/Regulation
Autonomous Colleges	UGC Guidelines for Autonomous Colleges, 2017
Deemed Universities	UGC Institutions Deemed to be Universities Regulations, 2016
Institutions of National Importance	Act regulating the specific institution(s). For instance, Indian Institutes of Management Act (2017) for IIMs, Indian Institutes of Technology Act (1961) for IITs etc.
Graded Autonomy	UGC Categorisation of Universities for Grant of Graded Autonomy Regulations, 2018.

Authors' compilation

The guidelines for autonomy were subjective until recently. Graded autonomy, the most recent of these schemes, signalled a policy switch.<sup>114</sup> Objective assessments made by NAAC every five years are the basis for granting

<sup>112</sup> World Declaration on Higher Education, 1998

<sup>113</sup> University Grants Commission, *Report of The UGC Committee Towards National Education Management*, 1990

<sup>114</sup> "In a historic decision, 60 Higher Educational Institutions granted autonomy by UGC : Shri Prakash Javadekar", Press Information Bureau, 20 March 2018, <<http://pib.nic.in/newsite/PrintRelease.aspx?relid=177751>>

graded autonomy. Other schemes have also incorporated NAAC grading in their assessment of the quality of HEIs. Figure 10 summarises the requirements for autonomy under all the schemes for autonomy.

Of the three schemes, the requirements for deemed university status are the most stringent. In addition to those listed in Figure 10, deemed universities must also have a campus of at least 5,000 square metres, appoint a vice chancellor and create a governance structure similar to that of a university.<sup>115</sup> The norms for deemed universities have been tightened in the last decade following allegations of corruption.<sup>116</sup> Autonomous colleges must also create a governance structure according to the rules. Once a college is designated as autonomous, it does not have to pay any affiliating fee to the respective university.<sup>117</sup> This could explain why the number of autonomous colleges have stagnated in the recent past. There has also been resistance from State Universities to grant autonomy to their affiliated colleges.<sup>118</sup>

In both the autonomous colleges and deemed universities' regulations, the HEI must have been in existence for at least 10 and 15 years respectively. However, the actual time may be longer. In the case of deemed universities, we found that it takes 24.3 years on average before an institution is recognised as a deemed university.<sup>119</sup>

The graded autonomy scheme does not have a stipulated time period. Attempts have been made to simplify the process: in March 2018, it was announced

that any institution scoring a grade A or higher on NAAC scale will be automatically granted autonomy.<sup>120</sup> This does away with a lot of red tapes present in the other two schemes. For instance, the UGC Guidelines for Autonomous Colleges mandates a site visit before granting autonomy.<sup>121</sup> This is despite when site visits are part of NAAC assessments. Such guidelines only serve to delay the application process. The increasing use of NAAC grades in awarding autonomy also removes the subjectivity involved in assessing applications.

## 2.2.2 Powers that come with autonomy

There is some debate on whether deemed universities and institutions of national importance are autonomous institutions. Autonomous institutions refer to colleges that have been granted autonomy. Deemed universities are a distinct category as they are colleges that gain the powers of a university. IITs and IIMs are subject to governing councils (IIT Council and IIM Council).<sup>122</sup> Autonomous colleges, by contrast, only report to their governing and academic councils.<sup>123</sup> Here, we look at an institution's ability to govern itself with minimal external influence. From this perspective, all the categories listed in Figure 9 operate with a high degree of independence.

According to Prakash (2011), there are three aspects of autonomy viz., financial, administrative and academic. Based on an analysis of the different schemes for autonomy in India, Figure 11 shows the eight powers that are accorded to autonomous institutions.

Figure 10: Criteria for granting autonomy

Category	Quality	Size	Time Since Establishment
Autonomous Colleges	NAAC Grade higher than A	—	10 years
Deemed Universities	Highest NAAC grade for 3 cycles or among top 100 colleges in India or among top 20 in a particular stream	Undergraduate and at least 5 postgraduate departments	15 years unless in the Top 100 overall or Top 20 for a particular stream
Graded Autonomy	NAAC Grade higher than A	—	—

Authors' compilation

<sup>115</sup> UGC Institutions Deemed To Be Universities Regulations, 2016

<sup>116</sup> The problems with deemed to Be universities were investigated by the Tandon Committee (2009)

<sup>117</sup> UGC, Guidelines for Autonomous Colleges, 2017

<sup>118</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

<sup>119</sup> This excludes de novo institutions as they are established as deemed to be universities

<sup>120</sup> "In a historic decision, 60 Higher Educational Institutions granted autonomy by UGC : Shri Prakash Javadekar", Press Information Bureau, 20 March 2018, <<http://pib.nic.in/newsite/PrintRelease.aspx?relid=177751>>

<sup>121</sup> UGC, Guidelines for Autonomous Colleges, 2017

<sup>122</sup> Pandey, I M, "Governance of Higher Education Institutions", *Vikalpa* 29(2) April-June 2004

<sup>123</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

Figure 11: Powers granted to autonomous institutions

Financial	Administrative	Academic
Set fees	Hire teachers/staff	Prescribe syllabus
Start new courses	Report directly to academic/governing councils rather than government/UGC	Conduct own exams
Explore new revenue streams without prior approval	-	Award degrees in own name

Authors' compilation

The main benefit of autonomy is that HEIs gain administrative and financial powers that allow them to administer their affairs with minimal external interference. But these powers do have a bearing on the level of academic freedom at an HEI. For instance, the supervisory authority for most colleges is the university or a government authority that has wide-ranging powers even in academic matters.<sup>124</sup> Autonomous HEIs, on the other hand, can constitute their own academic councils that advise them on academic matters.<sup>125</sup>

The financial freedom awarded to HEIs is closely linked to the government's focus on the solvency of HEIs since the 1990s.<sup>126</sup> Allowing HEIs the freedom to explore new revenue streams and raise funds independently reduces the funding burden on the government. However, this has faced resistance from some academics as funds are usually raised through fee hikes.<sup>127</sup> The argument is that granting autonomy makes higher education less affordable and leads to the privatisation of HEIs. In response, successive governments have sought to set aside a certain percentage of seats in private HEIs at a lower fee. The most notable of these moves was the Private Universities Bill in 1995. However, this has been a non-starter for various reasons. The issue of affordability of higher education is discussed in Chapter 3.

### 2.2.3 Recommendations

#### a. More HEIs should be granted autonomous status

Autonomous HEIs currently account for only two percent of all HEIs in India. To reduce the burden on the affiliating

system and to promote more academic freedom, more HEIs should be granted autonomy. This will allow regulators and university administrators to focus on low performing colleges.

#### b. Simplify autonomy process using accreditation scores

The process for granting autonomy includes lengthy evaluations, similar to those conducted by NAAC. Instead of two separate assessments, ratings from accreditation agencies can be used to make the process simpler. The recent Graded Autonomy announcement is a step in the right direction.

## 2.3 Cluster universities

Cluster universities are a recent policy experiment of the MHRD. Pilot clusters have been started in four states with many other clusters in various stages of planning. Clustering colleges has long been thought of as a way to reduce the burden on affiliating universities by pooling together the resources of individual colleges to create smaller, manageable universities. Originally, the 12th Five Year Plan of the Planning Commission had recommended creating 400 clusters of 50 colleges each to cover all HEIs in India.<sup>128</sup> In its present form, clusters of three to five colleges have been established.<sup>129</sup>

In the 1960s, cluster colleges were a popular reform move to decentralise large universities in the United States.<sup>130</sup> The idea was to create smaller, more manageable communities to develop specialisations and promote diversity.<sup>131</sup> There

<sup>124</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

<sup>125</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

<sup>126</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>127</sup> Pathak, V. (2018, March 23). UGC autonomy notice sparks fear of fee hikes. *The Hindu*

<sup>128</sup> University Grants Commission, *"Inclusive and Qualitative Expansion of Higher Education: 12th Five Year Plan"*, November 2011

<sup>129</sup> See for instance, the Cluster University of Jammu

<sup>130</sup> Martin, Warren, *"Alternative Forms of Higher Education for California"*, Joint Committee on the Master Plan for Higher Education, California Legislature (1973)

<sup>131</sup> Gaff, J. G. (1970). *The cluster college*. San Francisco: Jossey-Bass



are two kinds of college clusters viz., sub-colleges and federated colleges.<sup>132</sup> Sub-colleges are satellite campuses near the university or semi-autonomous colleges that operate on the same campus.<sup>133</sup> Federated colleges are a federation of many small colleges pooling their resources together but are functionally independent.<sup>134</sup> The move to create cluster universities in India is inspired by the latter form of the arrangement.

Small colleges, which are not very common in the United States have 'limited intellectual, cultural and economic resources'.<sup>135</sup> Creating a federation of such colleges helped build larger, more diverse institutions with more resources than any of the constituent colleges.<sup>136</sup> However, federated colleges were not popular in the United States as it was difficult for competing, independent colleges to cooperate with each other.<sup>137</sup> It is expected that Indian colleges might have a stronger incentive to cooperate since cluster universities are offered additional funding.<sup>138</sup>

### 2.3.1 Indian cluster universities

The proposal to create cluster universities in India can be traced back to the 1986 NEP, which called for alternate

university-college relationships that could replace the affiliating model.<sup>139</sup> Ever since, many government commissions have called for a move away from the affiliating model of universities. The Yash Pal Committee in 2009 recommended that good colleges can be clubbed together to create universities.<sup>140</sup> The report, however, did not comment on the size of these cluster universities. The 12th Plan called for the establishment of cluster universities with a minimum of 50 colleges within a city or district.<sup>141</sup> In their present form, cluster universities consist of three to five colleges.

The rationale for the creation of cluster universities is to reduce the burden on affiliating universities and to improve the quality and infrastructure of colleges by pooling their resources.<sup>142</sup> Individual colleges are designated as different campuses of the university. For instance, the Cluster University of Jammu, India's first cluster university is made up of colleges that specialise in science and commerce, and an education and women's college as well.<sup>143</sup> Geographic proximity is also a consideration in creating clusters, with colleges required to be within a 15-20 km radius.<sup>144</sup> Table 6 summarises the make-up of existing cluster universities. Many more are in the pipeline.

**Table 6: Cluster universities in India**

Name	No. of Colleges	No. of students enrolled (2016-17)	% of Postgraduate Enrolments	No. of Programmes	Nature of Ownership
Cluster University of Jammu	5	16,616	1.8	20 (8 postgraduate)	Government
Cluster University of Srinagar	5	15,241	3.6	20 (10 integrated Master's)	Government
Khallikote University	5	Not available	Not available	Not available	Government

Authors' Compilation

<sup>132</sup> Gaff, J. G. (1970). *The cluster college*. San Francisco: Jossey-Bass

<sup>133</sup> Gaff, J. G. (1970). *The cluster college*. San Francisco: Jossey-Bass

<sup>134</sup> Gaff, J. G. (1970). *The cluster college*. San Francisco: Jossey-Bass

<sup>135</sup> Gaff, Jerry "Cluster Colleges as Response", *The Research Reporter* 5(4), 1970

<sup>136</sup> Martin, Warren, "Alternative Forms of Higher Education for California", Joint Committee on the Master Plan for Higher Education, California Legislature (1973)

<sup>137</sup> Gaff, J. G. (1970). *The cluster college*. San Francisco: Jossey-Bass

<sup>138</sup> Under the RUSA, cluster universities are offered an initial funding of Rs. 55 crores followed by additional funding of Rs. 33 crores after a five-year period

<sup>139</sup> National Policy on Education 1986

<sup>140</sup> Yash Pal Committee (2009): *Report of the Committee to Advise on Renovation and Rejuvenation of Higher Education*

<sup>141</sup> University Grants Commission, "Inclusive and Qualitative Expansion of Higher Education: 12th Five Year Plan", November 2011

<sup>142</sup> University Grants Commission, "Inclusive and Qualitative Expansion of Higher Education: 12th Five Year Plan", November 2011. Also see Ministry of Human Resource Development, "Rashtriya Uchchatar Shiksha Abhiyaan: National Higher Education Mission", September 2013

<sup>143</sup> See <<http://clu.jammu.in/index.php>>.

<sup>144</sup> Ministry of Human Resource Development, "RUSA Existing Components at a Glance", May 2014

So far, clusters have consisted of reputed, high-performing colleges (eight out of the 15 colleges in three clusters have a NAAC grade above 3). In addition, many of the colleges in the clusters already have autonomy from their parent universities. Though the cluster is of a manageable size, it does not affect the affiliating university in a significant way given their small size. The idea is for these clusters to expand with the addition of more colleges in the future.<sup>145</sup> Unless more colleges are added to these clusters or more clusters are created, the bottlenecks associated with affiliating universities will continue.

The area where cluster universities could have an impact is in the addition of postgraduate courses. In Chapter 1, we discussed the wide gap between undergraduate and postgraduate enrolments. We found that one of the reasons for the gap was the lack of capacity in many HEIs to run postgraduate courses. Cluster universities help overcome the shortage of resources in this respect. However, from Table 6, we see that in the two cluster universities in Jammu & Kashmir, postgraduate enrolments are less than four percent. In addition, none of the clusters run doctoral programmes. Some cluster universities have already indicated that they will be expanding their postgraduate programmes.<sup>146</sup> It is an important first step to improve the quality of higher education in cluster universities.

### 2.3.2 Recommendations

#### a. College clusters must be bigger

Clustering colleges has helped create universities of a more manageable size. However, it does not solve the problem of scale identified in Chapter 1. The number of students per HEI in a cluster university is still quite low. The fact that many colleges in these clusters were autonomous means that they were not a burden to their affiliating university to begin with. Cluster universities are a useful alternative to the affiliating university. In their current form, they do not have a sizeable impact

on existing affiliating universities. More colleges need to be added to clusters for them to reduce the burden on affiliating universities.

#### b. Cluster universities should be hubs for postgraduate education and research

Cluster universities can help upgrade the capacity for postgraduate education. By pooling resources amongst individual colleges, the cluster university has the resources to become a hub for postgraduate education and research. The programmes in these cluster universities can also be modified to cater to the local economy. A study of college clusters in Pune and Bangalore found that local firms relied on HEIs for their workforce.<sup>147</sup> In addition, the growth of firms in these cities also led to collaboration on Research and Development (R&D) in many emerging areas with the industry.<sup>148</sup> Cluster universities with pooled resources are uniquely placed to take advantage of local linkages.

## 2.4 Accountability in HEIs

The National Knowledge Commission in 2006 described the higher education sector as “overregulated and under-governed”.<sup>149</sup> With the increasing number of private HEIs in India, regulators have very little authority over their functioning. The government’s move to recognise 10 private HEIs as Institutions of Eminence (IoEs) will allow these institutions greater freedom to decide fees structures, course structures, and the discretion to constitute their governing bodies. Though no financial support will be provided to private IoEs, unlike public IoEs, the special status granted to these institutions can help serve the objective of providing world-class teaching and research facilities to students and, overall, enhance the general level of education in India. In recent times, the establishment of some private HEIs towards this endeavour deserves a mention; their account is summarised in Figure 12.

<sup>145</sup> Ministry of Human Resource Development, “RUSA Existing Components at a Glance”, May 2014

<sup>146</sup> Mohanty, H. (2017, February 27). Khallikote Cluster University may open 12 new postgraduate departments. *The Times of India*

<sup>147</sup> Basant, R., & Chandra, P. (2007). Role of educational and R&D institutions in city clusters: An exploratory study of Bangalore and Pune Regions in India. *World Development*, 35(6)

<sup>148</sup> Basant, R., & Chandra, P. (2007). Role of educational and R&D institutions in city clusters: An exploratory study of Bangalore and Pune Regions in India. *World Development*, 35(6)

<sup>149</sup> National Knowledge Commission, Report to the Nation 2006-2009. See <<https://www.aicte-india.org/downloads/nkc.pdf>>

Figure 12: Select high-ranking private HEIs setup in recent times

S No	Institutions	Account
1	Ahmedabad University	A private institution set up in 2009 by the Ahmedabad Education Society, a non-profit education trust.
2	FLAME University	A fully philanthropic initiative and established as a state private university in Maharashtra, under the FLAME University Act 2014 as a Jain minority institution.
3	Indian School of Business	Setup in 1996 by a group of businessmen and academics. It is funded entirely by private corporations, foundations and individuals from around the world and is a not-for-profit organisation.
4	O. P. Jindal Global University	A private university established in 2009 as a philanthropic initiative by Naveen Jindal.
5	Shiv Nadar University	Founded as part of a series of initiatives launched by a private philanthropic foundation funded by Shiv Nadar, and established as a state private university under Act no. 12 of 2011 of the state legislature of Uttar Pradesh. Currently registered as a research institution with the Government of India.

Authors' compilation

As the government pursues a policy of granting greater autonomy to HEIs, holding them accountable and monitoring their standards becomes the primary task of the regulator.<sup>150</sup> India, like many other countries around the world, is moving towards a government-supervised system from a government-controlled system. In this section, we discuss this existing accountability measures for HEIs in India and identify ways in which they should evolve in the current higher education landscape.

### 2.4.1 Failure of existing accountability mechanisms

The affiliating university is the primary regulator of higher education in India and designed to function as an automatic quality control mechanism.<sup>151</sup> As we found in section 2, affiliating universities lack the capacity to effectively regulate their constituent colleges and hold them accountable. Around the world, funding agencies have taken over the role of holding HEIs accountable through performance-linked funding.

However, this model is yet to take shape in India in a meaningful way. Among elite institutions like IITs and

IIMs, accountability is a straightforward process. Their performance can be judged based on their financial disclosures.<sup>152</sup> This is also because a bulk of their funding comes from the central government. This is not the case with most HEIs. The UGC, the primary funding agency funds a very small proportion of HEIs in India.<sup>153</sup> State-level authorities, which make up a majority of the funding for HEIs do not have the capacity to regulate them. In the case of private HEIs, state-level authorities most often intervene to set fee caps.

In the last two decades, accreditation has emerged as a means of holding HEIs accountable, becoming the basis for many decisions taken by the UGC. But it remains a largely voluntary process with only 14% of all HEIs having valid accreditation. More importantly, regulators have very few secondary mechanisms to ensure compliance.<sup>154</sup> Such measures can include the withdrawal of funding and recognition. It is difficult to withdraw funding from public HEIs as they are not self-sustainable and rely on government funding.<sup>155</sup> Private HEIs do not rely on government funding and most regulators do not have the power to withdraw recognition. At a fundamental level, the problem is that regulators in India do not have the power to steer institutions towards specific goals.<sup>156</sup>

<sup>150</sup> Raza, R. (2009). Examining autonomy and accountability in public and private tertiary institutions. *Human Development Network: World Bank*

<sup>151</sup> Raza, R. (2009). Examining autonomy and accountability in public and private tertiary institutions. *Human Development Network: World Bank*

<sup>152</sup> Pandey, I M, "Governance of Higher Education Institutions", *Vikalpa* 29(2) April-June 2004

<sup>153</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>154</sup> Raza, R. (2009). Examining autonomy and accountability in public and private tertiary institutions. *Human Development Network: World Bank*

<sup>155</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>156</sup> Raza, R. (2009). Examining autonomy and accountability in public and private tertiary institutions. *Human Development Network: World Bank*

Thus, the existing framework of accountability is not linked to performance. Accreditation agencies have not covered a significant number of HEIs. Finally, there are no obvious ways to make quality assessments actionable.

## 2.4.2 Student-centric accountability

The role of households in the expansion of higher education over the last two decades has not received sufficient attention.<sup>157</sup> It has been noted that the expansion has been funded primarily by households.<sup>158</sup> The increase in the number of HEIs was also driven by the increasing demand for higher education in a liberalised economy.<sup>159</sup> However, the role of students and households in holding HEIs accountable has not been emphasised enough.

Unlike many other countries, the introduction of the private sector in India has not created competition between privately-owned HEIs to upgrade their quality.<sup>160</sup> However, there has been competition to attract a greater number of students, since they are the primary source of revenue. Private HEIs in India often volunteer for accreditation as a certifier of quality to attract more students.<sup>161</sup> Thus, student demand becomes a de facto accountability mechanism amongst HEIs.

Some countries have student-centric accountability mechanisms. The most radical of these is the California university system that is regulated by the Bureau of Private and Post-Secondary Education (BPPE).<sup>162</sup> BPPE is a consumer protection agency that treats for-profit universities as businesses and students as their consumers. Students can directly approach the BPPE for any violations. The BPPE is responsible for the establishment of minimum standards for business practices, quality of instruction and institutional stability.<sup>163</sup>

A more market-driven solution to accountability is the voucher system. Instead of subsidising HEIs, the government gives vouchers to students to cover some part or all of the fees.<sup>164</sup> The student then has the option of spending the voucher at an HEI of his or her choice. In such a system, the choice is often driven by the quality of the HEI.<sup>165</sup> A version of this system could be applicable to India. The government recently launched a platform to make student loans more accessible.<sup>166</sup> Through the platform, students can apply for loans from multiple banks and the banks clear the loans in a short window. If the platform is linked to only those HEIs with a valid accreditation or with a certain score, it would drive student demand in the direction of greater quality. This would create a system of accountability outside the more formal regulatory processes.

