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Role of higher education in India

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Abstract
The higher education system in India is complex. The regulators associated with governance are overlapping and entangled across various ministries and regulatory bodies. With a Gross Enrolment Ratio (GER) of 18 per cent, India is still below the world average. With relatively stagnant growth of public sector, private sector now accounts for 59 per cent of the total higher education institutions and 65 per cent of the total enrolments in Indian higher education. In spite various innovations measures to address equity objectives, disparity still exists in terms of gender, ethnic groups, and economic criteria and in higher education. Excellence at a few institutes co-exists with mediocrity at many others. The opportunity for social mobility grasped by millions of Indians who obtain a college degree contrasts vividly with the waste of millions who remain excluded from a system in which they cannot afford to participate. And the dynamism presented by the creation of new private institutions throws into relief the stagnant governance structures of Indian public universities. Higher education has grown very rapidly in India over the last 15 years, with the proportion of those by location. Quality and efficiency policy responses and their endeavors have been insufficient accompanied by poor regulations and its subsequent implementation. Multiple regulations and measures have been envisaged by different commissions and committees to enhance the access, quality and equity to face the challenges of opening-up this sector globally.

Keywords: Indian higher education, governance, access, financing, privatization, equity, efficiency, quality, issues.

Introduction
It is widely identification that higher education promotes social and economic development by enhancing human and technical capabilities of society. Technical change and institutional change are key components of development. Higher education plays Indian Higher Education: Some Reflections 43 an important role in facilitating these changes by incorporating all of the various demographics of the population. Higher education has been found to be significantly related to the human development index and greater for the disadvantaged groups (Joshi, 2006) [6]. Similarly, the lack of such education causes the inverse to occur; i.e. the greater the level of higher education in a society, whether in stock or flow forms, the greater the level of human development can be, through its influence on two main components of human development index: life expectancy, and GDP per capita. In its size and diversity, India has the third largest higher education system in the world, next only to China and the United States. The higher education system in India grew rapidly after independence (Agarwal, 2006) [1]. Today, Indian higher education is comprised of 43,657 institutions, made up of 1000 universities and 63,023 colleges; it is the largest higher education system in the world in terms of the number of institutions. With the changing demographics, political, philanthropic and economic environment, the objective of higher education has now a more focused attention on access and equity. The Indian higher education has seen three phases of funding, philanthropic to public, and then to private financing. The changing financing patterns have altered regulations, equity, efficiency and quality aspects of higher education.

Objectives of the Research
This research paper has the following objectives:
1. To understand the governance of higher education in India.
2. To review the access to higher education in India.
3. To study the financing of higher education in India.
4. To understand the nature of privatization in higher education in India.
5. To understand the equity related issues in Indian higher education.
6. To examine the efficiency and quality concerns of Indian higher education.
7. To generate sources of employment in higher education in India.

Data collection
The research paper is based on secondary data. Various sources that have been used for the same include the reports and documents of Ministry of Human Resource Development, various regulatory bodies like the University Grants Commission (UGC), All India Council for Technical Education (AICTE), accreditation organizations, National Sample Survey Organization, Five Year plan documents, etc.

Observations and Findings
The observations and findings with regard to the Indian higher education have been mentioned here along the same lines as the objectives, i.e. governance, access, nancing, privatization, equity, efficiency, quality and internationalization of the Indian higher education.

a. Governance

In India, the Ministry of Human Resource Development (MHRD), Department of Higher Education is the Apex body of governance, acting more as an umbrella organization. Indian higher education consists of fifteen regulatory bodies performing overlapping roles in addition to influences from few other ministries too. The judicial interventions have at several times complemented or contradicted the objectives associated with higher education (Agarwal, 2006) [1]. It thus results into ambiguity related to policy understanding, policy implementations, accountability, and answerability. It has also been often criticized that the higher education system is influenced by political ideologies (NKC report, 2009) [12]. Higher education being the joint res possibility of both the Central and the State governments, the state/provincial governments' shares a lion's share of about 85 per cent and to that extent influence higher education.

b. Access

India has the largest higher education system in the world by the number of institutions with around 1000 universities and about 43,023 colleges. But it ranks third in terms of enrolments with about 25 million students (UGC, 2013). The Gross Enrolment Ratio (GER) has seen steep growth in recent past decade, which is appreciable considering the ever increasing population and thereby the relevant age cohort in absolute terms.