Such student-centric solutions can only work when they can identify and access HEIs of sufficient quality.<sup>167</sup> In such a system, the government must actively disseminate information on HEI quality, and both students and parents must be equipped to make decisions based on this information.<sup>168</sup>

## 2.4.3 Recommendations

### a. Strengthen accreditation framework

A strong accreditation framework is essential to improve the accountability of HEIs. We must work towards upgrading the capacity of accreditation agencies, as well as making assessments actionable. Decisions on recognition, affiliation and funding can be linked to assessments made by accreditation agencies, as outlined in Chapter 5. Separating assessments from the regulatory agencies will also help reduce corruption and profiteering associated with many of these decisions.

<sup>157</sup> Daugherty, L., Miller, T., Dossani, R., & Clifford, M. (2013). *Building the Links between Funding and Quality in Higher Education*. Rand Corporation

<sup>158</sup> Varghese, N V, (2015): *Challenges of Massification of Higher Education in India*. CPRHE Research Paper Series No. 1

<sup>159</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>160</sup> Raza, R. (2009). Examining autonomy and accountability in public and private tertiary institutions. *Human Development Network: World Bank*

<sup>161</sup> Martin, M., & Stella, A. (2007). *External Quality Assurance in Higher Education: Making Choices. Fundamentals of Educational Planning 85*. International Institute for Educational Planning (IIEP) UNESCO

<sup>162</sup> Bureau for Private Postsecondary Education, see <[https://www.bppe.ca.gov/about\\_us/](https://www.bppe.ca.gov/about_us/)>

<sup>163</sup> Bureau for Private Postsecondary Education, see <[https://www.bppe.ca.gov/about\\_us/](https://www.bppe.ca.gov/about_us/)>

<sup>164</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>165</sup> Martin, M., & Stella, A. (2007). *External Quality Assurance in Higher Education: Making Choices. Fundamentals of Educational Planning 85*. International Institute for Educational Planning (IIEP) UNESCO

<sup>166</sup> Called Vidyalakshmi, the platform is currently operated by the National Securities Depository Limited. The platform currently has 34 banks and 93 different loan schemes. For more information, see <<https://www.vidyalakshmi.co.in/Students/about-us>>.

<sup>167</sup> Daugherty, L., Miller, T., Dossani, R., & Clifford, M. (2013). *Building the Links between Funding and Quality in Higher Education*. Rand Corporation

<sup>168</sup> Daugherty, L., Miller, T., Dossani, R., & Clifford, M. (2013). *Building the Links between Funding and Quality in Higher Education*. Rand Corporation

**b. Empower students, household and other stakeholders**

Formal regulation must be accompanied by empowering other stakeholders. Currently, accreditation is only understood by policymakers or HEIs that rely on it for

funding and advertisement. Disseminating information on accreditation widely will empower students and households as consumers of higher education. This can be taken a step further by linking it to student-level funding, especially with student loan platforms.

## 2.5 Summary of recommendations

Recommendations	Objective
More HEIs should be granted autonomy	Reduce the burden on affiliating universities
The process for granting autonomy should be simplified	Link autonomy to assessments and avoid duplication of effort
Increase size of university clusters	Move away from the affiliating model
Clusters should be hubs for postgraduate education and research	Improve quality of education
Strengthen accreditation framework	Reduce corruption and profiteering
Student-centric accountability	To better regulate private HEIs

## Funding: Efficiency, Transparency and Affordability

The last two decades have seen a shift in the funding of higher education. The government has taken a step back from its role as the primary funder. Household expenditure in higher education is now the biggest source of funding. In this chapter, we examine some of the effects of reduced public funding on higher education in India.

In section 2, we chart the growth of the higher education sector and the policy changes with respect to funding since independence. We also look at the dynamics between state governments and the centre in higher education funding. We examine the changing government priorities in favour of funding technical education over university education.

We shift our focus to institution-level issues in Section 3. We evaluate the incremental model of funding followed in India and highlight the inefficiencies it brings to the system. A consequence of the shift away from government funding of higher education is the increased pressure on public HEIs to implement cost recovery measures and we analyse the impact of these.

Section 4 investigates the sources of funding in privately-owned HEIs. We found the lack of data to be a major obstacle. In this context, we analyse the implications of a lack of transparency on the rising costs of higher education in India. Sections 2 to 4 make specific recommendations on improving efficiency and quality and increasing affordability.

### 3.1 Expenditure on higher education

The question of whether higher education is a public or private good underpins any discussion on funding. Higher education can serve both private and public interests. But its classification as one or the other is often a political process.<sup>169</sup> In India, higher education was considered a public good, with the government as the primary higher education provider until the 1990s. There has been a marked shift in policy, with higher education being classified as a 'non-merit' good in 1997.<sup>170</sup> The classification has a bearing on the resources allocated to the sector.

Post-independence, the government-funded most, if not all HEIs in India. Government funding of HEIs progressively increased until the 1980s. In 1979-1980 for instance, government funding accounted for 79% of all expenditure on higher education in the country, up from 49% in 1950-1951.<sup>171</sup> As we discovered in Chapter 1, increased government expenditure on higher education was in consonance with the growth of the higher education sector through government and government-aided HEIs until the 1980s. In the 1980s and 1990s, India was faced with an unprecedented demand for higher education. Unlike previous decades, the demand could not be met solely through increased

government expenditure.<sup>172</sup> Like many other developed countries in this period, India turned to the private sector to fill the gap.<sup>173</sup>

Over a 30-year period, government expenditure increased in nominal prices from Rs. 1053 crores to Rs. 39,797 crores (Table 7). Most of the increase was a result of the 11th Five Year Plan (2007-12) when the central government allocation to higher education was increased nine-fold.<sup>174</sup> However, in real terms, there was a five-fold increase in higher education spending from 1980-1981 to 2010-2011.<sup>175</sup> More importantly, enrolments in this period increased 10 times (Table 1). Comparing the annual growth rate of enrolment and government expenditure paints a clearer picture as shown in Figure 13. From 2001-2011, while government expenditure increased at a rate of 10.9% per year, enrolment increased at 21.25% per year. This gap in enrolments and government spending was filled by the private sector. Unlike government or government-aided HEIs, most private HEIs do not receive government funding. They are almost entirely reliant on student fees. This means that private HEIs only run courses that are profitable and charge fees much higher than government HEIs. Therefore, the expansion in higher education in the last two decades was funded by

**Table 7: Government spending on higher education (in Rs. Crore)**

Year	University Level	Technical Education	Total
1980-81	N/A	N/A	1,053.2
1985-86	1,106.59	350.26	1,456.85
1990-91	2,311.85	753.01	3,064.86
1995-96	3,871.33	1,290.25	5,161.58
2000-01	9,194.79	2,528.02	11,722.81
2005-06	11,013.34	3,657	14,670.34
2010-11	28,788.11	11,009.78	39,797.89
2014-15*	51,112.99	19,111.59	70,224.58

Data Source: Annual Analysis of Budgeted Expenditure on Education, MHRD, various years

\*Budget estimate

<sup>169</sup> Carnoy, M., Froumin, I., Loyalka, P. K., & Tilak, J. B. (2014). The concept of public goods, the state, and higher education finance: a view from the BRICs. *Higher Education*, 68(3)

<sup>170</sup> Tilak, J. B. (2004). Public subsidies in education in India. *Economic and Political Weekly*

<sup>171</sup> Tilak, J. B., & Varghese, N. V. (1991). Financing higher education in India. *Higher Education*, 21(1)

<sup>172</sup> Carnoy, M., Froumin, I., Loyalka, P. K., & Tilak, J. B. (2014). The concept of public goods, the state, and higher education finance: a view from the BRICs. *Higher Education*, 68(3)

<sup>173</sup> Carnoy, M., Froumin, I., Loyalka, P. K., & Tilak, J. B. (2014). The concept of public goods, the state, and higher education finance: a view from the BRICs. *Higher Education*, 68(3)

<sup>174</sup> Tilak, J. B. (2017). Union-State relations in India's Higher Education. *NUEPA Occasional Paper*, 50

<sup>175</sup> Authors' estimates

households.<sup>176</sup> There is no data available on household expenditure on higher education. But a 2016 study found that household expenditure on higher education ranged from 15.29% (rural households) to 18.36% (urban households) of total household expenditure.<sup>177</sup>

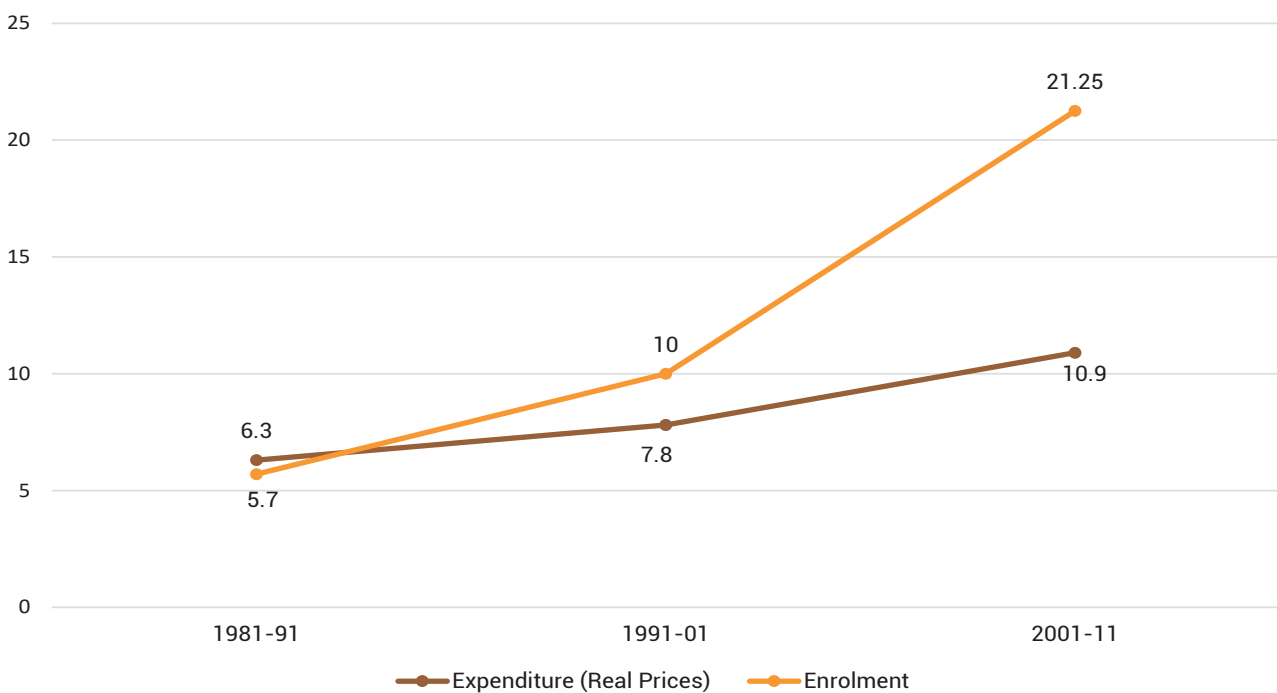
A more reliable indicator of the shift in higher education funding are student loans. In 2013-14, 8% of all students enrolled in HEIs were funded by an education loan.<sup>178</sup> Rs. 70,282 crores were released as funds for student loans in 2013-2014. By comparison, the total government expenditure on higher education in 2013-2014 was Rs 64,982 crores.<sup>179</sup> In fact, student loans have exceeded government expenditure on higher education since 2007-2008.<sup>180</sup>

The long-term shift from a government-funded higher education system to one funded by households has many implications for the higher education system in India. We examine this in the following sections.

### 3.2 Government spending on higher education

From 1990-1991 to 2003-2004, government spending on higher education ranged between 0.5% to 0.6% of GNP, amongst the lowest in the world.<sup>181, 182</sup> Since 2008-2009, public spending on higher education in India has varied between 1.1% to 1.3% of GDP.<sup>183</sup> According to the 2015 data, India's government spending on higher education is the highest in South Asia.<sup>184</sup> It also compares favourably to some developed countries.<sup>185</sup>

Figure 13: Growth rates of enrolment versus expenditure (1981-2011)



Data Source: Authors' calculations based on data from AISHE and MHRD

<sup>176</sup> Varghese, N V (2015): *Challenges of Massification of Higher Education in India*. CPRHE Research Paper Series No. 1  
<sup>177</sup> Chandrasekhar, S., Rani, P. G., & Sahoo, S. (2016). *Household Expenditure on Higher Education in India: What do we know & What do recent data have to say?* (No. 2016-030). Indira Gandhi Institute of Development Research  
<sup>178</sup> Rani, P. G. (2016). Financing higher education and education loans in India: Trends and troubles. *Journal of Social Science*, 12(4)  
<sup>179</sup> Ministry of Human Resource Development, "Analysis of Budgeted Expenditure on Education 2011-12 to 2013-14", (2015) available at <[http://mhrd.gov.in/sites/upload\\_files/mhrd/files/statistics/ABE2011-14.pdf](http://mhrd.gov.in/sites/upload_files/mhrd/files/statistics/ABE2011-14.pdf)>  
<sup>180</sup> Rani, P. G. (2016). Financing higher education and education loans in India: Trends and troubles. *Journal of Social Science*, 12(4)  
<sup>181</sup> Central Advisory Board of Education, "Financing of Higher and Technical Education", (2005)  
<sup>182</sup> Central Advisory Board of Education, "Financing of Higher and Technical Education", (2005)  
<sup>183</sup> Until the recent past, higher education spending was measured in GNP terms  
<sup>184</sup> Comparison based on data from the UNESCO Institute for Statistics (UIS), 2016  
<sup>185</sup> Comparison based on data from the UNESCO Institute for Statistics (UIS), 2016



**Table 8: Government expenditure on higher education, as % of GNP**

Year	Share of GNP (%)
1990-91	0.61
1995-96	0.49
2000-01	0.62
2003-04	0.5

Data Source: Report of the Central Advisory Board of Education, 2005

**Table 9: Government expenditure on higher education, as % of GDP**

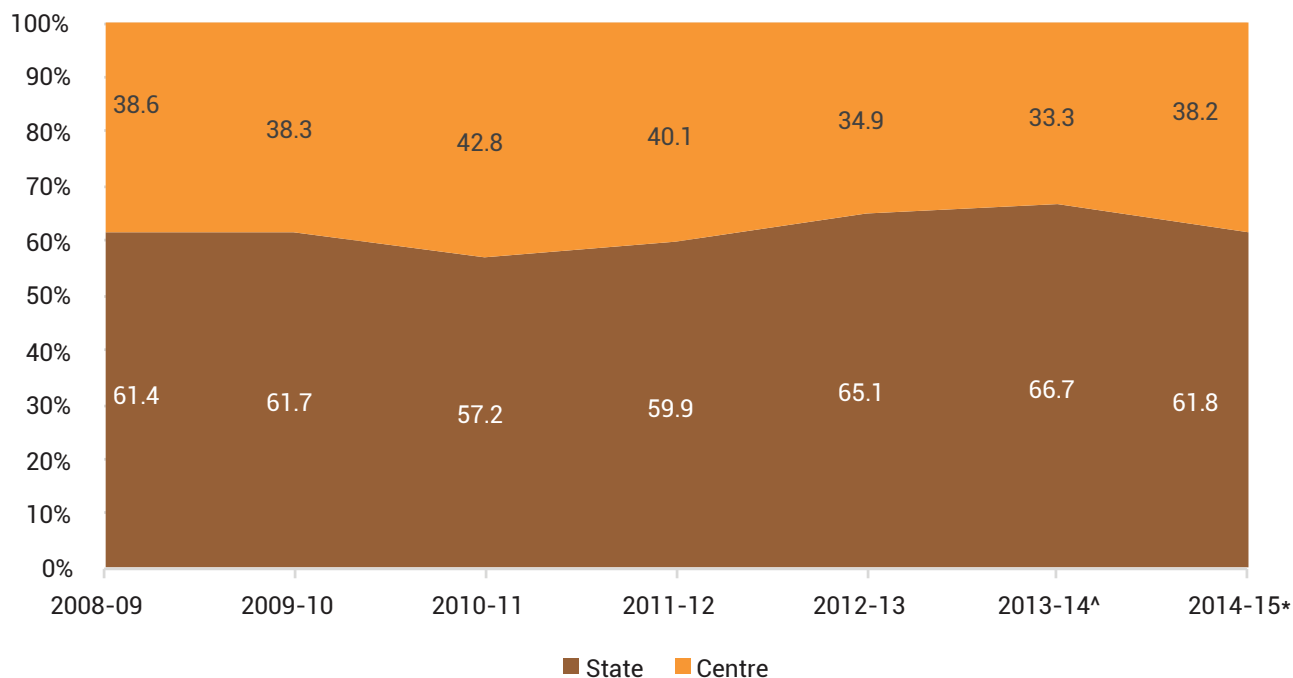
Year	Share of GDP (%)
2008-09	1.18
2009-10	1.29
2010-11	1.34
2011-12	1.13
2012-13	1.19
2013-14	1.26
2014-15	1.22

Data Source: Annual Analysis of Budgeted Expenditure on Education, MHRD, various years

However, unlike more developed countries, government spending on higher education is far more integral to the sector in India. Most government and government-aided HEIs rely almost entirely on government funding. We discuss the institution-level issues in the next section. Now, we turn our focus to the broad patterns in higher education funding in India.

### 3.2.1 Centre-state funding in higher education

The union and state governments are considered 'equal partners' in higher education in India.<sup>186</sup> But their relationship in the governance and funding of higher education has been in a state of flux since independence. Until 1976, higher education was under the State List of the Constitution, with the role of the central government limited to setting standards and the administration of central universities.<sup>187</sup> The 42<sup>nd</sup> Amendment in 1976, moved higher education to the Concurrent List, which gave the central government a larger role in the regulation of higher education.

**Figure 14: Share of state and central government funding for higher education (%)**

Data Source: Authors' calculations based on Annual Analysis of Budgeted Expenditure on Education, MHRD, various years

<sup>186</sup> Tilak, J. B. (2017). Union-State relations in India's Higher Education. *NUEPA Occasional Paper*, 50

<sup>187</sup> Tilak, J. B. (2017). Union-State relations in India's Higher Education. *NUEPA Occasional Paper*, 50

Through the UGC and regulators for professional and technical programmes, the role of the union government has extended beyond standard-setting. These bodies can frame rules and norms on a wide range of issues, including but not limited to the eligibility and service condition for teachers, the conduct of entrance examinations and the grant of licenses to establish HEIs. This leaves little regulatory room for the states as HEIs are required to comply with these norms or state-level regulations that draw upon norms established by central regulators.<sup>188</sup>

The outsized role played by the central government is not reflected in the funding of higher education. State governments spend a lot more than the central government. Since 2008-2009, state government spending has, on average, accounted for 60-65% of total government spending on higher education. State governments spend more on higher education as central government funding is limited to a small number of institutions. In 2015, it was estimated that only 6% of all enrolled students study in central government institutions.<sup>189</sup>

There is also a difference in the nature of central and state government funding. A large percentage of plan grants disbursed by the central government go to central universities. On the other hand, most of the state government expenditure is through non-plan grants. Plan or development grants are grants tied to specific projects or with specific objects. Non-plan or maintenance grants cover the operating expenses of an HEI. Thus, central HEIs with plan funding can improve in quality and focus on academics and research. Whereas, state-funded HEIs, which constitute a majority of the HEIs in India, rely on a thinly spread pool of non-plan grants for the day-to-day running of the institution.

The imbalance in centre-state funding has two consequences. First, centrally-administered HEIs are usually of a higher quality and are considered 'islands of excellence'. This follows from the fact that they are better funded, with specific development objectives in mind. Second, state governments and universities with limited funding rely on other means to fill the gap.

A direct consequence of this is the increase in affiliated colleges, which are an easy source of revenue for state universities.<sup>190</sup> The initial push towards allowing private colleges and universities also came from the states, who could not afford to finance the expansion of the higher education sector on their own.<sup>191</sup> The imbalance in centre-state funding also explains the problems with capacity and quality discussed in Chapter 1. One area that both the centre and states have paid increasing attention to in recent times is technical education. Further, the existing role of the UGC in fund disbursement and the proposal for an individual and exclusive body to play the part are discussed in Chapter 5. We now turn to the varying funding patterns in technical and university education in India.

### 3.2.2 University and technical education

For funding purposes, higher education in India is classified into two categories - university and technical education. University education refers to traditional three-year programmes and their corresponding masters and doctoral programmes. These courses are run by affiliated colleges in the university system. They are regulated by the respective universities in addition to the state government and the UGC. Technical education refers to courses such as engineering, medicine, management, etc., which have a specialised vocational focus. These programmes are regulated by regulators such as the AICTE, MCI, etc. (Figure 22).

There has been an increasing demand for technical education over the last two decades due to increasing job opportunities for the graduates of these programmes (Chapter 1). This is also reflected in the increased government spending on technical education. From 26.6% in 2008-09, the proportion of government funding on technical education has increased to 46.6% in 2014-15.<sup>192</sup> Interestingly, both central and state governments have increased their spending on technical education while reducing or slowing down their expenditure on university education.

<sup>188</sup> Tilak, J. B. (2017). Union-State relations in India's Higher Education. *NUEPA Occasional Paper*, 50

<sup>189</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>190</sup> Most central universities are not affiliating

<sup>191</sup> Matthew, Anthony, (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>192</sup> Authors' calculations based on MHRD's Analysis of Budgeted Expenditure on Education

**Table 10: Government expenditure on technical and university education (in Rs. Crore)**

Year	University Education		Technical Education		Total	
	State	Centre	State	Centre	State	Centre
2000-01	75.1	24.9	56.3	43.7	71.1	28.9
2005-06	78.8	21.2	58.3	41.7	73.7	26.3
2010-11	68.7	31.3	44.1	55.9	62.1	37.9
2014-15*	66.7	33.3	56.1	43.9	61.8	38.2

Data Source: Tilak (2017) and Annual Analysis of Budgeted Expenditure on Education, MHRD, various years

\* Budget estimate

The gap is wider for central government spending. The central government's expenditure accounts for more than half the spending on technical education, while state governments account for almost two-thirds of the expenditure on university education. Increased central government expenditure on technical education is a response to the rapid expansion of low-quality, private HEIs offering technical programmes.<sup>193</sup> In the last decade, the central government has increased funding to improve the quality of existing technical institutions and to establish more institutions of the same quality (IITs, IIMs etc.).

The bulk of central funding is through plan grants. This means that most government-funded technical institutions receive funding with specific objectives for development and further improvement, allowing them to thrive. State government funding is primarily through non-plan grants that are ad hoc, and, in many cases, based on political considerations. These create inefficiencies in the system.<sup>194</sup> Therefore, the quality of government-funded technical education has improved, while the quality of university education has suffered.

### 3.2.3 Rashtriya Uchchatar Shiksha Abhiyan

In 2013, the government launched the National Education Mission, or Rashtriya Uchchatar Shiksha Abhiyan (RUSA) to provide strategic funding to higher and technical institutions in states. Under this Centrally Sponsored Scheme states are required to develop comprehensive state higher education plans with an interconnected

strategy to address issues of expansion, equity and excellence. Central funding under the scheme are linked to academic, administrative and financial reforms of state higher education.<sup>195</sup> The scheme was designed in such a manner that grants would be dependent on outcomes and based on State Higher Education Plan (SHEP) as a benchmark for state and institution performance.

Funding under RUSA is based on two components—norm-based and performance-based, thus incentivising well-performing institutions and decision-making. The norm-based approach grades HEIs based on their level of compliance with regulations. Under performance-based funding, State Higher Education Councils (SHECs) prepare SHEPs that serve as a benchmark against which state and institutional performance are evaluated and graded, and funding is disbursed according to the level of achievement. The current position of the state and HEIs with respect to the indicators is determined in the annual SHEP along with targets for the financial year. The responsibilities of the SHEC with respect to planning, execution and evaluation in this regard are discussed in Chapter 5. Upon meeting certain prerequisites, states receive funds based on achievements and outcomes in key impact areas—access, equity and excellence. While using a comprehensive outcome and results-based approach to direct funding is a step in the right direction, the process to evaluate states and HEIs through either of the two approaches can be considered a duplication of efforts made by NAAC. Data from budget allocation since the launch of RUSA shows a rapid increase in allocation made for the scheme as well as utilisation of funds (Table 11).

<sup>193</sup> Tilak, J. B. (2017). Union-State relations in India's Higher Education. *NUEPA Occasional Paper*, 50

<sup>194</sup> The problems with ad-hoc funding and incremental are discussed in greater detail in Section 4

<sup>195</sup> Notes on Demand for Grants, Union Budget, various years

**Table 11: Budget allocation towards Rashtriya Uchchatar Shiksha Abhiyan (RUSA) (in Rs. Crore)**

Financial Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Budget Estimate	400	2,200	1,155	1,300	1,300	1,400	2,100
Revised Estimate	240	397.47	*	1,300	1,300	1,500	—
Actual	6.95	*	1,037.03	1,416.06	1,245.98	*	—

Data Source: Notes on Demand for Grants, Expenditure Budget, Ministry of Finance, various years

\* Data not available

### 3.2.4 Recommendations

#### a. Increase regulatory and funding capacity of state-level authorities

The UGC and other regulatory agencies set norms on issues ranging from teacher pay to eligibility conditions, leaving little room for state-level authorities. However, states take on a larger burden when it comes to funding HEIs. This lopsided arrangement has led to a scenario where state-funded HEIs receive more directions than funding to improve their quality.<sup>196</sup> The establishment of State Higher Education Councils is a welcome move. However, their role is so far limited to a funding and implementing agency. At present, the UGC and other central regulatory agencies are overburdened. Setting up regional offices in coordination with state governments will help improve the quality and oversight over HEIs in the particular region.

#### b. Increase plan grants to state-level institutions

Most of the funding disbursed by state governments is in the form of non-plan grants. These grants meet only the operational expenses of an HEI and are often awarded in an ad-hoc manner. For state-level institutions to improve, they need to be awarded a larger share of plan or development grants. Tied to specific objectives, these funds will help improve the quality of state-level institutions. Setting up regional regulatory and funding agencies will aid in the funding and execution of plan grants.

## 3.3 Institution-level funding

India follows a negotiated or incremental model for the public funding of HEIs, a common model in many developing countries.<sup>197</sup> But the incremental model explained below brings many inefficiencies to the system, exacerbated by reduced government spending over the last two decades. As a consequence, funding agencies have prioritised cost recovery measures in HEIs. These measures range from increasing fees to introducing self-financing courses. We discuss the incremental model of funding and the recent moves towards cost recovery in government HEIs below.

### 3.3.1 Incremental model of funding

Funding in this model is not based on performance criteria but on the negotiating capacity of the HEI in relation to the funding agency (UGC or State governments). For instance, an increase in enrolment does not necessarily guarantee increased funding.<sup>198</sup> There are three kinds of funding arrangements in the negotiated model: incremental budgeting, ad-hoc negotiations and fixed revenue agreements.<sup>199</sup> In India, incremental budgeting is the most common form of funding.<sup>200</sup> In this model, grants are made on annual increments at a fixed rate.<sup>201</sup> These increments are neither performance-based nor need-based. A common feature of the incremental budgeting model is the tight restrictions placed on expenditure. This is also the case in India, where spending is restricted to a prescribed list of admissible expenditures.<sup>202</sup>

<sup>196</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>197</sup> Albrecht, D., & Ziderman, A. (1992). *Funding Mechanisms for Higher Education: Financing for Stability, Efficiency, and Responsiveness*. World Bank Discussion Papers. World Bank

<sup>198</sup> Albrecht, D., & Ziderman, A. (1992). *Funding Mechanisms for Higher Education: Financing for Stability, Efficiency, and Responsiveness*. World Bank Discussion Papers. World Bank

<sup>199</sup> Albrecht, D., & Ziderman, A. (1992). *Funding Mechanisms for Higher Education: Financing for Stability, Efficiency, and Responsiveness*. World Bank Discussion Papers. World Bank

<sup>200</sup> Sharma, M. (1985). *State Funding of Universities: A Study of Maintenance Grants to Universities*. Assoc. of Indian Universities

<sup>201</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>202</sup> Sharma, M. (1985). *State Funding of Universities: A Study of Maintenance Grants to Universities*. Assoc. of Indian Universities

Funding at the state level depends on the availability of state resources and can be subject to ad hoc negotiations.<sup>203</sup> HEIs with greater autonomy (like the IITs, IIMs etc.) have fixed revenue agreements with the government.<sup>204</sup>

The incremental funding model is inefficient. Since a flat increment is negotiated each year, not based on improvements or needs, there is very little incentive for HEIs to become more efficient.<sup>205</sup> As a consequence, funds and resources are spent inefficiently. Despite the problems with the incremental model, it is not easy to shift to a new model of funding. One of the efforts to address this issue has been through cost recovery measures.

### 3.3.2 Cost recovery

Policy focus started shifting towards cost recovery in the 1990s, against the backdrop of rising demand for higher education and private sector entry. Many committees have discussed the issue of cost recovery since.

The Punnayya Committee (1991) set a target of 15%-25% for cost recovery and suggested that 65% of the expenditure in HEIs should be dedicated to teaching and research.<sup>206</sup> The Swaminathan Committee (1992) looked into possible options for cost recovery for both the government and HEIs. Its recommendations included charging industries a higher education cess; developing self-financing courses; and charging higher fees from students who can afford it.<sup>207</sup> The Birla-Ambani Committee (2000) took a more radical view on fees, suggesting a user-pays principle, where students paid the full cost of higher education.<sup>208</sup> The committee suggested that economically and socially backward students could be supported by loans and scholarships.

A stumbling block in implementing cost recovery measures is that government-run HEIs do not have

control over funds they generate. If they receive government funding, any income generated is adjusted against the funds granted to them.<sup>209</sup> Since they receive funding irrespective of cost recovery measures, HEIs have very little incentive to adopt such measures. For this reason, the Punnayya Committee had suggested setting up a fund for the generated income to be utilised for the development of HEIs.<sup>210</sup>

In the last decade, focus has shifted to the question of autonomy itself. As we saw in Chapter 2, the government has adopted a policy of granting autonomy to high performing HEIs. One of the benefits of autonomy is the financial freedom to explore cost recovery measures without government interference. However, this has faced pushback from faculty at some government HEIs.<sup>211</sup> The resistance to financial autonomy is primarily based on two concerns. First, the quality of well-funded public universities may suffer without government funding. Second, cost recovery measures invariably lead to an increase in fees which could make higher education less accessible. The DNEP19 also highlights the need to grant greater autonomy to HEIs, both academic and financial, to enhance the quality of higher education; this is further discussed in Chapter 5.

HEIs that are best placed to implement cost recovery measures are also ones that receive a lot of government funding. Institutions like the IITs have already introduced many cost recovery measures by increasing their fees eight-fold in the last decade.<sup>212</sup> But introducing such a model across the board could affect the quality of HEIs by curbing funding for academic and research programmes. However, a distinction must be drawn between the operational and development expenses of HEIs.

Cost recovery measures are primarily aimed at recouping operational expenses. Development funding, on the other hand, is used to develop academic and research infrastructure. One way of drawing this distinction is

<sup>203</sup> Sharma, M. (1985). *State Funding of Universities: A Study of Maintenance Grants to Universities*. Assoc. of Indian Universities

<sup>204</sup> Albrecht, D., & Ziderman, A. (1992). *Funding Mechanisms for Higher Education: Financing for Stability, Efficiency, and Responsiveness*. World Bank Discussion Papers. World Bank

<sup>205</sup> Albrecht, D., & Ziderman, A. (1992). *Funding Mechanisms for Higher Education: Financing for Stability, Efficiency, and Responsiveness*. World Bank Discussion Papers. World Bank

<sup>206</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>207</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>208</sup> Matthew, Anthony, (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>209</sup> Panigrahi, Jinusha (2017): *Resource Allocation and Innovative Methods of Financing Higher Education in India*, CPRHE Research Paper Series No. 6

<sup>210</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>211</sup> Pathak, V. (2018, March 23). UGC autonomy notice sparks fear of fee hikes. *The Hindu*

<sup>212</sup> Fees at IITs have been increased from Rs 25,000 in 2008 to Rs 2 lakhs in 2016. See (2016, April 7). Annual fee for UG courses at IITs hiked. *The Hindu*

through creating a one-stop nodal research agency, like many countries around the world.<sup>213</sup> The role of such councils is to fund high-quality research and innovation. India is moving towards such a model with the Higher Education Financing Agency (HEFA), that supports research and innovation at prestigious institutions through CSR funds.<sup>214</sup> It is too early to comment on the success of this programme as it was launched less than a year ago. Further, to meet a portion of the development expenses, the DNEP19 proposes establishing the National Research Foundation (NRF) to streamline funding for research and innovation in HEIs.

A natural consequence of implementing cost recovery measures is the increase in fees. Autonomous institutions especially are not subject to fee caps set by regulatory agencies or affiliating universities. However, this could make higher education more expensive and beyond the reach of economically backward students. We discuss the various options for student-level funding in the following section.

### 3.3.3 Recommendations

#### a. Move away from incremental model of funding

Many alternatives to the incremental funding model exist, such as the voucher system and outcome-based funding, to name a few. Going forward, the government could explore these alternatives or incorporate aspects of these models. With the Pradhan Mantri Vidya Lakshmi Karyakram under the NSDL e-Governance loan platform, the government is moving towards a voucher system by easing the process of getting a student loan. The government could take this a step further by directly subsidising student loans rather than funding HEIs. This would make higher education more accessible and reduce the burden on households.

#### b. Establish a research council to fund and oversee research and innovation

There is a need to make an explicit distinction between funding for research and operational expenses. Though grants are divided into plan and non-plan grants for this purpose, these grants are awarded by the same agency

(the UGC or the respective state government). Agencies that award these grants cannot also oversee the quality of research being produced. For this reason, as proposed in the DNEP19, a National Research Foundation should be setup. The ICSSR already plays this role in social sciences. However, it administers a very small amount of funds to a select few institutions.<sup>215</sup> On the other hand, the HEFA is looking to play the role of a funding agency by pooling CSR funds. But, as a funding agency, it does not appear to have the capacity for oversight. A body solely dedicated to boosting research and innovation will also free up other agencies to focus on improving underfunded HEIs.

## 3.4 Funding private institutions

So far, we have discussed government spending on higher education. However, this accounts for a small proportion of higher education expenditure as privately-owned HEIs outnumber government ones. Privately owned institutions make up 77.8% of all HEIs in India and account for 67.3% of all enrolments.<sup>216</sup> There is little data available on the sources of funding for private HEIs since they do not disclose their spending. Even if they do, it has been suggested that these accounts are not accurate. The lack of data in funding has implications beyond transparency requirements. Without enough data, it is difficult to regulate private HEIs. It has been argued that private HEIs are almost entirely funded by student fees. Increasing student fees in private HEIs can make higher education less accessible. We discuss both the transparency and affordability of private education below.

### 3.4.1 Transparency

Until the 1980s, the government tracked the sources of funding for HEIs.<sup>217</sup> The increase in the number of private HEIs in the following decades has made it harder to track funding. It is easier to track government HEIs as their budget must be approved every year by the concerned government agencies, but no such data is available for private HEIs.

Private HEIs, however, do report their funding and expenditure to their respective university or regulator.

<sup>213</sup> Canada and the US for instance have National Research Councils that coordinate and fund research at the national level

<sup>214</sup> "Higher Education Funding Agency (HEFA) approves projects for Rs. 2,066.73 Cr to six higher education institutions", Press Information Bureau, 29 November 2017, <<http://pib.nic.in/newsite/PrintRelease.aspx?relid=173962>>

<sup>215</sup> See for a discussion, Chatterjee, P. (2002). Institutional context of social science research in South Asia. *Economic and Political Weekly*

<sup>216</sup> AISHE 2017-18

<sup>217</sup> See, Education in India series

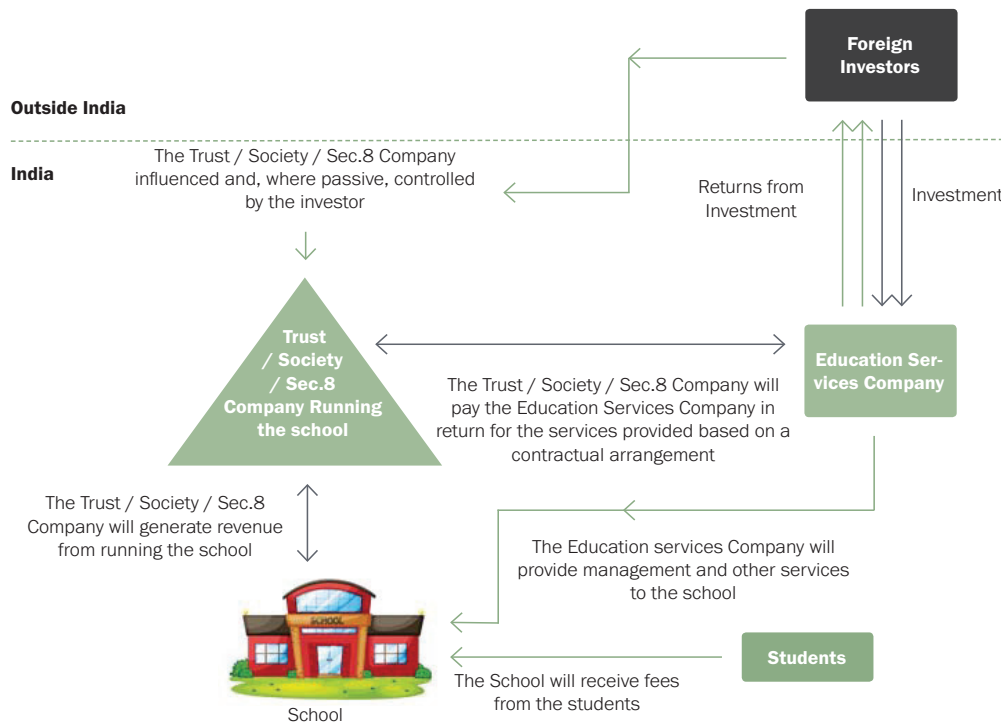
Some even publish their financial statements publicly.<sup>218</sup> However, DNEP16 called out the veracity of accounts maintained by private HEIs. The report noted that with minimal oversight the system encourages opacity in the financial management of HEIs.<sup>219</sup> It cites the example of capitation fees being charged as a 'parallel economy' that is unreported in financial statements.<sup>220</sup>

One of the reasons this 'parallel economy' exists is because for-profit HEIs are not allowed to operate in India. Privately owned HEIs in India are incorporated as charitable trusts and are usually family-run operations.<sup>221</sup> They can generate a surplus,<sup>222</sup> but are expected to reinvest the surplus into the development of the institution.<sup>223</sup> However, the administrators of these trusts invest their own money and expect a return on their investment.

In the absence of legal routes to turn a profit, HEIs resort to unscrupulous means. The most commonly heard complaint is that managements sell their quota of seats on the black market to the highest bidder. They have also been found to flout other norms. For instance, the Tandon Committee found that some private HEIs (deemed universities) accepted students far beyond the approved intake.<sup>224</sup> The Committee also found that the fee charged in many deemed universities is much higher than government or court-approved limits.<sup>225</sup>

In recent times, legal means of profiting from private HEIs have emerged. One popular model is to outsource teaching and management of the HEI to an outside company through a service agreement.<sup>226</sup> Teachers and other staff are hired by the company. But the company is not constrained by the non-profit requirement that HEI

Figure 15: Education Services Agreement structure



Source: Investment in Education. Nishith Desai Associates (Ed. 2010)

<sup>218</sup> See for instance, the financial statement of RV College of Engineering, Bengaluru <<https://rvce.edu.in/sites/default/files/Financial-statements-2016-17.pdf>>.

<sup>219</sup> Ministry of Human Resource Development, "Draft National Education Policy 2016"

<sup>220</sup> Ministry of Human Resource Development, "Draft National Education Policy 2016"

<sup>221</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>222</sup> TMA Pai Foundation v. State of Karnataka, AIR 2003 SC 355

<sup>223</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>224</sup> Tandon Committee (2009): *Report of the Committee for Review of Existing Institutions Deemed To Be Universities*

<sup>225</sup> Tandon Committee (2009): *Report of the Committee for Review of Existing Institutions Deemed To Be Universities*

<sup>226</sup> Nishith Desai Associates, "Investment in Education Sector", January 2018, available at <[http://www.nishithdesai.com/fileadmin/user\\_upload/pdfs/Research\\_Papers/Investment\\_in\\_the\\_Education\\_Sector.pdf](http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research_Papers/Investment_in_the_Education_Sector.pdf)>

managements face, so profits could be transferred to the company as a fee. This arrangement has been touted as a way for foreign institutions to enter the Indian market (Figure 15).<sup>227</sup> But there have been instances where the companies are also owned by the management. To be sure, there is nothing illegal about such an arrangement. HEIs hire outside consultants to provide several services. However, the lack of transparency around funding and expenditure in private HEIs will allow managements to exploit such arrangements.