During the last five years the GER has increased more than 5 per cent and for some of the disadvantaged sections of the population it has been much more. With a GER of 25 per cent, India still lags behind world average, the averages of other countries including its growth sharing BRICS nations, and even the average of developing nations. But the GER attainment of 25 per cent is a result of increase in social demand and deliberate policy efforts to improve access (MHRD, 2013). Besides low GER, there exists demand supply gap in higher education in India. On the demand front, the rising population of the age-cohort, increased numbers of secondary education pass-outs, increased social and private returns to higher education induce the pressure to raise the access to higher education, whereas public higher education lacks enough funding from its competing and prioritized ends. Ever since the higher education has opened up to the private sector, it has shared most of the responsibility of increasing access. Of various types of institutes, 57 per cent are State Universities, 25 per cent Deemed Universities1, 26 per cent Private Universities, 17 per cent Central Universities, and other Deemed University is an institution that has been awarded a "Deemed" status by the MHRD given that it has acquired the characteristics of a university as demonstrated by the diversity of its programmes, the quality of research, and proven contributions to innovation and teaching. They get approvals through and proven contributions to innovation and teaching. They get approvals through Notifications of Central Government. They have degree granting power and are regulated as per the UGC [Institutions Deemed to be Universities] Regulations, 2014, which is a comprehensive regulatory framework covering the establishment and operation of such universities including eligibility criteria, infrastructure, funding, etc. 10 per cent comprising of various Institutes of National Importance and other university level institutes (UGC, 2013). Thus the non-public sector accounts for a higher share than public sector.

In Indian higher education, about 86 per cent of students are enrolled at undergraduate level and only about 24 per cent are enrolled at post graduate level. Surprisingly, diploma and certificate education has a 10 per cent enrolment as it is considered as an available provision for those who are not able to make it in the mainstream higher education. Unfortunately, for a nation aspiring to become a knowledge economy, a trivial 1 per cent enrolment in research would not be praiseworthy (UGC, 2013).

It has been observed that the share of enrolment in traditional courses viz., humanities, social sciences and pure/natural sciences has declined during the last one decade and the same trend is likely to continue in near future. The inclination for professional courses and thereby enhanced enrolment is favoured by increased private providers and other stakeholders, who anticipate better job prospects. This is likely to hamper the basic research output. The contribution of India in research publication has increased during last one decade but compared to its contemporary developing nations its growth has not been appreciable (DST, 2013). Further the Distance education accounts for 26 per cent of the total students' enrolments and the remaining 74 per cent is the share of classroom teaching in higher education (FICCI, 2014). Detailed bifurcation of the faculty-wise enrolments.

Stream (Category)	**% age**
Science :	42.23
Arts	49.26
Commerce ;	20.60
Engineering technology ;	41.25
Medicine,	23.06
Law	19.05
Education	16.52
Agriculture	17.56
Veterinary services ;	12.36
Other ;	3.26

This growth has been greatly compressed into only a few areas. First, most of the growth has occurred primarily in professional fields, especially engineering and management. Second, the growth has occurred in teaching rather than in research, with public research in India highly concentrated in autonomous research institutes instead of universities. Third, most of the growth has been in private institutes rather than public ones. And fourth, because the most dramatic growth has been in professional education such as engineering and management, the humanities and social sciences have been neglected. Such rapid growth, concentrated in private rather than public institutions and focused on only a few professional fields, has given rise to four crucial challenges. These are the need to ensure quality, to build graduate education and research universities, to provide equity of access, and to build excellent liberal arts universities. This chapter considers ways in which the growth of the higher education system has been compressed and the challenge that have followed, and provides suggestions for how these challenges can best be tackled. The problem of quality Engineering, pharmaceuticals, business, and computer applications have been the recipients of most of the growth in higher education in India. Both the number of engineering colleges and their enrolment have grown at a rate

of 20% a year for 15 years. At the height of this boom—from 1995 to 2010—India opened the doors to approximately one new engineering college and one new management institute each day. In 2012–13, India had around 3,500 engineering colleges and 2,500 management institutes 4 in 2013, out of the nearly 1.5 million approved engineering seats, almost 1.2 million new students were admitted to various engineering programs across India. This is a 30-fold increase over the 1983 annual enrolment of 40,000 engineers. This growth has contributed directly to India's abundance of engineers, but raising their quality is a pressing concern and represents the first challenge. To keep the quality of an engineering education level with the quality it had 30 years ago (hardly an ambitious goal), the number of faculty would need to have increased 30-fold. Because PhDs in science and engineering have only doubled and those holding a Master's degree in science and engineering have only tripled, the number of those who have achieved the credentials to teach at the tertiary level has not kept pace, so the number of faculty needed to ensure quality teaching falls very short. In fact, a severe faculty shortage affects almost every Indian institute. Various attempts have been made to address the quality problem. Most of these have focused on regulation, which can dictate the physical infrastructure for institutes and the qualification requirements for faculty. More useful measures have taken the form of various schemes to entice Indians with PhDs who are working overseas to come back home (an example is the Ramalingaswani Re-entry Fellowship programme) and programmes to make a career in academics and research more attractive to recent graduates (suchas the J.C. Bose National Fellowship programme).6 Such programmes will have some impact, but it will be felt mainly at the top end of the institutional scale. Well over half the faculty at the great bulk of institutes in India are 'temporary' faculty who do not have to meet the requirements, and who have to date displayed little interest in graduate programmes or research. It seems that trying to regulate quality into institutes has largely failed. Instead, a combination of market and institutional mechanisms has much greater potential for providing an effective boost to quality in education. For many years, when demand for professional course seats exceeded supply, tertiary institutions had little incentive to improve the quality of their faculty or their facilities. The supply of places at institutes of higher learning has now exceeded demand in India for the last five years in the southern states of the country, 7 and institutes are finally being forced to compete with each other to attract enough students. Simply relying on the market to weed out those institutes that cannot perform at an improved level and thus provide a higher-quality education, therefore, will address much of the problem.