Governments and regulators have sought to better regulate private HEIs over the last two decades. The first step in this respect ought to be greater transparency. Strictly enforced transparency requirements will help unearth corrupt practices at private HEIs. It will also enable better regulation of arrangements such as the one illustrated in Figure 15.

### 3.4.2 Affordability of private education

The expansion of the higher education sector in India was funded by households. There is little or no data on the proportion of the higher education sector funded by households. Education loans, which funded just 8% of all enrolled students in 2013-14, exceeded the total government expenditure on higher education.<sup>228</sup> It would be safe to assume that student fees are the single biggest source of funding in the higher education sector. In fact, private HEIs which do not receive government funding are funded almost entirely by student fees.<sup>229</sup> The average tuition fee for a regular four-year B.Tech course of a private institution is almost twice that for a public institution (Table 13).

Private HEIs, which now account for three-fourths of all enrolments, in general charge higher fees than government HEIs. In the case of technical programmes, their fees can be almost ten times higher.<sup>230</sup> A commonly-cited policy option to address the growing cost of education is to create scholarships for economically and socially-backward students in private HEIs.<sup>231</sup> Though

this proposal has been discussed for more than two decades, it has been a non-starter since fees are the primary source of revenue for private HEIs. In fact, even government expenditure on scholarships has fallen since 1990-91.

**Table 12: Government expenditure on scholarships**

Year	Total Government Expenditure on Scholarships (in Rs. Crore)	% of Total Expenditure on Higher Education
1990-91	13.3	0.43
1995-96	16.54	0.32
2000-01	18.45	0.15
2005-06	49.1	0.33
2010-11	45.14	0.11
2014-15	80.66	0.11

Data Source: Annual Analysis of Budgeted Expenditure on Education, MHRD, various years

In 2005, the Central Advisory Board of Education (CABE) noted that the scholarship budget is an easy target when cuts are made to public expenditure on education.<sup>232</sup> From Table 12, we see that this trend has continued since. From 0.43% in 1990-1991, the scholarship budget accounted for just 0.11% of the total expenditure on higher education in 2014-2015. With limited funding, very few students receive financial support from the government. For instance, the needs-based National Scholarship Scheme has an annual target of 82,000 students (or 0.2% of enrolments in 2016-2017).<sup>233</sup> Between loans and scholarships, less than 10% of enrolled few students have access to financial support. This does not account for students who could not afford to enrol in HEIs. As observed in the cases of China (Double First-Class University Strategy) and South Korea (Brain Korea 21)<sup>234</sup>, the transition from a mass to a universal higher education system is not possible without increased financial support.<sup>235</sup>

<sup>227</sup> Nishith Desai Associates, "Investment in Education Sector", January 2018, available at <[http://www.nishithdesai.com/fileadmin/user\\_upload/pdfs/Research\\_Papers/Investment\\_in\\_the\\_Education\\_Sector.pdf](http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research_Papers/Investment_in_the_Education_Sector.pdf)>

<sup>228</sup> Rani, P. G. (2016). Financing higher education and education loans in India: Trends and troubles. *Journal of Social Science*, 12(4)

<sup>229</sup> Tilak, J. B., & Varghese, N. V. (1991). Financing higher education in India. *Higher Education*, 21(1)

<sup>230</sup> British Council (2014): *A Brief Overview of Chinese Higher Education System*, available at <[https://www.britishcouncil.in/sites/default/files/higher\\_education\\_system\\_of\\_china.pdf](https://www.britishcouncil.in/sites/default/files/higher_education_system_of_china.pdf)>

<sup>231</sup> Birla-Ambani Committee Report (2000): *Report on a Policy Framework for Reforms in Education*

<sup>232</sup> Central Advisory Board of Education, "Financing of Higher and Technical Education", (2005)

<sup>233</sup> See MHRD's Scholarships & Education Loan: <<http://mhrd.gov.in/scholarships-education-loan-0>>.

<sup>234</sup> Cases of China and South Korea discussed in detail in Chapter 4

<sup>235</sup> Central Advisory Board of Education, "Financing of Higher and Technical Education", (2005)



Households will continue to be the primary funder of HEIs so long as gains from higher education remain high.<sup>236</sup> Recent estimates suggest that the rate of return for higher education in India is between 12%-15%.<sup>237</sup> This is higher than in many developed countries.<sup>238</sup> Importantly, the rate of return for primary education in India is falling.<sup>239</sup> This will serve to increase the demand for higher education. With high rates of return, governments can justify shifting the financing of higher education to households.<sup>240</sup> Such households will not rely on scholarships but are likely to rely on credit. To meet this demand, the government should at least look to improve access to student loans.

At the beginning of this chapter, we stated that higher education has elements of both private and public good. Higher education serves public interest in the sense that education is a rivalrous<sup>241</sup> and excludable<sup>242</sup> good. A snapshot of the tuition fees to prepare for courses in engineering and technical education in Table 13 suggests that households are willing to pay large amounts to access these degrees. We also find that the cost of higher education, for instance for a regular four-year B.Tech degree, is on average twice as high for private HEIs. Therefore, higher education, as a service, cannot be necessarily classified as a public or private entity.

**Table 13: Cost of pursuing engineering and technical education (in Rupees)**

Preparation for Entrance Examination			
S No	Institution	2-year Course Preparation	
1	Aakaash Institute (Delhi)	3,33,350	
2	Bansal Classes (Kota)	2,86,000	
3	Brilliant Tutorials (Delhi)	1,10,000	
4	FIITJEE (Delhi)	3,50,000	
5	Narayana Academy (Delhi)	3,59,000	
6	Vidyamandir Classes (Delhi)	3,25,000	
Degree Course			
S No	Institution	4-year B.Tech Degree	Type
1	Delhi College of Engineering	6,45,000	Public
2	Indian Institute of Technology Delhi	10,00,000	Public
3	National Institute of Technology Delhi	5,00,000	Public
4	Netaji Subhas University of Technology	2,28,600	Public
5	Ahmedabad University	6,92,000	Private
6	Amity University	8,12,000	Private
7	BITS Pilani	12,72,000	Private
8	Manipal Institute of Technology	15,50,000	Private
9	Vellore Institute of Technology	6,92,000	Private

Authors' compilation

<sup>236</sup> Carnoy, M., Froumin, I., Loyalka, P. K., & Tilak, J. B. (2014). The concept of public goods, the state, and higher education finance: a view from the BRICs. *Higher Education*, 68(3)

<sup>237</sup> See for a discussion, Smrutirekha Singhari and S Madheswaran, "The Changing Rates of Return to Education in India: Evidence from NSS Data", ISEC Working Paper 358 (2016)

<sup>238</sup> Carnoy, M., Froumin, I., Loyalka, P. K., & Tilak, J. B. (2014). The concept of public goods, the state, and higher education finance: a view from the BRICs. *Higher Education*, 68(3)

<sup>239</sup> Singhari, S. and Madheswaran, S., "The Changing Rates of Return to Education in India: Evidence from NSS Data", ISEC Working Paper 358 (2016)

<sup>240</sup> Carnoy, M., Froumin, I., Loyalka, P. K., & Tilak, J. B. (2014). The concept of public goods, the state, and higher education finance: a view from the BRICs. *Higher Education*, 68(3)

<sup>241</sup> Rivalrous: one student's enrolment at an HEI prevents another student from enrolling and reduced their chance of obtaining higher education

<sup>242</sup> Excludable: a student's ability to pay fees prevents another student who has not paid fees from accessing an HEI

### 3.4.3 Recommendations

#### a. Greater transparency in private sector funding

It is difficult to address many of the problems in private sector HEIs without enough data on funding. It may be difficult to effectively enforce transparency norms immediately on private HEIs. An important first step must be collecting data on funding. The AISHE, for instance, is a valuable resource for data on enrolments and HEIs. It contains both aggregated and unit-level data which allows researchers and policymakers to zoom in on specific issues or to make broader assessments when necessary. A similar database for funding will help provide valuable insights into the functioning of private HEIs. For one, it will help clarify the magnitude of the 'parallel economy' in private higher education.

#### b. Improve access to financial support

As India rapidly expands its higher education sector, the question of affordability will become more urgent. Universal access to higher education involves bringing every student into the system. At present, funds dedicated to financial support are inadequate and have seen a significant decline in the last two decades. It may not be possible for the government to suddenly increase the number of scholarships., but it can make credit more accessible and at preferential terms for the economically backward.

## 3.5 Summary of recommendations

Recommendations	Objective
Regulatory capacity of state-level authorities should be expanded	Reduce the burden on central agencies and improve the quality of state-funded HEIs
Increase plan grants to state-funded HEIs	Improve the quality of state-funded HEIs
Move away from incremental funding model	Make government funding more efficient
Set up National Research Foundation	Distinguish between development and operational funding, and catalyse research in HEIs
Improve transparency in private funding of higher education	Better regulate private HEIs
Improve access to financial support	Make higher education more affordable

# Research and Innovation

The creation, application and dissemination of new ideas and technologies find its roots in fundamental research conducted in HEIs. Good quality, independent research actively feeds into pedagogy through cutting-edge curriculum, forms the basis of business development in the corporate sector, and can also be the anchor for policy-making.<sup>243</sup> 'Research universities' in the United States, China and South Korea are considered to be the driving institutions of the 21<sup>st</sup> century knowledge economies. India, in contrast, lacks a culture of independent academic research, except for a handful of research institutes.

This chapter is divided into four sections. In Section 1, we describe the research environment in Indian higher education institutions. Here, we also briefly touch upon the reforms initiated in countries like China and South Korea to build world-class research institutions and demonstrate the need for India to learn from their positive experience. The section also describes the shortcomings of India's poor research output. In Section 2, we give details about India's research potential. This includes analyses of how much money is spent on research and development (R&D) in Indian universities and colleges, the knowledge products generated from research, and the resulting impact from dissemination of research works. In studying metrics for these parameters, we particularly draw comparisons to China to highlight its remarkable growth in research.

In Section 3, we examine the issue of inadequate expenditure on research activities in HEIs as well as research institutions. Recommendations to promote research within the university system and outside, in research institutions, are summarised in Section 4.

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<sup>243</sup> Ravi, S. "Strengthening India-U.S. Relations through Higher Education". The Modi-Obama Summit: A leadership moment for India and the United States. Brookings India Initiative Report. September 2014

## 4.1 The research landscape

Research in HEIs, across the world, is a measure of quality of higher education. Research is “uncovering or generating new knowledge, or solving particular practical or theoretical problems”.<sup>244</sup> It is a form of conducting systematic and rigorous enquiry that leads to outputs—new ideas and innovation, which are then disseminated. The discovery of new knowledge, ideas and technologies is essential in driving the future of society and humanity.

In HEIs, research has a direct impact on the quality of teaching. In the larger context, research contributes “not only [to] general education and cultural enrichment, but also [to] professional training and certification, lifelong education, the inculcation of democratic values, the provision of social mobility, the pursuit of fundamental research, the development of advanced technology, the provision of advanced medical care and public health, support for agricultural development, material resources, conservation and economic development” (Rhodes, 2004).<sup>245</sup> It has a personal as well as societal purpose.

In India, research is not viewed as a primary and vital function of academics and is seldom measured. More specifically, research leading to PhD degree in a university is an extension of postgraduate education. Therefore, research has to be seen as a core function of an HEI, affiliating or unitary.<sup>246</sup> Apart from industry-based research, research conducted at independent think-tanks has become increasingly important and relevant for policy-making. The government is the primary consumer of the work produced by research institutions. Research institutions have the necessary skills and expertise to provide inputs that are crucial to policy-making.

Indian HEIs have failed to identify the true potential of a system that provides skilled human resources for a strong research and development ecosystem. The Yash Pal Committee (2009) criticised HEIs for treating teaching and research as separate activities. It pointed out that universities have been reduced to centres of teaching and examining masses, without any scope or desire to encourage innovative thinking. It called for all research bodies to connect with HEIs and create teaching opportunities for researchers, and all universities to be teaching and research universities.<sup>247</sup>

Pioneering institutes, top universities and Centres of Excellence have a greater role in creating and disseminating new knowledge. They should acknowledge that teaching and research are complementary and mutually supportive activities for academics. A better research environment attracts high-quality faculty. For an HEI to grow into a high-performing knowledge institution, quality publications are crucial for its growth, visibility, brand equity and relevance. In turn, high-quality publications are likely to position the university to foster global collaborations, which would ultimately attract good faculty and students.<sup>248</sup>

The revenue model of HEIs in India is such that monetising activities of teaching and training is easy, but not of research. The tuition fees collected from students, in private as well as public institutions alike constitutes a significant share of the revenue of HEIs.

Indian HEIs have produced an increasing number of research publications in recent years, but with low impact. This is driven by several factors such as low output of PhD candidates, skewed government funding for fellowships, research documentation and publication, etc., and lack of international research collaborations. Further, Indian universities place a stronger premium on teaching rather than research; a significant portion of faculty's time is devoted exclusively to teaching due to high workload. The severe shortage in teaching staff along with hiring of ad-hoc and part-time faculty members has skewed priorities among faculty members, as discussed in detail in Chapter 1. The lack of a performance culture, segregation of R&D institutions and low morale among academics have ensured that even the country's top universities remain largely teaching-focused with limited research and doctoral education.

In contrast, countries such as China and South Korea have built vibrant academic systems. With research as the very basis of their higher education system, they have positioned themselves for leadership among the knowledge-based economies.

China's higher education system has developed over the years through policy reforms introduced in a phased manner: 211 Project, 985 Project, Key Discipline Innovation Platform, Key Discipline Project, and most

<sup>244</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>245</sup> Rhodes, F. H. (2004). *Reinventing the university. Reinventing the University*. London: *Economica*

<sup>246</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>247</sup> Yash Pal Committee (2009): *Report of the Committee to Advise on Renovation and Rejuvenation of Higher Education*

<sup>248</sup> Ernst & Young Pvt Ltd. “*Higher Education in India: Twelfth Five Year Plan (2012-2017) and Beyond*”. FICCI Higher Education Summit 2012

recently, the Double First Class University Plan.<sup>249</sup> Initiated in 2015, the Double First Class University Plan aims to create world-class universities and disciplines by the end of 2050. The programme is geared towards “building an innovation excellence culture to enhance the level of scientific research” so that by 2050 China would be a higher education power.<sup>250</sup> The sector has been a key focus area in the last two decades. Both national and local governments in China funded universities to improve facilities, build research centres, raise standards of research and attract world-renowned faculty. Research suggests that Project 985 (1998) had a positive effect on publication outputs of the 39 universities it supported, thereby leading to rapid advancement of China’s major universities in the international league.<sup>251</sup> In China, more than two dozen higher education research centres and several government agencies are involved in higher education policy.<sup>252</sup> No such independent research or policy centres focusing on higher education exist in India.

Similarly, South Korea began focusing on university-led innovation in 1998. The Brain Korea 21 (BK 21) project was a national endeavour to prepare high-powered and creative Korean graduates. BK21 aimed at fostering world-class graduate schools and high-quality scholars by providing funds to HEIs. The government invested \$1.2 billion in universities over a period of seven years. South Korea’s performance—in terms of the amount of research conducted and its impact—in R&D has been exemplary in a very short period. BK21 has successfully changed the university atmosphere and improved research activities in graduate schools.<sup>253</sup>

India, on the other hand, is struggling with a generally poor university system and a frail higher education sector. Previous chapters of this report detail the complexity of India’s academic institutions. To compete successfully as a knowledge-based economy and expand, India needs HEIs that (i) produce bright and employable graduates, and (ii) support sophisticated research and technology in diverse fields. India should aim to position itself among the top five countries in terms of research papers published, citations and the number of PhD degrees awarded by 2030. This requires developing research-

focused universities that deliver high-quality research output and research-focused graduates.<sup>254</sup>

## 4.2 Research capacity

The abstract nature of research makes it hard to measure. This report breaks down research capacity in terms of input, output and impact. The following section elaborates on these three aspects as measures of research capacity.

Here, we would like to point out that this section uses data compiled from a variety of sources. This goes to show the poor understanding of and lack of need felt for measuring research in India. No well-integrated data sources or dashboards exist to study the scale of research being conducted in India, even at a sectoral level.

The level of national expenditure on R&D and number of trained personnel conducting research are input metrics to measure research. Output is measured using metrics such as number of publications – journals, papers, articles and books. Metrics to measure the impact of research – number of citations, count of newspaper editorial citing, number of patents filed and revenue earned from royalties, licenses or high technology exports – differ depending on the field in which research is conducted.<sup>255</sup>

### 4.2.1 Inputs for research

In terms of funds devoted to expenditure on R&D, India is falling way behind other countries. India’s gross expenditure on R&D (GERD) as a proportion of GDP in 2015 (0.65) is almost similar to that in 1996 (0.62) (Figure 16). In sharp contrast, China’s expenditure on R&D has risen rapidly and almost quadrupled in two decades, while the United States’ expenditure has increased steadily. Chinese universities have quickly recognised that PhD students are the workforce of research business. In 2017, Tsinghua University (China) awarded more than twice the number of doctorates compared to those conferred by MIT (USA).<sup>256</sup> South Korea’s GERD has increased almost 1.5 times since 2006.

<sup>249</sup> Peters, M. A., & Besley, T. (2018). China’s double first-class university strategy: 双一流.

<sup>250</sup> Peters, M. A., & Besley, T. (2018). China’s double first-class university strategy: 双一流.

<sup>251</sup> Peters, M. A., & Besley, T. (2018). China’s double first-class university strategy: 双一流.

<sup>252</sup> Altbach, P. (2005). India: A world-class country without world-class higher education. *International Educator*, 14(6)

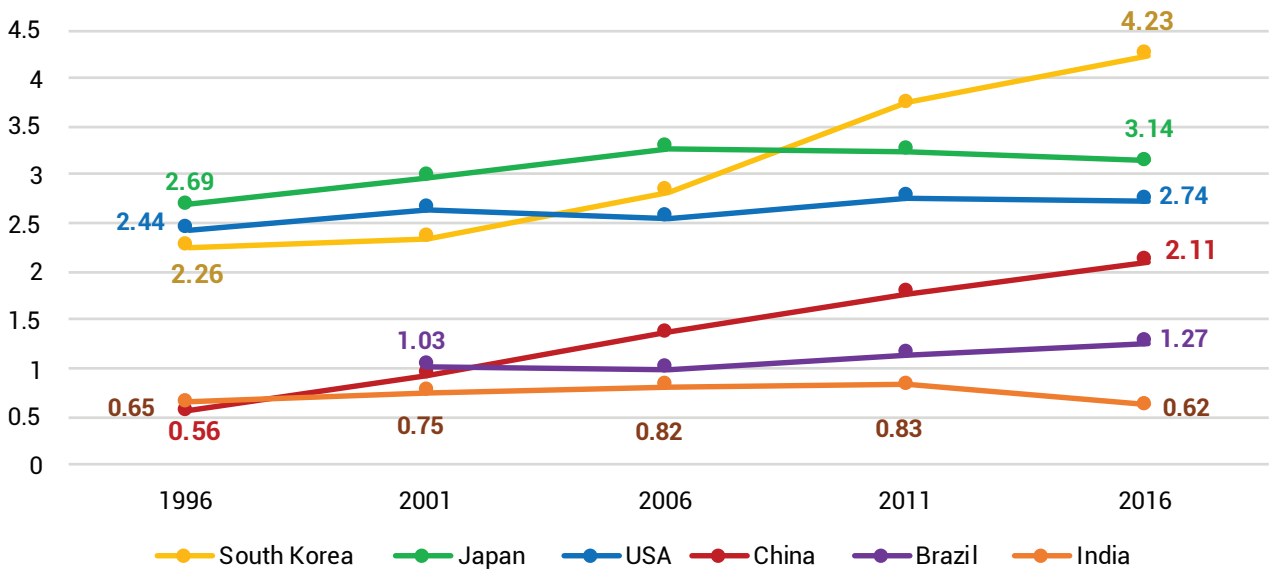
<sup>253</sup> Moon, M., & Kim, K. S. (2001). A case of Korean higher education reform: The Brain Korea 21 Project. *Asia Pacific Education Review*, 2(2)

<sup>254</sup> Ernst & Young Pvt Ltd. “Higher education in India: Moving towards global relevance and competitiveness”. FICCI Higher Education Summit 2014

<sup>255</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>256</sup> Tsinghua University may soon top the world league in science research. (2017) *Economic and Political Weekly*

Figure 16: Gross expenditure on R&D, as a proportion of GDP

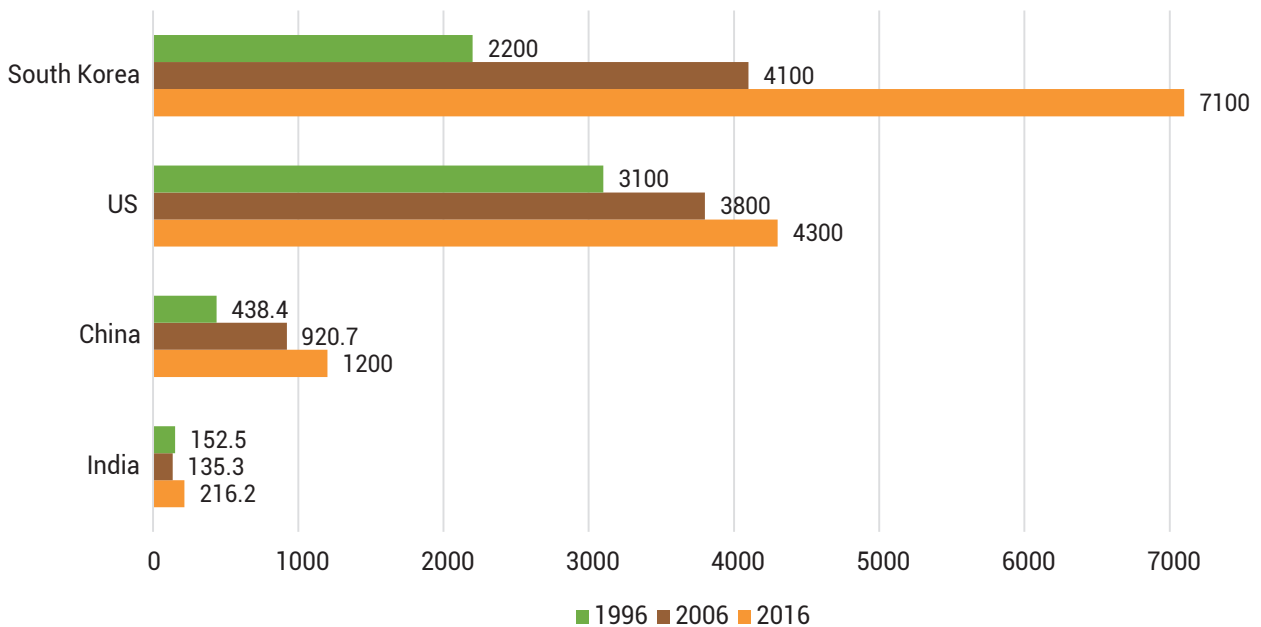


Data Source: Adapted from UNESCO Institute for Statistics (UIS), 2016  
 Note: For India, the latest data available is for 2015, not 2016.

As shown in Figure 17, India also lags in the number of full-time researchers per one million inhabitants. China and South Korea's increased expenditure on research and policy reforms has resulted in a manifold increase in researchers in the two countries. The U.S. has seen

a steady rise in its research capacity. Figures 16 and 17 together suggest that there is a high correlation between GERD and the number of researchers; countries with higher GERD have greater research capacity.

Figure 17: Number of researchers per one million inhabitants



Data Source: Adapted from UNESCO Institute for Statistics (UIS), 2016  
 Note: For India, the data available is for 2000, 2005, 2010. For India, South Africa and US, the latest data available is for 2015.

**Table 14: Top 10 most popular PhD disciplines**

Discipline	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Science	5,393	4,305	5,822	5,623	6,607	8,026	8,880
Social Science	4,215	4,597	3,721	2,960	3,248	3,524	3,894
Engineering & Technology	2,081	2,186	2,583	2,597	2,785	3,366	4,907
Agriculture	1,804	3,203	2,307	1,545	1,956	1,865	4,426
Indian Language	1,535	1,720	1,997	1,384	1,669	1,557	1,936
Medical Science	1,239	1,644	900	985	1,226	1,507	1,422
Management	694	717	1,102	1,071	983	1,522	1,667
Commerce	874	936	1,052	1,334	1,179	923	1,304
Education	724	725	851	727	822	1,626	996
Foreign Language	481	687	746	595	635	710	814

Data Source: AISHE, various years

Through the years, several commissions have recommended that the shortage of faculty in higher education can be overcome by offering a large number of postgraduate and research scholarships, and upgrading teachers' salaries (Radhakrishnan Commission).<sup>257</sup> Yet, academic institutions in India remain severely under-resourced. AISHE data shows that between 2011-12 and 2017-18, there has been more than a 60% increase in the number of PhDs awarded. The subject areas shown in Table 14 account for almost 90% of the PhDs awarded. While the number of PhDs awarded in Science, Commerce, Education and the languages has increased in absolute numbers over time, they remain unchanged as a share of the total number of degrees awarded. There has also been a decline in the share of PhD degrees awarded in the fields of social sciences (9%) and medical science (14%) since 2011-12. Though HEIs are expected to have a balanced focus on research and teaching, the trend in terms of PhD degrees awarded suggests that few institutions have real research focus.<sup>258</sup> A decline in the number of scholars with PhD degrees translates to a shortage of faculty in HEIs. As a result, the quality of postgraduate education remains poor.

## 4.2.2 Research output

Publication count is a key measure of the productivity of research. These include the number of journals, papers/articles and books published. Research journals are a key outlet for research publications.<sup>259</sup> Table 15 shows

the number of journals indexed and the proportion of publication of journals in two separate databases, Web of Science and Scopus, along with country ranks for the U.S., China and India in 2013. Expectedly, the bulk of journals are published in the U.S.. China's share of STEM papers, as per Scopus, has risen from 4% in 2000 to 19% in 2016, which is more than U.S.'s contribution.<sup>260</sup>

The SCImago Journal Rank (SJR), a measure of a journal's impact and influence, ranked 34,171 journals published globally in 2017. Of these, 13,947 were American, 672 were Chinese and 525 were Indian. Figure 18 shows the SJR score for the top ranking journals in all three countries. The highest ranking journal globally is from the U.S.. China's top-ranking journal held a global rank of 361, while India's highest-ranking journal, *Bulletin of Astronomical Society of India*, ranked 966.

**Table 15: Journals indexed in Web of Science and Scopus, 2013**

Country	Journals					
	WoS			Scopus		
	N	%	Rank	N	%	Rank
US	4,176	30.7	1	5,858	28.4	1
China	269	2	6	489	2.4	6
India	200	1.5	11	436	2.1	7

Source: Mongeon, P., & Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: a comparative analysis. *Scientometrics*, 106(1), 213-228.

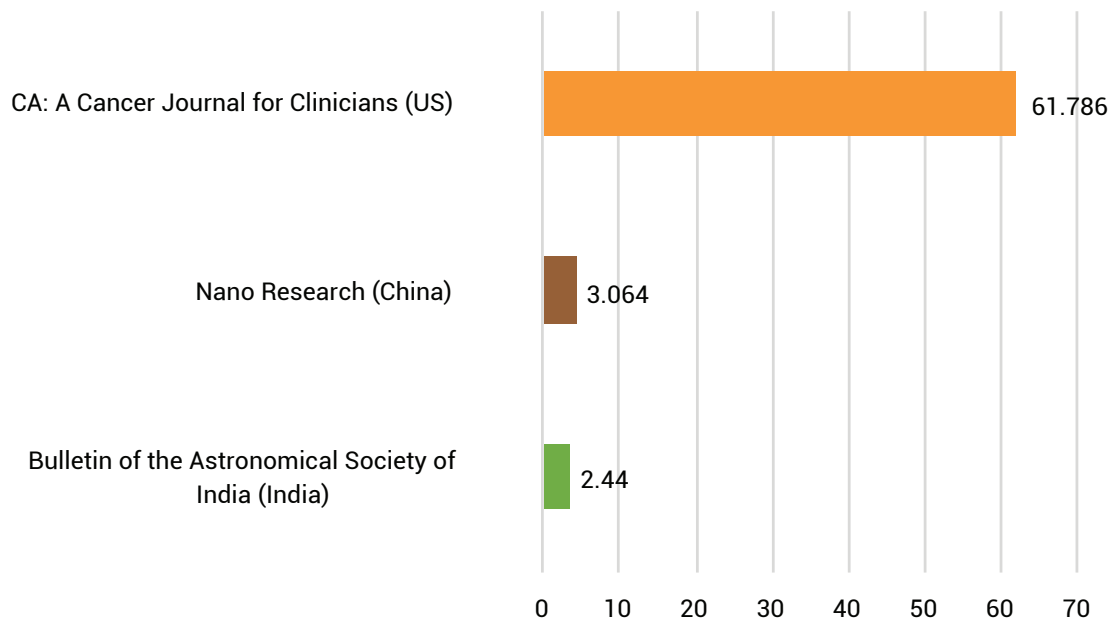
<sup>257</sup> Mathew, Anthony (2016), *Reforms in Higher Education in India: A Review of Recommendations of Commissions and Committees on Education*, CPRHE Research Paper Series No. 2

<sup>258</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>259</sup> Thorat, S., & Verma, S. (2017). *Social Science Research in India: Status, Issues, and Policies*. Oxford University Press

<sup>260</sup> Scopus

Figure 18: SJR Score for top ranking journals, by country



Data Source: SCImago, (n.d.). SJR – SCImago Journal & Country Rank [Portal]

The SCImago Institutions Rankings (SIR), a classification of academic and research-related institutions ranked by a composite indicator that combines three different sets of indicators based on research performance, innovation outputs and societal impact measured by their web visibility, ranked 5,637 institutions in 2018. Of these, 759 institutions were American, 375 were Chinese and 271 were Indian. In the list of top 50 institutions, 27 institutions are from the U.S., while six are from China. No Indian institution appears in the list of top 100 institutions. The Council of Scientific and Industrial Research, ranked first among Indian institutes, has a global rank of 132, followed by National Chemical Laboratory, globally ranked 275.

Between 2013-16, China alone had four universities among the top 10 universities that published papers in the top 1% most highly cited journals in maths and

computing. The other top-ranking institutions are from the U.S. (3), Singapore (2) and Hong Kong (1).<sup>261</sup>

Publication count of papers in refereed scientific and technical journals is also an output measure of research.<sup>262</sup> As per Figure 19, whereas the number of research papers published in India has increased in the last two decades, it still significantly lags behind those released in other countries.

Tsinghua University in China is predicted to be on track to produce the top 1% most highly cited STEM papers by 2022. In 2013-16, MIT led in the top 1% STEM papers, while Tsinghua produced more of the top 1% most highly cited papers in maths and computing.<sup>263</sup> China is also now the largest contributor to papers published in global science, accounting for 23% of the scientific publications in international journals indexed by Scopus.<sup>264</sup>

<sup>261</sup> Tsinghua University may soon top the world league in science research. (2017) *Economic and Political Weekly*

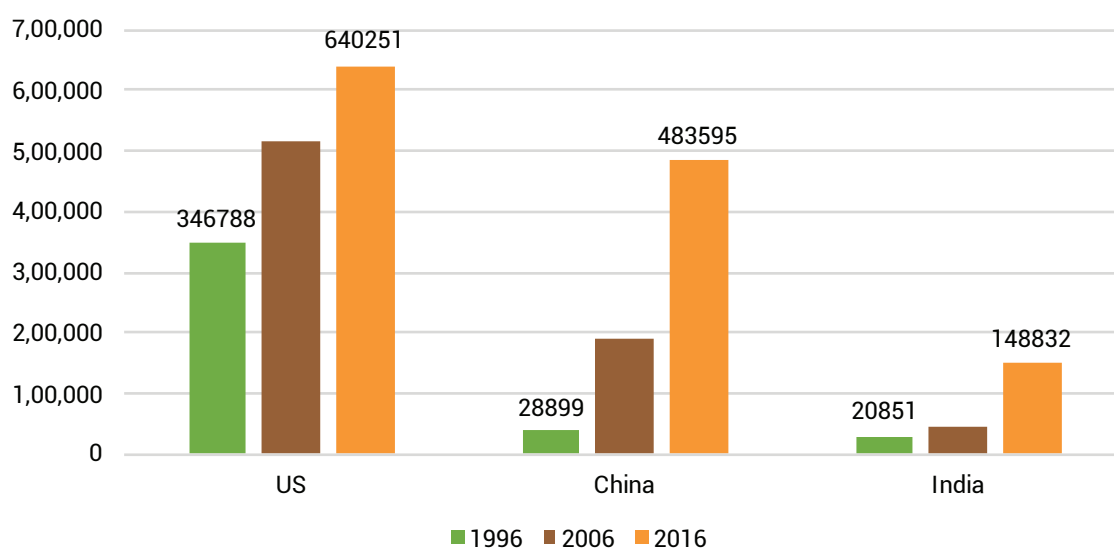
<sup>262</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>263</sup> Tsinghua University may soon top the world league in science research. (2017) *Economic and Political Weekly*

<sup>264</sup> Study International Staff. (2018, November 22). China is set to beat the US for top STEM research. Here's why.



Figure 19: Number of publications



Data Source: SCImago, (n.d.). SJR – SCImago Journal & Country Rank [Portal]

Table 16 shows that, since 2004, the number of journals and articles published in various subject categories has not changed much. In fact, the number of papers published between 2014-18 is much lower than that for 2004-08 and 2009-13. An inadequate number of journals further discourage undertaking of research in universities and research institutions. Perhaps, a decline in the journals published between 2014-18 could be a direct consequence of the UGC derecognising

certain 'fake' journals in recent years. Of the 6,791 journals published in India between 2004 and 2018, 11% are published in Health Science, Pharmacology and Pharmaceutical Science, followed by Biological Sciences (7%) and Agricultural subjects (5.3%). A similar trend is observed for papers published by subject area: 12% of the 12,15,890 papers are published in Health Science, Pharmacology and Pharmaceutical Science, and 8% each in Biology and Agriculture.

Table 16: Journals and articles published in India, by subject category

Subject	Journals			Papers/Articles		
	2004-08	2009-13	2014-18	2004-08	2009-13	2014-18
Health Science & Pharma	205	292	249	48,072	1,08,314	60,437
Biology, Botany & Zoology	152	177	144	44,971	55,677	27,306
Agriculture, Veterinary Science & Forestry	126	126	113	50,382	47,817	16,404
Physics & Chemistry	67	72	44	23,320	33,674	15,486
Other Science and Technology	48	54	36	12,374	17,370	10,248
Social Sciences	133	144	124	15,719	19,633	8,665
Engineering & Computer Science	78	105	61	8,235	21,243	7,246
Energy & Environment	49	48	41	14,611	16,575	6,789
Arts and Humanities	47	57	46	5,719	7,965	3,649
Business & Management	47	67	50	3,862	6,966	3,480
Mathematics & Statistics	53	56	47	8,008	9,436	3,235
Earth Science & Astronomy	39	36	29	5,981	5,725	2,534
Others	9	9	8	1,487	1,938	764
<b>Total</b>	<b>2,185</b>	<b>2,564</b>	<b>2,042</b>	<b>4,97,182</b>	<b>7,16,666</b>	<b>3,37,653</b>

Data Source: Authors' compilation using Indian Citation Index

Note: Number of journals across the years are cumulative figures.

Even at an institution-level, the performance of research councils like the UGC, AICTE, etc. and individual HEIs has been dismal. Table 17 shows the publication performance of institutions for the years 2004-19, as reported by each institution. This data has been prepared using one of the few sources available for such information, the Indian Citation Index. Limited availability of such data demonstrates the need to maintain this information across all fields. Regulatory bodies in different areas should build the capacity to collect, tabulate, analyse and disseminate data on research and publications. For instance, the ICMR can gather similar statistics for all medical institutions, the AICTE should maintain such data for all engineering and technical HEIs, etc.

India's contribution to the pool of knowledge through research in different fields has been sub-optimal. The poor quality of its research output can be attributed to the presence of predatory journals, inadequate peer reviews and ineffective plagiarism policy.

### a. Predatory journals

'Predatory' journals are fake and low-quality journals that lack a transparent editorial board and charge authors with article processing fees. They tend to accept submissions quickly with little peer review, publish hoax papers, ask for money to publish and appoint fake scholars to the editorial board.<sup>265</sup> The lack of culture around research in India and little regard for scientific concerns makes publishing in predatory journals attractive to young and inexperienced researchers. Studies show that publishing in predatory/fake journals is linked to the academic culture and sociocultural environment in universities in developing countries. Most fake journals (62% or 456 journals) are located in India, followed by Nigeria and Turkey,<sup>266</sup> China, in contrast, has one predatory journal.

In recent times, several research frauds were uncovered which highlighted the need to raise awareness about well-recognised, high-quality and peer-reviewed journals.

**Table 17: Research publications, for select institutions (2004-2019)**

	Journals	Papers/Articles	Citation	Cited Articles
<b>Organisation-level</b>				
University Grants Commission (UGC)	22	27	12	5
Indian Council of Agricultural Research (ICAR)	157	790	668	264
All India Council for Technical Education (AICTE)	26	44	28	10
Indian Council of Social Science Research (ICSSR)	39	67	40	13
Indian Council of Medical Research (ICMR)	98	388	1,407	199
National Council of Applied Economic Research (NCAER)	30	88	58	26
<b>HEI-level</b>				
All India Institute of Medical Sciences-New Delhi	262	6,545	6,903	2,230
Indian Institute of Management- Ahmedabad	79	334	240	95
Indian Institute of Management -Bengaluru	48	142	62	36
Indian School of Business	24	43	24	15
Institute of Rural Management Anand	43	91	66	27
Indian Institute of Technology- Delhi	282	1,676	1,613	546
Indian Institute of Technology- Kharagpur	330	1,851	1,053	454
Indian Institute of Technology- Roorkee	98	1,703	1,407	199

Data Source: Authors' compilation using Indian Citation Index's Institution Analyser

Note: Figures as reported by each institution to Indian Citation Index.

<sup>265</sup> Xia, J., Harmon, J. L., Connolly, K. G., Donnelly, R. M., Anderson, M. R., & Howard, H. A. (2015). Who publishes in "predatory" journals?. *Journal of the Association for Information Science and Technology*, 66(7)

<sup>266</sup> Demir, S. B. (2018). Predatory journals: Who publishes in them and why?. *Journal of Informetrics*, 12(4)

The UGC removed 4,305 journals from its list of approved journals in 2018. Recently, the UGC also issued a 'white list' of 38,653 approved journals (2019) that are recognised as legitimate mediums through which researchers can publish their articles; the methodology followed by UGC to determine the quality of journals was subsequently made public.<sup>267</sup> Although, it is too early to determine the impact of derecognising journals, a standard has certainly been set for researchers. We can hope that the measure has a positive impact on the quality of research produced.

### b. Peer reviews

While publication is a crucial portion of the research process, peer review is an equally important step to evaluate the work. Peer-reviewed or refereed journals have an editorial board of subject experts. All article submissions are reviewed and evaluated before they are accepted for publication. The key purpose of a peer review assessment is to establish a quality control in scholarly publishing.<sup>268</sup> The standard procedure of peer review has proven to improve the presentation of research.<sup>269</sup> Currently, the UGC treats all peer-reviewed journals at par with its list of approved journals, with no distinction to categorically determine quality check.

### c. Plagiarism policy

As we stress the need for knowledge creation from our universities and researchers, we are looking for original ideas and concepts. India, along with countries from

Latin America, the Middle East and Africa, has a poor record when it comes to academic misconduct and plagiarism.<sup>270</sup> The pressure to publish in India, along with poor understanding of research misconduct and citation in academic work, has resulted in a high number of incidents of plagiarism. As per the UGC's regulation issued in 2018, a Departmental Academic Integrity Panel (DAIP) is constituted within each HEI in India to appropriately deal with cases of plagiarism. DAIP investigates the cases and submits its recommendations to an Institutional Academic Integrity Panel (IAIP), also set up at the institution-level. Even so, at the central and institutional level, the mechanism to detect plagiarism and penalise researchers is not clear. No studies have been conducted to quantify the incidents of plagiarism in India yet, but it would not be wrong to say that research misconduct is on the rise and has to be curtailed to improve quality.

### 4.2.3 Impact of research

Despite an increase in publications, low citation impact as indicated by 'citations per document' in Table 17 implies that the quality of Indian research papers is not at par with that of other countries. The relative impact of citations for India is half (0.51) of that of the world average (1.0); the relative citation impact for China is 0.61, and that for the U.S. is 1.24.<sup>271</sup> As one of the lowest-income countries in the world at the turn of the 21st century, China's rise to becoming a super-power in scientific knowledge in less than two decades is remarkable. India should make efforts to replicate the same.<sup>272</sup>

**Table 17: SCImago Journal & Country Rank (1996 - 2017)**

Country	Rank	Documents	Citations	Citations per document	H-index
US	1	1,10,36,243	26,76,12,868	24.25	2077
China	2	51,33,924	3,92,44,368	7.64	712
India	9	14,72,192	1,26,37,866	8.58	521

Data Source: SCImago, (n.d.). SJR – SCImago Journal & Country Rank [Portal]

Note: A plausible reason for citations per document being low for China is that not all articles published in China are written in English.

<sup>267</sup> University Grants Commission, see list here: <<https://www.ugc.ac.in/journalist/methodology.pdf>>

<sup>268</sup> Rowland, F. (2002). The peer review process. *Learned publishing*, 15(4)

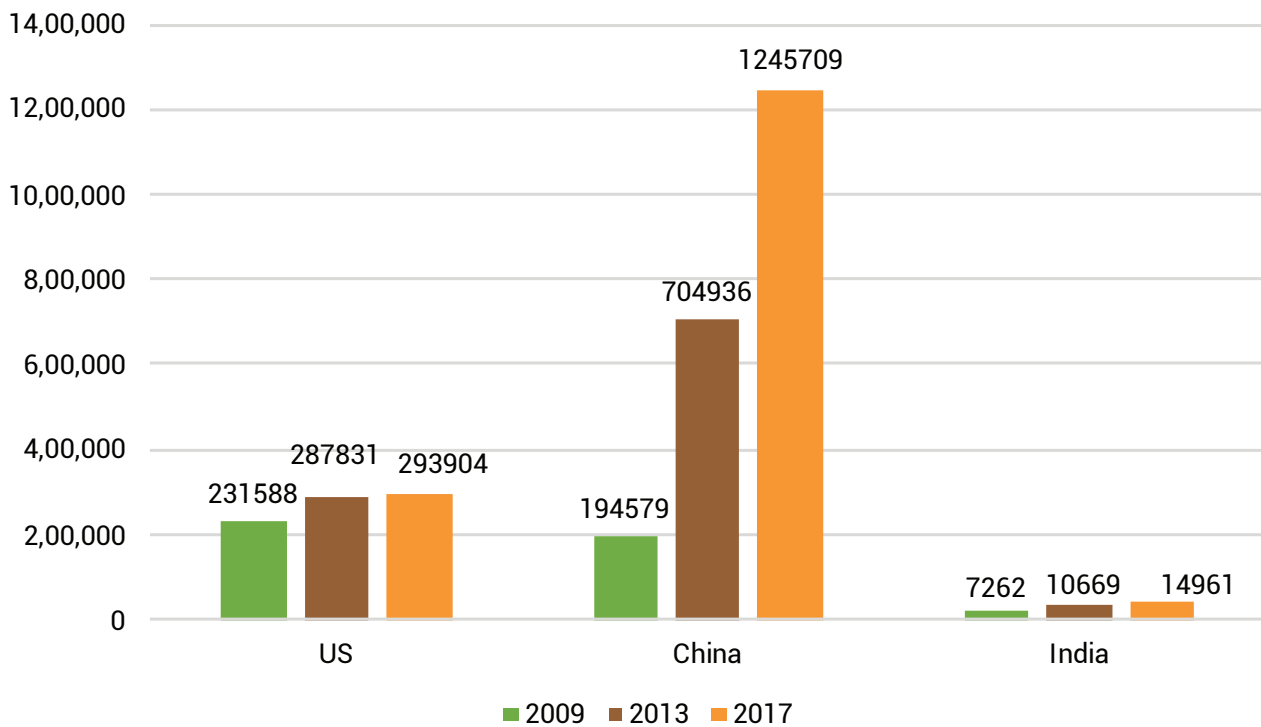
<sup>269</sup> Gitanjali, B. (2001). Peer review--process, perspectives and the path ahead. *Journal of Postgraduate Medicine*, 47(3)

<sup>270</sup> Heitman, E., & Litewka, S. (2011, January). International perspectives on plagiarism and considerations for teaching international trainees. In *Urologic Oncology: Seminars and Original Investigations* (Vol. 29, No. 1). Elsevier

<sup>271</sup> Ernst & Young Pvt Ltd. "Higher Education in India: Twelfth Five Year Plan (2012-2017) and Beyond". FICCI Higher Education Summit 2012

<sup>272</sup> Xie, Q., & Freeman, R. B. (2018). *Bigger Than You Thought: China's Contribution to Scientific Publications* (No. w24829). National Bureau of Economic Research

Figure 20: Number of patent applications filed



Data Source: World Intellectual Property Organization

In the subjects of science and technology, a good indicator to measure the impact of research and innovation is the number of patent applications filed by a country. Figure 20 shows that the number of patent applications filed by Indian residents has more than doubled since 2009. However, the number remains small in comparison to countries such as the U.S. and China. In particular, China has shown impressive growth in the last decade in its patent application filings.

China's capacity building, policy reforms and investment in the higher education sector have fostered world-class standards in Chinese HEIs, while Indian HEIs have been caught unprepared. There is a wide gap between the performance of the two countries, which will only diverge further unless measures are taken to improve research performance of Indian HEIs.

The impact of research conducted in social sciences, arts and humanities is harder to measure and report but has a direct impact on public discourse.<sup>273</sup> So far, only anecdotal evidence exists to present the impact of social science research on policy issues: reference and citations made in policy documents; linkages of researchers via policy

working groups; views and perceptions of researchers.<sup>274</sup> We suggest that the number of references made to academic research work in parliamentary deliberations, policy documents as well as in judgments of law courts should be used as indicators to measure the impact of non-scientific and non-technical research.

#### 4.2.4 Poor incentive structure for research

One of the key reasons behind poor research performance of Indian HEIs has been the lack of rewards provided to researchers. Any cutting-edge research and its dissemination through publication of high-quality journals are designed to help drive the quality of institutional activities. As explained earlier in this chapter, research is of value to HEIs because it helps them gain reputation and foster global collaborations. The prestige of universities, globally, depends on the publications its faculty produces. Therefore, researchers who publish their work are valuable assets to institutions, and the research work has to be monetised by more than merely providing researchers with credits for the same.

<sup>273</sup> Thorat, S., & Verma, S. (2017). *Social Science Research in India: Status, Issues, and Policies*. Oxford University Press

<sup>274</sup> Thorat, S., & Verma, S. (2017). *Social Science Research in India: Status, Issues, and Policies*. Oxford University Press.

While researchers have academic freedom in India, the current system provides few incentives to foster highest standards. Rewarding high performing faculty members is a proven way of building a culture of performance. Research shows that 'producers of ideas and concepts' respond to incentives.<sup>275</sup> This, in turn, can increase their competence and make them more productive, effective, efficient and satisfied in the long run. Today, faculty in India's top universities and institutions, and even Centres of Excellence are struggling with low productivity and low morale. If they are neither incentivised nor encouraged to take ownership nor granted rights over their creations, they are bound to create less or nothing at all.<sup>276</sup>

One reason behind China's remarkable growth in research is the strong incentive structure it put in place by monetising research work. Around 1990, Nanjing University in China became the first institution to provide payment to researchers for getting their research published. The payment amount rose from \$25 (1990) to \$120 (mid-1990) and was as high as \$165,000 in 2016.<sup>277</sup> 'Cash-per-publication' has become common in China with academics being awarded over \$100,000 per paper published in "top Western journals" like *Lancet* and *Nature*, which is 20 times the annual salary of an average academic.<sup>278, 279</sup>

Similarly, Stellenbosch University in South Africa rewarded productive researchers with incentives to boost publication rates. In 2011, the university announced awards worth \$5,000 to 39 academics who contributed to accredited publications. Matching this, the government too announced an additional award of the same amount to drive up publication. Between 2000 and 2010, South Africa more than doubled the number of its paper publications. Their research incentive system is believed to be one of the key drivers of this increase. The incentive scheme saw an increase in the percentage of international papers published, from 52% in 2008 to 66% in 2012.<sup>280</sup>

By incentivising research in countries like China and South Africa, publications are seen as critical

contributions to extending the HEI's international reputation as an excellent research institution, and can also provide a fair share of revenue to the HEIs. Countries like the U.S., Canada, Germany and Spain provide permanent guarantee of employment or—'tenure'—to faculty members who pursue high-quality research and demonstrate a strong publication record.<sup>281</sup> This job security promotes academic freedom such that scholars are free to explore any topics in their research and teaching without the fear of being fired.

Some Indian HEIs allow faculty members to engage in various Consultancy & Research Grant (C&RG) assignments or Sponsored Research Projects.<sup>282</sup> For instance, IIM-A and IIM-B view engaging in consulting assignments as a 'dynamic learning process' for the faculty.<sup>283, 284</sup> These grants strengthen the research profile of an institution, contribute to the institute's revenue and enhance the brand value of the HEI. C&RGs are an opportunity for the faculty to apply their ideas to practical problems. The growth of services and IT sectors requires more R&D activities to be undertaken by the industry, and HEI faculty members can plug this gap. However, stringent rules and guidelines issued by HEIs for such assignments discourage researchers from pursuing these projects.

A monthly allowance provided by the HEI can improve pursuance of research. Institutions like the Indian Statistical Institute and All India Institute of Medical Sciences grant stipends to postgraduate students and research fellows; such reward programmes hold great promise.<sup>285</sup> Publications transfer new knowledge to a global audience and serve the larger cause of dissemination of information and increased application of research findings and results. Globally, providing awards as incentives is not only about money, but also aims at increasing the number of international publications, without compromising quality, and motivating staff to publish regularly. Such reform can only be driven by institutional change.

<sup>275</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>276</sup> Agarwal, P. (2006). *Higher education in India: The need for change* (No. 180). Working paper

<sup>277</sup> Tsinghua University may soon top the world league in science research. (2017) *Economic and Political Weekly*

<sup>278</sup> Study International Staff. (2018, November 22). China is set to beat the US for top STEM research. Here's why.

<sup>279</sup> Paid to publish—the Chinese cash cow. (2018, March 21)

<sup>280</sup> Tongai, I. *Incentives for Researchers Drive Up Publication Output*. University World News. (2013, July 13)

<sup>281</sup> Franzoni C., Scellatom G. and Stephan P. (2011). Changing Incentives to Publish. *Science Policy. American Association for the Advancement of Science*

<sup>282</sup> No comprehensive list of HEIs that allow their academic staff to undertake sponsored C&RGs is available.

<sup>283</sup> Consulting at IIM-A, see <<https://www.iima.ac.in/web/iima/consulting>>

<sup>284</sup> Consulting at IIM-B, see <<https://www.iimb.ac.in/consulting>>

<sup>285</sup> Indian Statistical Institute, Prospectus at <<https://www.isical.ac.in/~admission/Documents/IsiAdmission2019/Isi-Prospectus-2019.pdf>> (2019)

## 4.2.5 Recommendations

### a. Incentivise research output for researchers and HEIs

We have discussed the need to build an ecosystem that nurtures the interest of faculty members and researchers and rewards them monetarily for publishing work. Limiting the teaching hours of faculty and freeing them of tedious administrative tasks will allow substantial time to engage in research. The process to procure funding for research, for HEIs and researchers, should be purely meritocratic. As stated above, the parameters to determine the quality of research output, depending on the area of research, can be the number of research papers published in top journals globally, impact of citations, h-score<sup>286</sup>, and number of patent applications filed and granted. This will encourage institutions to create a conducive environment for research and innovation, and also attract high-quality faculty members to HEIs. India can learn from the successful experiences of countries like China and South Africa to incentivise researchers.

### b. Promote research collaborations, nationally and internationally

The government introduced the Global Initiative of Academic Networks (GIAN) in 2014 to increase the number of reputed international academics, entrepreneurs and industry experts in Indian academic institutions. The initiative has successfully tapped into the talent pool of world-renowned faculty visiting Indian campuses, but this has not translated into research collaborations between Indian and foreign institutions. Indian HEIs need to follow a "mentor model" to inculcate a productive environment for quality academic research. Promoting research-focused collaborations between top-tier international institutions and Indian HEIs will expose universities and academics to global standards of scholarship, and enhance the existing research infrastructure. Increased brand equity of the institutions will, in turn, attract motivated and high-quality faculty that can further contribute to the global knowledge pool. Within India, top-ranking institutions like the IITs, IIMs, AIIMs, ISB and IISc should follow suit to provide research assistance to medium and low-performing HEIs.

### c. Mandate peer-reviews and put in place strict academic integrity policy

It is imperative that as publication output increases, the quality of research is not compromised; there should be no trade-off. We have to nurture a culture of quality, especially among young and aspiring researchers. Peer-reviewed papers and journals grant more credibility to the work, and therefore, have greater chance to create impact. Like publications, peer reviews too should be incentivised. Further, strong anti-plagiarism policies, consistent across all HEIs, should be put in place to discourage research misconduct. Courses on research ethics should be made mandatory at all institutions, irrespective of the degree, to increase awareness among young researchers. Focus on quality should be the priority in order to compete with global leaders like the U.S. and China.

### d. Research councils to take ownership of publishing journals

Research councils should take on the responsibility of delivering high-quality research outputs in their respective subject areas. Bodies like AICTE, ICSSR, CSIR should have their own journals. The impact factor for these should also be regularly updated. Further, research councils should maintain a database of article and journal publications and citations in their respective fields. With research councils playing a greater role in publishing and recognising journals, the issue of researchers falling into the trap of predatory or fake journals can be avoided.

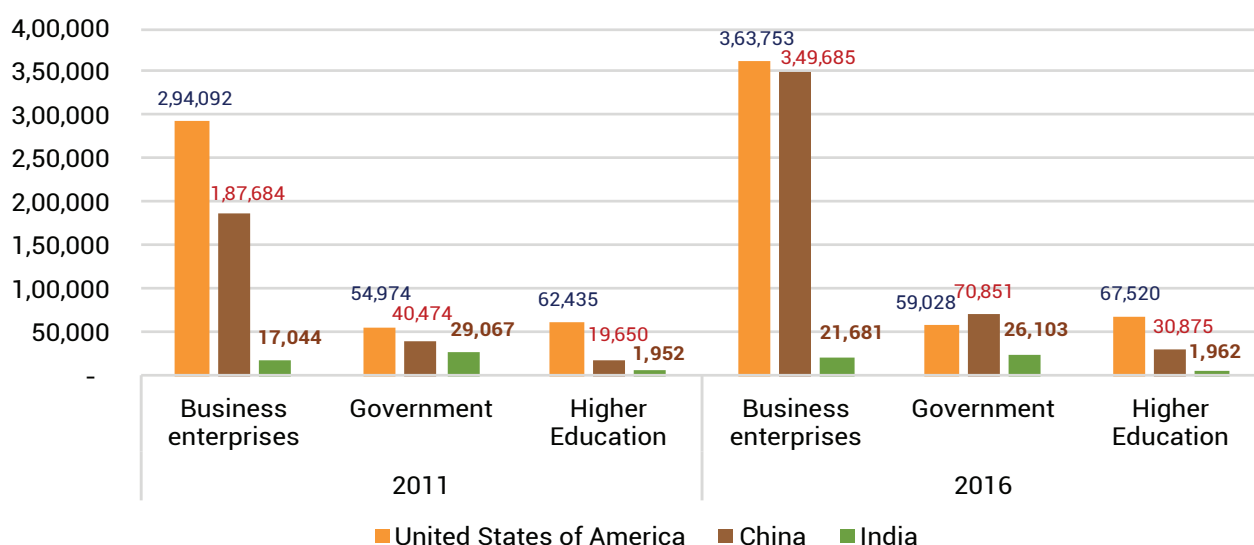
## 4.3 Funding

### 4.3.1 Insufficient funding leading to limited research output

The challenge of low research output can be traced to its funding. Figure 21 shows the expenditure on R&D, broken down by source of funds, for the U.S., China and India in 2011 and 2016. During this time, while research has primarily been driven by business enterprises in the U.S., and China, the government has played a key role in funding R&D in India. However, the Indian government's expenditure on R&D remains small when compared to the U.S. and China. An even smaller share of expenditure is spent through HEIs in India.

<sup>286</sup> Hirsch index score, or h5-index score is calculated for a journal suggesting that during the past five years, the journal published at least h articles that were cited at least h times. For more, see <<https://scholar.google.com/intl/en/scholar/metrics.html#metrics>>

Figure 21: Source of funds spent on R&D (in Thousand Current PPP \$)



Data Source: Adapted from UNESCO Institute for Statistics (UIS), 2016

Note: For India, the latest data available is for 2015, not 2016. The figure excludes expenditure of 'Private Non-Profit' entities.

Not only is government funding for research inadequate, but it is also more skewed towards central universities. As per the UGC's Annual Report 2017-2018, 58.75% of the grants (including research grants) were released to central universities and 18.05% to colleges of central universities. These institutions together accounted for only 15.8% of the PhD students.<sup>287</sup> Similarly, 6.15% of the grants were released to state universities and colleges of state universities (4.9% and 1.25% respectively), and 4.11% to institutions deemed-to-be universities. The share of PhD students was 34.3% in state public universities, and 21.6% each in Institutes of National Importance and deemed universities-private, as per AISHE 2018-19.<sup>288</sup>

Research activities in the U.S. are primarily funded by the corporate sector, private foundations and individual donors. In addition, the constitution of federal-funded bodies like the National Academies of Science, Engineering and Medicine (NASEM) and National Science Foundation (NSF) allowed experts to address crucial research questions of national importance. China has heavily invested in improving its best universities. Since 1995, the Chinese government has spent billions of dollars to turn China's top-ranking institutions into internationally competitive research universities.<sup>289</sup> A series of reforms

with milestones in 2020, 2030 and 2050 were initiated to allow universities to meet the needs and requirements of the 21<sup>st</sup> century. The growth of China's higher education sector shows that money is a critical input. Funding is the key driver that has motivated universities to produce top-class research, as presented in Figure 21.

In 2018 the Indian government granted 'Institution of Eminence' status to six universities to give special attention to research and teaching, and achieve world class status; the provision was extended to 14 other institutions in August 2019.<sup>290</sup> The policy is believed to be an adaptation of China's Double First Class University Plan. It will be critical for the government to learn from China and invest in these institutions in a planned and phased manner to achieve the ultimate objective of fostering world-class teaching and research institutions. Towards this, the DNEP19 proposes setting up a National Research Foundation (NRF) to develop a national vision for enhancing research productivity and streamlining research funding in the education system while also encouraging inter-disciplinary research in social sciences, science and technology, arts, languages, etc. The NRF would subsume numerous existing research initiatives like IMPRINT, IMPRESS, SPARC and STARS.<sup>291</sup>

<sup>287</sup> AISHE Report 2017-18

<sup>288</sup> UGC Annual Report, 2017-18

<sup>289</sup> Altbach, P. (2005). India: A world-class country without world-class higher education. *International Educator*, 14(6)

<sup>290</sup> (2019, August 3). UGC names 14 more names for Institute of Eminence tag. *The Indian Express*

<sup>291</sup> IMPRINT-Impacting Research Innovation and Technology- for Tech Research; IMPRESS-Impactful Policy Research in Social Science- for social sciences research; SPARC-Scheme for Promotion of Academic and Research Collaboration- Joint research with foreign universities; STARS-research in fundamental science.

### 4.3.2 Inadequate industry linkages and role of corporates

The connection between India's HEIs and research centres and industry is tenuous at best.<sup>292</sup> While the onus lies on the government to drive fundamental research, all applied research should be primarily driven and used by the industry. Contrary to this, the expenditure from industry towards research in India is insufficient. For instance, the ICMR's share of expenditure on research reduced from 16.95% in 2012-13 to 12.46% in 2016-17.<sup>293</sup> Research conducted by university researchers for industry is the primary channel through which knowledge and technology are transferred from academic to applied settings.

In most industrialised countries, there is a strong link between university and industry to facilitate the exchange of technology and ideas. In particular, university research centres are the most attractive external sources of technology R&D for the industry.<sup>294</sup> Further, the role of government is critical for a successful relationship between research centres and industry. Industry funding to support university researchers has considerably increased in most OECD countries as firms are seeking direct access to scholars.<sup>295</sup> In the United Kingdom, university-industry linkages have equipped researchers to "to integrate the worlds of scientific research and application".<sup>296</sup> In Singapore, the government has played a key role in fostering a successful relationship between research centres in academic institutions and industry (Lee & Win, 2004).

The Advanced Manufacturing Research Centre (AMRC) at the University of Sheffield is a classic example of successful academia-industry partnership funded by the state's Industry Catapult Program. AMRC was founded in 2001 as a network of world-leading research and

innovation centres working with renowned advanced manufacturing companies.<sup>297</sup> It employs more than 500 highly qualified researchers and engineers conducting research of practical use to over 100 industrial partners. A few Indian HEIs have followed suit: for instance, the Indian School of Business has about 10 research centres and institutes to connect industry and academia to advance education, research and outreach (Munjal Institute for Global Manufacturing, Max Institute of Healthcare Management and Punj Lloyd Institute of Infrastructure Management, to name a few); IIT Delhi has collaborations with industry partners in various areas of science and technology (including DAILAB<sup>298</sup>, Eklavya and the Nanoscale Research Facility). Such partnerships should be encouraged and incentivised by the government to provide sustainable solutions.

Another avenue of financial support for research in India has been through Cooperative Research Associations. These are thematic institutions, primarily set up to undertake scientific R&D in a specific industry domain. Table 19 lists expenditure on R&D by select Cooperative Research Associations in India in various fields. These organisations provide a platform for collaborative engagement between academic research and the cooperative world, hence maximising the benefits of research through an enhanced process of utilisation, commercialisation and technology transfer.<sup>299</sup> They have a strong focus on education and training. These agencies are recognised by the central government's line ministries to carry out research and testing activities, and in some cases, are also supported by the ministry through funds and grants. Cooperative Research Associations work closely with national and international agencies, academicians and researchers, and also have a provision for graduates and postgraduate students to pursue research work to fulfil their academic purpose.

<sup>292</sup> Gupta, D., & Gupta, N. (2012). Higher education in India: structure, statistics and challenges. *Journal of education and Practice*, 3(2)

<sup>293</sup> ICMR's Annual Reports, 2012-13 and 2016-17

<sup>294</sup> Lee, J., & Win, H. N. (2004). Technology transfer between university research centers and industry in Singapore. *Technovation*, 24(5),

<sup>295</sup> Hottenrott, H., & Thorwarth, S. (2011). Industry funding of university research and scientific productivity. *Kyklos*, 64(4)

<sup>296</sup> D'Este, P., & Patel, P. (2007). University-industry linkages in the UK: What are the factors underlying the variety of interactions with industry? *Research policy*, 36(9)

<sup>297</sup> The University of Sheffield Advanced Manufacturing Research Centre, see <<https://www.amrc.co.uk/pages/about>>

<sup>298</sup> DAILAB- DBT-AIST International Laboratory for Advanced Biomedicine at IIT Delhi

<sup>299</sup> International Co-operative Association



**Table 19: Expenditure on R&D by select Cooperative Research Associations (in Rs. Crore)**

Name	2005-06	2010-11	2014-15
The Automotive Research Association of India	63.35	67.14	115.85
Tea Research Association	9.04	47.12	55.94
Electrical Research & Development Association	7.5	42.65	50.17
Amul Research and Development Association	*	9.58	20.25
The South India Textiles Research Association	3.68	13.39	17.81
Ahmedabad Textile Industry Research Association	4.11	5.93	13.3
The Synthetic & Art Silk Mills Research Association	3.35	10.81	10.47
Indian Rubber Manufacturing Research Association	1.02	7.88	8.96
Wool Research Association	0.88	1.61	5.48
Indian Jute Industries Research Association	3.48	3.08	5.05
Man Made Textiles Research Association	1.3	2.44	4.61
The Bombay Textile Research Association	2.74	2.76	3.63
Northern India Textile Research Association	4.31	2.22	2.4
Petroleum Conservation Research Association	*	0.39	1.54
The SIMA Cotton Development and Research Association	*	0.16	0.14
<b>Total</b>	<b>104.75</b>	<b>217.16</b>	<b>315.60</b>

Data Source: Department of Science and Technology

\*Data not available

The possibilities for corporate funding devoted to R&D increased in recent years when India adopted new CSR rules in 2014. The provision mandates qualifying companies to contribute at least 2% of their average net profits from the preceding three years on social development-related activities, also prescribed under the Companies Act 2013.<sup>300</sup> The rules allow support extended to 'research' in areas such as poverty, education, health, environmental sustainability, gender equality, skill development, among others to be recognised as a CSR activity. However, India is yet to leverage CSR funding enough to support research and innovation. Since there are no clear and formal rules to categorise money spent on research as CSR, there is no data available on CSR funds devoted to research activity.

Further, the emergence of private independent research institutions conducting policy relevant high-quality empirical research and providing recommendations is promising. This research is aimed at the government and seeks to impact policy. Brookings India's model to support research work through a strong network of founders has made it a sustainable institution. However, examples of such organisations running successfully are

few. Research institutions lack a stable revenue model, unlike teaching institutions. Philanthropic support through CSR funds should therefore be encouraged to bring India at par with countries like the U.S. and China, where private philanthropy has long supported scholarly research.<sup>301</sup>

### 4.3.3 Recommendations

#### a. Encourage corporate endowments and industry linkages

There are limited sustainable market solutions to support research.<sup>302</sup> In India, thus far, the government has been the biggest supporter of research, unlike countries such as the U.S. and China, where philanthropists and business enterprises are the biggest funders. The government should make efforts to make it easier for firms to facilitate and be actively involved in research. Corporate endowments can help build sound infrastructure to carry out research activities and set up R&D facilities on higher education campuses. HEIs should be allowed to monetise research by easing norms for consultancy and research projects.

<sup>300</sup> Thorat, S., & Verma, S. (2017). *Social Science Research in India: Status, Issues, and Policies*. Oxford University Press.

<sup>301</sup> Ravi, S. (2016, January 27). Support research as Corporate Social Responsibility in India. The Times of India.

<sup>302</sup> Ravi, S. (2016, January 27). Support research as Corporate Social Responsibility in India. The Times of India.

Locally, linkages between the NRF, national research centres, research laboratories, cooperative research institutions and Centres of Excellence in top universities should be established to promote collaborative applied research and create relevant knowledge for the industry. This can help build research-focused institutions that have the skills and expertise to undertake research in multiple disciplines.

### Formalise CSR expenditure on research

The potential for CSR monies to support R&D activities in HEIs as well as research institutions has not been fully realised. CSR rules under the Companies Act should be amended to categorically include 'research' as one of the activities listed under the guidelines. The rules should formalise that money spent on research, as a separate heading, can be accounted for CSR expenditure. The data on expenditure on research through CSR should then be reported to the Ministry of Corporate Affairs, just as it is done for other activities.

## 4.4 Summary of recommendations

Recommendations	Objective
Incentivise research output	Increase publication output
Promote research collaborations	Apprise Indian scholars of global standards of conducting research and expose them to improved infrastructure
Mandate peer-reviewed publications and create stringent academic integrity policy	Enhance quality of research output
Start journals run by research councils	Greater opportunity to publish in legitimate and recognised high-quality journals
Encourage corporate endowments and industry linkages	Make fundamental research industry-oriented and sustainable
Formalise CSR expenditure on research as a separately listed activity	Make available resources for funding research and provide data on expenditure

## Regulatory System

Having addressed significant challenges that the Indian higher education sector faces, the final major impediment towards a well-structured system are the numerous regulatory roadblocks. The Indian higher education system is over-regulated. This has inhibited innovation and creativity, and led to issues with accreditation of HEIs, their autonomy and inadequate funding. Given the rapid expansion of the higher education sector in the last two decades, and the emergence of multiple agencies and providers, it is imperative that the regulatory regime is revisited and reformed.

Over the last decade, several proposals have been made to reform the regulatory structure, with the fundamental aim of revamping the University Grants Commission (UGC). These include the Yash Pal Committee that proposed the establishment of the National Commission for Higher Education and Research (NCHER), the Draft National Education Policy 2016 (DNEP16) put out by the Ministry of Human Resource Development, the Repeal of the UGC Act or the Draft Higher Education Commission of India (HECI) Bill, and the National Higher Education Regulatory Authority of India (NHERA) as envisioned in the Draft National Education Policy 2019 (DNEP19). These recommendations are proof that the need to reform the regulatory structure has been realised and there is intention to transform the sector as well. However, these recommendations have not been acted on and reforms have not been implemented.

This chapter is divided into four sections. Section 1 gives a complete blueprint of the current regulatory regime, outlining the roles and responsibilities of various bodies. In Section 2, we describe the three most basic and critical regulatory challenges that HEIs face – accreditation, autonomy and funding. Section 3 provides a quick review of recommendations made in the last decade to ease regulations in the higher education sector.

## 5.1 Blueprint of the regulatory structure of Indian higher education

The Radhakrishnan Committee (1948) emphasised the need to create a legislative framework for universities to operate under a strong governing body. Its recommendations led to the establishment of bodies such as the UGC and AICTE.<sup>303</sup> At present, 14 regulatory bodies operate in the higher education sector in India across general education, technical education and professional education. The higher education sector needs to be regulated to ensure planned and coordinated development of HEIs, provision of quality education and equity and social justice, as well as to prevent unfair practices.<sup>304</sup> However, the sector has been over-regulated since independence, leading to several inefficiencies.

There is a long-standing debate about whether the existing regulations suffice or does the system need more regulations for effective implementations of rules and norms.<sup>305</sup>

Recent committees and draft policy proposals all suggest reducing the complexity in the structure of higher education. The common theme in their recommendations is to comprehensively restructure governance and funding at the central level.<sup>306</sup> The idea of a single apex regulator for higher education, with coordination councils in all knowledge areas, has been in discussion for more than two decades now.<sup>307</sup> However, a complex regulatory system with multiple levels of governance has resulted in several challenges in the sector.

### 5.1.1 The current regulatory regime

When the government appointed the UGC in 1945 to give grants to central universities, the move was resisted by forces against centralisation. In 1947, the provision was expanded to bring all other universities under the purview of the UGC.<sup>308</sup> The UGC Act (1956) formally made provision for governmental financial support to all universities. By 1973, the UGC evolved in its functions

and was assigned the additional tasks of expansion, diversification, streamlining and coordination of and among HEIs.<sup>309</sup>

The UGC remains the nodal regulatory body for higher education. It has two major responsibilities: (i) to coordinate, determine and maintain standards of HEIs, and (ii) to provide funds to HEIs. It also advises central and state governments on the measures needed to improve university education. With the rapidly evolving higher education landscape in India, the UGC became the central policy-making body in India. However, one of the biggest failures of the commission has been its failure to implement policies, norms and standards.

In addition to the UGC, 14 professional councils are responsible for recognition of courses, promotion of professional services and providing grants to HEIs.<sup>310</sup> These councils have oversight on education in a particular discipline and determine standards in that field in coordination with the UGC. A list of all professional councils is given in Figure 22.

The AICTE a national-level body set up in 1945, is the advisory body for all matters relating to technical education but lacks any statutory powers. The AICTE Act was subsequently enacted in 1987 to ensure: (i) proper planning and coordinated development of the technical education system; (ii) promotion of qualitative improvement of technical education in relation to planned quantitative growth; and (iii) regulation and proper maintenance of norms and standards.<sup>311</sup>

The Medical Council of India (MCI) was constituted to establish uniform and high standards in Indian medical education and monitor medical practice throughout the country. It also oversees the recognition of medical qualifications, accredits medical universities and colleges, and grants registration to medical practitioners. The District Education Council (DEC) is the apex body for Open Distance Learning in India. It is responsible for promotion and coordination of open universities, and determining and maintaining their standards. The Indian Council of Agricultural Research (ICAR) is an

<sup>303</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

<sup>304</sup> Ayyar, R.V.V (2013): "Unfashionable Thoughts: An Ex-policymaker's Perspective on Regulation in Education", Paper presented at the Workshop on Educational Policy, Hyderabad: Tata Institute of Social Sciences

<sup>305</sup> Varghese, N.V. and Garima Malik (2015): "Institutional Autonomy in Higher Education in India", *University News*, 53(3)

<sup>306</sup> Gupta, S., & Chattarji, S. (2019). Protests, repression, restructuring: contemplating Indian higher education in 2018. *Postcolonial Studies*, 22(1)

<sup>307</sup> Yash Pal Committee (2009): *Report of the Committee to Advise on Renovation and Rejuvenation of Higher Education*

<sup>308</sup> Abrol, D. (2010). Governance of Indian Higher Education: An Alternate Proposal. *Social Scientist*, 38(9/12)

<sup>309</sup> Malik, Garima (2017), *Governance and Management of Higher Education Institutions in India*, CPRHE Research Paper Series No. 5

<sup>310</sup> See <<https://www.ugc.ac.in/page/Professional-Councils.aspx#she>>, UGC

<sup>311</sup> See <<https://www.aicte-india.org/about-us/history>>, AICTE

autonomous body under the Department of Agricultural Research and Education, and coordinates, guides and manages research and education in agriculture. The ICAR has played a pioneering role in developments in agriculture, such as ushering in the Green Revolution, through its contribution to research and education.

In 1988, the UGC issued guidelines to set up State Councils of Higher Education (SCHE). Respective state governments have established SCHEs to prepare, plan and coordinate academic, advisory and administrative functions in the higher education sector.<sup>312</sup> SCHEs were constituted to consolidate the efforts and investments of HEIs in each state.<sup>313</sup> With state-level planning and coordination, SCHEs were expected to play an active role in strengthening of non-viable colleges. The biggest drawback observed in the functioning of SCHEs is that they are led by bureaucrats, and not educationists.<sup>314</sup> For the higher education sector to thrive, SCHEs should be viewed as the catalyst for efficient and effective coordination between the central government and HEIs, while keeping their autonomy intact. This can be done by giving greater power to SCHEs to develop higher education in their particular state. For instance, the wide mandate provided to the Andhra Pradesh State Council for Higher Education has enabled it to grant permission to establish and run private unaided degree colleges, conduct tests for admission in professional courses as well as promote sports and other extracurricular activities in academic institutions. The power granted to

individual SCHEs has been known to vary depending on the leader of the organisation in each state.<sup>315</sup>

## 5.2 Key regulatory issues

### 5.2.1 Assessment and accreditation

The task of performance evaluation, assessment and accreditation of HEIs has been assigned to National Assessment and Accreditation Council (NAAC). The council functions through a General Council and Executive Committee, and has advisory as well as consultative committees to guide practices. Statutory bodies are also set up within NAAC to steer its policies.<sup>316</sup> Chapter 2 of the report presents details on the number of HEIs accredited by NAAC and NBA thus far; NAAC alone has accredited 341 universities and 7695 colleges (November 2018).<sup>317</sup>

NAAC conducts assessment of HEIs in three stages: (i) Self-study report (SSR) with metrics for quantifiable facts and figures and descriptive responses, (ii) student satisfaction survey, and (iii) peer team report. The assessment is based on curricular aspects; teacher-learning and evaluation; research, innovations and extension; infrastructure and learning resources; student support and progression; governance, leadership and management; and institutional values and best practices.<sup>318</sup>

Figure 22: List of Professional Councils

• All India Council of Technical Education (AICTE)	• Bar Council of India (BCI)
• Medical Council of India (MCI)	• Central Council of Homeopathy (CCH)
• Indian Council for Agricultural Research (ICAR)	• Central Council for Indian Medicine (CCIM)
• National Council for Teacher Education (NCTE)	• Council of Architecture
• Dental Council of India (DCI)	• Distance Education Council (DEC)
• Pharmacy Council of India (PCI)	• Rehabilitation Council
• Indian Nursing Council (INC)	• National Council for Rural Institutes (NCRI)

Source: UGC

<sup>312</sup> Centre for Policy Research in Higher Education (CPRHE) and National Institute of Educational Planning and Administration. A Report of the Consultative Meeting on State Higher Education Council (SHEC). February 2018.

<sup>313</sup> See <<https://www.ugc.ac.in/page/Professional-Councils.aspx#she>>, UGC

<sup>314</sup> Anandakrishnan, M., *State Councils of higher education: Expectations and Experiences* in N V Varghese and Garima Malik (eds), India Higher Education Report 2015

<sup>315</sup> Anandakrishnan, M., *State Councils of higher education: Expectations and Experiences* in N V Varghese and Garima Malik (eds), India Higher Education Report 2015

<sup>316</sup> National Assessment and Accreditation Council, Annual Brochure 2018

<sup>317</sup> National Assessment and Accreditation Council, Annual Brochure 2018

<sup>318</sup> National Assessment and Accreditation Council, Annual Brochure 2018

The assessment process is a combination of the SSR and peer review report. The SSR determines the functioning of the HEIs with reference to the criteria mentioned above. Peers validate the SSR through criterion-wise scores and a detailed assessment report. The criterion score is used to arrive at institutional Cumulative Grade Point Average. The HEI is assigned a grade by NAAC depending on its CGPA. The final result of assessment and accreditation exercise is a combination of qualitative and quantitative metrics.<sup>319</sup>

Any institution undergoing re-assessment follows the same process and methodology as that of assessment and accreditation. If an HEI fails to get the accreditation, it has to wait at least a year before undergoing re-assessment. As a review mechanism, the HEI is obligated to respond to recommendations made by the peer team in the previous assessment and accreditation report, and specify the quality improvements it has gone through.

Accreditation is of great value to institutions. One of its many benefits is that it provides objective data as evidence to facilitate performance funding for HEIs. It provides reliable information on the quality of the institution for stakeholders in the public as well as private (funders and employers) sector to make informed choices. But thus far, the actual value of this benefit has not been realised in the Indian higher education system. The prospect of assessment and accreditation also acts as an informed review process through which the HEI itself stands to benefit. It can internally identify areas of planning, innovations and resource allocation based on weaknesses and opportunities observed in the assessment process.

## 5.2.2 Autonomy

Chapter 2 of this report gives a detailed explanation of what autonomy means, the effect it has on HEIs, and the process of granting autonomy. It also recommends providing autonomy to a greater number of HEIs and easing the process. Under the current regulatory framework, there is an urgent need to address the operational and financial autonomy of HEIs. At present,

processes and decisions that should ideally be under the purview of HEIs require permission from the UGC. These include starting an academic programme through Open and Distance Learning, opening a new department or school, or fostering collaboration with a foreign university. The restrictions create an environment of dependence and centralised decision making. Restricting the independence of HEIs limits the intellectual potential of institutions and independent thinking of faculty as well. As a result, limited autonomy impacts the quality of institutions.

Some recent measures have been taken to promote greater autonomy among HEIs. The Indian Institutes of Management Bill 2017, announced 20 IIMs as Institutions of National Importance and conferred on them the power to grant degrees.<sup>320</sup> The act also reduced government representation on IIM Boards and allowed the Board to appoint the Director. Similarly, in 2018, the UGC granted graded autonomy to 60 HEIs with the aim of promoting and institutionalising excellence in higher education.<sup>321 322</sup> More recently, the government's decision to declare 20 HEIs as Institutions of Eminence (IoE) has been welcomed as these institutions will have greater autonomy in conducting operations. These include relaxed norms in admitting foreign students, fixing fees and recruiting foreign faculty.<sup>323</sup>

## 5.2.3 Funding

In the current set-up, the UGC is the statutory body responsible for giving grants to centrally-funded HEIs based on the principles of equitability and need. As per the conventional funding mechanism, these grants are seen as expenditure on a basic public good, and are not recovered.<sup>324</sup>

Chapter 3 of this report provides data and information on government expenditure on university and technical education. We also find that state bodies have little to no control over setting norms regarding financial regulations. Moreover, an incremental model of funding followed by HEIs has diluted standards of pedagogy and research in the ecosystem. The lack of transparency in

<sup>319</sup> National Assessment and Accreditation Council, Annual Brochure 2018

<sup>320</sup> *PRS Legislative Research*. The Indian Institutes of Management Bill, 2017a

<sup>321</sup> "In a historic decision, 60 Higher Educational Institutions granted autonomy by UGC : Shri Prakash Javadekar", Press Information Bureau, 20 March 2018, <<http://pib.nic.in/newsite/PrintRelease.aspx?relid=177751>>

<sup>322</sup> "Graded Autonomy to Promote and Institutionalize Excellence in Higher Education ." Press Information Bureau, 23 July 2018, <[pib.nic.in/newsite/PrintRelease.aspx?relid=180895](http://pib.nic.in/newsite/PrintRelease.aspx?relid=180895)>

<sup>323</sup> "Government Declares 6 Educational 'Institutions of Eminence' ; 3 Institutions from Public Sector and 3 from Private Sector Shortlisted ." Press Information Bureau, 9 July 2018, <[pib.nic.in/newsite/PrintRelease.aspx?relid=180478](http://pib.nic.in/newsite/PrintRelease.aspx?relid=180478)>

<sup>324</sup> Gupta, S., & Chattarji, S. (2019). Protests, repression, restructuring: contemplating Indian higher education in 2018. *Postcolonial Studies*, 22(1)

financial regulation of private HEIs and limited funding options has led to private HEIs being entirely funded by student fees, therefore, limiting access to better-reputed HEIs which provide quality education.

Promoting financial autonomy of HEIs will encourage them to seek funding from sources other than the government. Subsequently, an independent external regulator can hold institutions accountable for maintaining standards as well as following rules and norms. This can go a long way in resolving the financial challenges faced by public and private HEIs in the current system.<sup>325</sup> So far, the focus has been on developing and improving the quality of public institutions due to restricted access to central funding.<sup>326</sup>

### 5.3 Review of recent committee recommendations and draft policies

Over the last two decades, several commissions have made recommendations that suggest overhauling the regulatory structure. Draft policies and bills have outlined continuing challenges and potential solutions to ease regulatory norms for HEIs. However, policies and recommendations have not been adopted or implemented. In this section, we review some of the critical recommendations made to restructure the regulatory bodies in the higher education sector.

#### 5.3.1 Yash Pal Committee, 2009

About a decade ago, in 2009, the Ministry of Human Resource Development set up a committee under the chairmanship of Prof. Yash Pal to examine reform of the higher education sector. 'The Committee to Advise on Renovation and Rejuvenation of Higher Education', also referred to as the Yash Pal Committee, recommended structural changes in the ecosystem to transform the idea of a university.<sup>327</sup> It particularly emphasises that any change in the governance structure of centrally-funded institutions, as well as state-funded institutions, should be aimed at achieving more autonomy for HEIs.

The committee's report noted that "a well-designed regulatory structure will also help to promote a high degree of professionalism in managing HEIs" (Yash Pal Committee Report, 2009). In the current landscape, the higher education system is highly over-regulated with multiple agencies having overlapping functions, often leading to inefficiency and corruption.

More so, these regulatory agencies were established based on various Acts; the regulatory provisions and functions for different bodies were created at various points in time under different legislations. However, the nodal responsibility of the higher education system, as assigned to the UGC, is not validated in the provision of other Acts.<sup>328</sup> This has resulted in duplication of efforts, discrepancies arising from overlapping functions, and poor coordination among the statutory bodies and their processes and mechanisms.

The committee suggested a revamp of the overarching regulatory body to set up the National Commission for Higher Education and Research (NCHER); the NCHER would subsume roles and responsibilities of all existing regulatory bodies. The regulatory functions of all Professional Councils<sup>329</sup> would be transferred to the NCHER. The councils would then be responsible for conducting tests to practice the profession and only suggest syllabi to HEIs; the task of designing the curriculum and structuring the coursework would be left to the HEI. The committee believed that pooling the roles and responsibilities of various regulatory bodies (UGC, AICTE, NCTE, DEC, etc.) under the NCHER would insulate it from political and government interference.<sup>330</sup> The report proposed setting up SHECs, at the state level, to coordinate with the NCHER and manage regulations of state universities with minimal interference from the centre. The need for SHECs was emphasised in the National Mission on Higher Education (2013) under the 12<sup>th</sup> Five Year Plan.<sup>331</sup>

The Yash Pal Committee also highlighted the need to increase accreditation capacity by certifying independent accreditation agencies to assess HEIs and determining norms. The proposed NCHER would also determine the process of setting up as well as shutting down HEIs.

<sup>325</sup> Gupta, S., & Chattarji, S. (2019). Protests, repression, restructuring: contemplating Indian higher education in 2018. *Postcolonial Studies*, 22(1)

<sup>326</sup> Ernst & Young Pvt Ltd. "Higher Education in India: Twelfth Five Year Plan (2012-2017) and Beyond". FICCI Higher Education Summit 2012

<sup>327</sup> Central Advisory Board of Education, "Financing of Higher and Technical Education", (2005)

<sup>328</sup> Central Advisory Board of Education, "Financing of Higher and Technical Education", (2005)

<sup>329</sup> 13 Professional Councils existed at the time when the committee was under way

<sup>330</sup> Report of 'The Committee to Advise on Renovation and Rejuvenation of Higher Education', 2009

<sup>331</sup> Centre for Policy Research in Higher Education (CPRHE) and National Institute of Educational Planning and Administration. A Report of the Consultative Meeting on State Higher Education Council (SHEC). February 2018.

### 5.3.2 Draft National Education Policy 2016

The Draft National Education Policy 2016 (DNEP16) observed that the current regulatory regime in the higher education sector looks at input and not outputs.<sup>332</sup> It also highlighted the wide disparity between a handful of 'Centres of Excellence' and the many small, affiliated and badly managed colleges in the country. The draft policy recommended the need for a flexible and nuanced regime that rewards high-performing colleges with greater autonomy while financially supporting and mentoring poorly-performing colleges to improve their quality of education. DNEP16 made it clear that there is certainly a need to create a legal regime for new institutions and reframe the mandate of existing regulatory agencies. It envisioned the establishment of a 'New Higher Education Management Act' to establish standards and guidelines for accreditation agencies as well as for HEIs.

The draft policy recommended making accreditation mandatory for all institutions, as well as requiring all HEIs to undergo periodic assessment and accreditations. At present, though accreditation is a voluntary initiative for HEIs, it is insufficient in the sense that even the best rated Indian institutions perform poorly in global rankings.<sup>333</sup> This shows that the current model of assigning grades to institutions is inadequate and does not acknowledge the specialised attributes of high-quality HEIs. Moreover, the Internal Quality Assurance mechanism is underutilised to gather data and information that could be used to monitor and improve the quality of HEIs. To resolve concerns related to limited accreditation capacity of NAAC and NBA, DNEP16 suggested creating a National Accreditation Agency (NAA) that would be responsible for a Quality Assurance Framework. Based on this well-established framework, accreditation would be outsourced to specialised external agencies. All agencies will require a license from the NAA based on guidelines.

Another key challenge is the management of state-run universities. These institutions are tightly controlled by the government, have minimal autonomy and are constrained administratively since they are also affiliating universities. DNEP16 recommended restricting the number of affiliated colleges a university can have.

It called for splitting institutions that have more than 100 affiliating colleges for effective delivery of higher education.

Fee regulation is yet another significant concern that DNEP16 addressed. Since the demand for higher education in private institutions far exceeds the supply, colleges are believed to exploit students by charging a capitation fee. DNEP16 recognised that while the government keeps the fee low to allow wider access to higher education, to some degree, private institutions should be allowed to charge fees to recoup expenses.

### 5.3.3 Draft Higher Education Commission of India (HECI) Bill, 2018: Repeal of the UGC Act

The draft Higher Education Commission of India Bill was introduced in 2018 to repeal the UGC Act and establish the Higher Education Commission of India (HECI). The proposal made it clear that the UGC is not functioning efficiently and the over-regulation of HEIs is hindering performance.<sup>334</sup> The main departure from the UGC was that HECI would not have the power to provide grants to HEIs, and its mandate was stated to maintain academic standards in higher education by specifying learning outcomes for courses. It would specify the eligibility criteria for appointing Vice Chancellors at HEIs.<sup>335</sup>

As detailed previously in this chapter, HEIs offering professional courses are presently regulated by 14 Professional Councils that conduct qualifying exams and specify standards for professional practice in the field. The HECI Bill, however, brings legal and architecture education under the ambit of HECI. The Bill does not provide any explanation as to why only these two councils have been chosen to be absorbed under HECI, whereas the remaining 12 councils continue to function as is. The roles of The Bar Council of India and Council of Architecture will be limited to specifying standards for professional practice in these two areas.<sup>336</sup>

The Bill also calls to set up an Advisory Council under HECI to advise on coordination between the center and

<sup>332</sup> Ministry of Human Resource Development, "Draft National Education Policy 2016"

<sup>333</sup> Several news articles. For example, see <<https://www.livemint.com/education/news/indian-universities-draw-a-blank-in-the-s-top-300-list-1568224442151.html>>

<sup>334</sup> Bhushan, Sudhanshu. (September 2018). HECI Act 2018 Fails to Address Structural Problems of Higher Education in India. *Economic and Political Weekly-Engage*, Vol. 53

<sup>335</sup> PRS Legislative Research. The Draft Higher Education Commission of India (Repeal of University Grants Commission Act, 1956) Bill, 2018

<sup>336</sup> PRS Legislative Research. The Draft Higher Education Commission of India (Repeal of University Grants Commission Act, 1956) Bill, 2018



states, and determine standards in higher education.<sup>337</sup> The provisions of the Bill apply to all HEIs except to the Institutions of National Importance.<sup>338</sup>

Another crucial difference between HECI and the UGC was that unlike the latter, the proposed HECI would have the power to order closure of HEIs that failed to adhere to minimum standards. One of the UGC's biggest shortcomings was its inability to implement minimum standards among HEIs. The HECI could revoke the permission granted to HEIs to run operations on grounds such as failure to comply with rules and regulations, failure to discharge duties and obligations, and if HEI ceases its functions. In a unprecedented step, HECI would also have the authority to impose penalties on HEIs that are found to violate norms or contravene regulations. Penalties could be imposition of fine, revoking HEI's permission to grant degree, or imprisonment for up to three years.<sup>339</sup> On the one hand, while this acquired power of HECI is important, on the other hand, it also harms the system by giving it excessive power. Perhaps, in future proposals, such authority could reside with the state government.

Currently, degrees can only be awarded by a university, deemed-to-be university or institutions specially empowered by the Parliament; they do not need any approval from the UGC. But, in a significant departure from the UGC's mandate, HECI requires all HEIs to seek its permission to begin academic operations (and for all existing institutions to get permission within three years) or award degrees or diplomas. This way, HECI will be in a position to ensure that the application complies with the specified norms of academic quality.

The HECI is envisioned to promote autonomy of institutions and eliminate interference of a regulatory body in their management. Under the provisions of the new commission, teachers, researchers and students would have the prerogative to determine academic coursework. Minimal interference from the institutional

management or any regulatory body on content and pedagogy will promote academic autonomy and integrity of HEIs. At the same time, the draft bill envisions financial autonomy of HEIs such that institutions themselves determine the utilisation of allocated funds as well as make efforts to generate funding independently, from sources other than governments.<sup>340</sup>

At the same time, it can be argued that the draft Bill does not necessarily grant academic freedom to HEIs. It has been criticised for giving HECI excessive control on academic, administrative and financial matters of HEIs. Unlike the UGC, HECI would have additional powers over HEIs to grants degrees and shut down an HEI. The UGC regulated every aspect of an institution, from its fees to its curriculum, hence failing to preserve autonomy and promote accountability. The draft HECI bill does not clarify how HECI would promote autonomy of HEIs.

One of the biggest critiques of the draft HECI bill is that it does not address which body would play the role of grant disbursal to HEIs. Currently, the UGC has the power to allocate and disburse grants to HEIs. While the bill envisions that HECI would replace the UGC, it does not have any provision for grant disbursal or clarity on how the financial aspect of this restructuring would work.<sup>341</sup> Whether the funding responsibilities of the UGC would rest directly with the MHRD has not been made sufficiently clear either. After the introduction of the Draft HECI Bill, the MHRD indicated that there will be a separate grant disbursal body that will follow a merit-based approach to fund disbursal.<sup>342</sup> Previously, the National Knowledge Commission (2009) had also recommended that an independent regulator should set standards for HEIs, while the UGC would be responsible for disbursing funds.<sup>343</sup> However, no details on the kind of mechanism the MHRD or the grant disbursal body would follow for disbursal of central public funding for higher education have been stated so far.<sup>344</sup>

<sup>337</sup> PRS Legislative Research. The Draft Higher Education Commission of India (Repeal of University Grants Commission Act, 1956) Bill, 2018

<sup>338</sup> As per MHRD: 94 Institutions of National Importance (INIs). See <<https://mhrd.gov.in/institutions-national-importance>>

<sup>339</sup> PRS Legislative Research. The Draft Higher Education Commission of India (Repeal of University Grants Commission Act, 1956) Bill, 2018

<sup>340</sup> Gupta, S., & Chattarji, S. (2019). Protests, repression, restructuring: contemplating Indian higher education in 2018. *Postcolonial Studies*, 22(1)

<sup>341</sup> Gupta, S., & Chattarji, S. (2019). Protests, repression, restructuring: contemplating Indian higher education in 2018. *Postcolonial Studies*, 22(1)

<sup>342</sup> "The Grant Disbursal Function to Universities and Colleges Will Be Located in an Independent Entity Which Works in a Transparent, Merit-Based Approach through an ICT Enabled Platform: Shri Prakash Javadekar ." Press Information Bureau, 23 July 2018, <[pib.nic.in/newsite/PrintRelease.aspx?relid=180882](http://pib.nic.in/newsite/PrintRelease.aspx?relid=180882)>

<sup>343</sup> National Knowledge Commission, Report to the Nation 2006-2009. See <<https://www.aicte-india.org/downloads/nkc.pdf>>

<sup>344</sup> Gupta, S., & Chattarji, S. (2019). Protests, repression, restructuring: contemplating Indian higher education in 2018. *Postcolonial Studies*, 22(1)

Overall, the draft Bill demonstrates the government's intention to develop an ecosystem where HEIs are self-regulated; however, this is a much longer process. With its emphasis on outcome-based education, the proposed Act has "change(d) the discourse on quality without looking at the structural problems of higher education".<sup>345</sup> The move to repeal the UGC and constitute a revamped body with specific and more streamlined functions is proof of the government's desire to focus on reform of the higher education sector.

### 5.3.4 Draft National Education Policy 2019

The Draft National Education Policy 2019 (DNEP19) suggests a complete overhaul of the existing regulatory structure in the higher education sector. Four key reasons have been provided for this. First, the policy acknowledges that, over time, as multiple regulatory bodies have come into being, their mandate and functions have come to overlap, causing inefficiency and discrepancy in implementation. Second, the draft proposal gives special attention to the lack of accreditation capacity that has resulted in a huge backlog of HEIs yet to undergo accreditation. Third, it recognises that India has some of the most stringent requirements for entering the higher education sector. The proposal does away with rigid, rule-based and tedious requirements for entry into the sector as well as with respect to faculty qualifications and implementation of curricula. And finally, DNEP19 suggests that institutional autonomy is "non-negotiable"; it commits to the cause of HEIs having full autonomy with respect to academic, administrative and financial functions.

As mentioned earlier, the UGC has the dual responsibility of determining and maintaining standards for all HEIs and disbursing grants to institutions. The proposed policy categorically separates the functions of regulation, provision of education, funding, accreditation and standard-setting as mandates of independent and empowered bodies. DNEP19 recommends setting up the National Higher Education Regulatory Authority (NHERA) as the common regulatory regime for the entire sector. NHERA will overlook the functioning and operation of individual institutions. Responsibilities of each agency will be clearly delineated within the new framework. Precisely to avoid overlaps in jurisdiction, each body

will be governed and run by an Independent Board consisting of people with expertise in relevant areas.<sup>346</sup> The government's role would be limited to increasing its financial commitment to higher education. As the single regulator, NHERA will focus on system outcomes and empower HEIs in three aspects: good governance, financial stability and transparency, and educational outcomes. DNEP19 makes it clear that each HEI should have educational outcomes as its goals and that the HEI's progress should be tracked against them. While NHERA will not prescribe outcome for any HEI, DNEP19 maintains that the focus of HEIs should shift from inputs, processes, resources and conditions to outcomes.

The NHERA, like the HECI as described earlier, will have the power to shut down HEIs that fail to adhere to regulations. Such authority is crucial for effective enforcement and implementation of rules and norms. However, the draft policy has not specified how, in which cases, and in what form NHERA could exercise the power. These will have to be spelt out clearly.

The roles and responsibilities of different agencies, as also envisioned in DNEP19, are described below.

#### a. Accreditation institutions

The policy proposal stated that accreditation, focused on outcomes, can prove to be the primary mechanism to ensure effective implementation of regulations in HEIs. It calls to create an independent ecosystem of Accreditation Institutions (AIs) that would be the very "lynchpin of the regulatory system" and the foundation for ensuring quality education. NAAC would be given the charge to develop such an ecosystem of multiple AIs, by issuing licenses to other agencies, and overseeing the accreditation process in all disciplines and fields. NAAC will also put in place an Institutions Accreditation Framework, focused on outcomes and their quality, to be used by all AIs. This is expected to yield a consistent and standardised template for assessment and accreditation. The draft policy recognises that since accreditation capacity has been a key concern in the Indian higher education system, there will be a requirement of one AI for every 200-300 HEIs. As a result, DNEP19 proposed reinventing NAAC as an entirely independent and autonomous body, separate from the UGC or NHERA. The proposal also mandatorily requires all HEI to be accredited by 2030, else they will cease to operate.

<sup>345</sup> Bhushan, Sudhanshu. (September 2018). HECI Act 2018 Fails to Address Structural Problems of Higher Education in India. *Economic and Political Weekly-Engage*, Vol. 53

<sup>346</sup> Ministry of Human Resource Development. "Draft National Education Policy 2019"

There are two distinct features of accreditation in the envisioned regulatory system. First, at present, NAAC does not guide HEIs, only assesses and accredits them. However, the new policy proposes that AIs will function as facilitators and mentors to HEIs, providing them guidance to build on their strengths to qualify for accreditation. Next, the DNEP19 recommends transitioning from the existing graded accreditation (HEIs are assigned a grade between A++ and C) to binary accreditation (HEI would either be accredited or not: 'yes' or 'no'). Currently, graded accreditation forms the basis of granting graded autonomy to HEIs; binary accreditation is expected to empower HEIs and categorically give them full autonomy.

#### **b. Professional Standard Setting Bodies**

Professional Standards Setting Bodies (PSSBs) will develop standards in their respective field of learning or practice. The 14 existing Professional Councils (see Figure 22) will transform into PSSBs; however, their regulatory powers over HEIs will be transferred to NHERA, which will act as the sole regulator. Thus, DNEP19 suggests that HEIs will have complete educational responsibility and autonomy in the professional field of study: freedom to design and determine academic curriculum, course structure and assessment in the field of study, and pedagogy and teacher requirement.

#### **c. Higher Education Grants Council**

The suggestion to establish the Higher Education Grants Council (HEGC) is the most critical component of the new draft policy since this was the big missing piece of the regulatory structure proposed in the Draft HEI Bill. DNEP19 proposes that funding of all public HEIs will be handled by an independent body that has no regulatory, standard setting or accreditation role. The HEGC would have the responsibility of disbursing developmental grants and fellowships in the higher education sector, including professional education. The HEGC will fund institutions as well as individuals, combining responsibilities of the UGC and the AICTE. But it will not play a role in setting salaries for the staff and faculty in HEIs and funding research activities. DNEP19 suggests setting up a separate entity, the National Research Foundation, exclusively for funding research activities and infrastructure. While funding norms for HEIs will have to be re-examined and streamlined, HEGC will add emphasis to scholarships and developmental funds to create new focus areas across all disciplines.

#### **d. General Education Council**

The General Education Council (GEC) will be set up as an academic leadership institution to drive the quality of education. The GEC will define attributes and level of learning for graduating students. The draft policy proposed that GEC will be responsible for creating a National Higher Education Qualification Framework (NHEQF) that would map all higher education qualifications leading to a degree, diploma or certificate in terms of learning outcomes. The NHEQF is envisioned to also allow flexibility in terms of transferring course credits. While the draft policy gives HEIs complete autonomy in designing courses, the GEC will also develop recommended curricular frameworks that serve as guides to HEIs.

#### **e. State Departments of Higher Education and State Higher Education Councils**

DNEP19 suggests that the Department of Higher Education in all states will coordinate the higher education system at the state level. This would include developing the institutional architecture in the state such that adequate financial support is provided to public HEIs. Meanwhile, as per the proposal, the SHECs will act as facilitating bodies to share best practices and serve as a platform for peer support among HEIs.

#### **f. Private institutions**

DNEP19 has made an unparalleled effort to treat all private HEIs at par with public HEIs within the regulatory regime. Both types of institutions are envisioned to be regulated on the same criteria, benchmarks and processes. It further encourages private philanthropic contribution for higher education while emphasising the need to eliminate commercialisation of education. As also suggested in DNEP16 and the draft EHCI Bill, the newly proposed policy calls for a "progressive regime of fees determination" focusing on a reasonable amount of cost recovery. HEIs will be allowed to determine the fees for their programs while ensuring that students also get freeships and scholarships.

## 5.4 Summary of recommendations

Recommendations	Objective
Increase accreditation capacity of agencies, especially at the state/regional level	Cover maximum number of HEIs to be assessed and accredited, with improved quality and oversight
Establish standard accreditation framework	To bring transparency and consistency in accreditation
Grant autonomy to HEIs on the basis of grade received in assessment	De-regulate HEIs and grant teachers and researchers the academic freedom to design academic coursework
Direct more grants to state-funded HEIs	Increase the role of state government in ensuring maximum coverage to quality university education
Encourage and incentivise private funding on the basis of educational outcomes	Reduce government's responsibility in providing grants to HEIs, while making HEIs accountable to an independent third-party

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