Financing

The responsibility of financing higher education is shared by both public and private sector. Even in public sector it's a joint responsibility of Central/Federal government as well as State/Provincial government. India being a developing economy, amongst competing governmental priorities higher education is treated as a "merit 2 good." About 80 percent of the public higher education funding has been sourced from State governments and about 20 per cent from the Centre. Of the 80 per cent State government funding about 82 per cent goes in non-plan expenditure, i.e. routine administration and maintenance and hardly in any capacity building (FICCI, 2011) [4]. The Central government spending is lopsided towards central universities and centers of excellence serving hardly 3 per cent of the total students. While the trend has always been upwards, the total public expenditure on higher education at about 1.25 per cent of the GDP, is by any standards certainly insufficient (UGC, 2012). The private expenditure on higher education has increased about 12.8 times during last one decade. The household expenditure on higher education shows that the share of tuition and other fees have increased to about 53 per cent, which largely due to increase in the share of private institutions.

Privatization

Kapur and Mehta (2007) [7] described the evolution of privatization in Indian higher education using a phrase, "from half-baked socialism to half bake capitalism." They argued that much of the massive privatization has not resulted from ideological commitments of key actors but is instead a result of collapse of the state system resulting in weak ideological and institutional foundations. Trends show that of the various forms of institutes of higher education that exists, the number supported by public funding have stagnated by growth (like the central and state universities, aided colleges, etc.) and rather the numbers with private funding have witnessed a speedily rising growth (like the private universities, deemed universities, unaided colleges, etc.) (Agarwal, 2006) [1]. Within a small duration of five years from 2001–2006 the unaided private higher education accounted for 63 per cent (from 43 per cent in 2001) of the total higher education institutes and 52 per cent (from 33% in 2001) of the total higher education enrolments (FICCI, 2011) [4]. Since 2005–2011, the State Private Universities have witnessed a fifteen-fold rise in the number of institutes from 6 to 94. Of the 130 Deemed Universities, 73 are in the private sector. About 1 per cent of colleges have been granted an autonomous status (FICCI, 2011) [4]. Quiet obviously most of this growth of private higher education has happened in the more marketable professional courses like engineering, medicine, management, computer applications, etc. ranging between 50 per cent to 95 per cent of the private institutions.

Been the first to permit private engineering colleges, and student demand followed. Recent work by Chandra shekhar and Sharma shows how, over the last 10 years, 5 million students migrated from states such as Bihar, Uttar Pradesh, West Bengal, and Rajasthan to prosperous states such as Karnataka, Maharashtra, and Delhi in search of an education. That migration prompted other states to join in the private education boom to meet the demand of their own students. By 2013, many other states—such as Madhya Pradesh, Gujarat, and Punjab—had caught up, and their share of engineering students now reflects their share in the population.

The need to build graduate education and research universities 10

The concentration by field has combined with a focus on teaching programmes. Graduate technical education has stagnated relative to undergraduate education. There are some signs of life now, with the better private engineering colleges starting Master's degree programmes and the Indian Institutes of Technology (IITs) growing their PhD programmes in a big way. But India will need 10 years of increased output to

address the faculty shortages just at the top technical institutes, even before beginning to substantively address the shortages that are rife across the country's mainstream technical education system. Even at the very top, a recent article indicates that the 15 IITs have over 2,000 faculty vacancies—equivalent to more than one third of its total faculty positions.

Thus the second challenge is to raise the quantity and quality of graduate technical education, an issue linked to where public research is done. Although India was also an early investor in public scientific research, this investment went overwhelmingly into autonomous scientific research institutions. The result of doing scientific research in autonomous institutions has been that research has largely bypassed the university system. A few leading institutes, especially the IITs, are now focusing much more on research than they did in earlier years,13 but most publicly funded research is still done in autonomous institutes. Although research in the higher education has grown (from 1% to 4% of national research and development, or R&D,) over the last 20 years, even its current level of 4% compares poorly with an international norm of 15% to 25% of national R&D spending. Instead India continues to locate over 90% of its public research spending within autonomous institutes.

Every other major economy concentrates public research within the university system. Doing public research within the university system is a longest abolished international principle. High-quality graduate education requires research, and combining research and teaching will benefit both. World-class graduate education requires teachers who do research. And the benefits to be had by combining research and teaching do not f low only one way, to teaching. Research too benefits, which is particularly important for India's innovation system. The successful experience of the Republic of Korea and Taiwan, Province of China, for example, indicates that the f low of innovation runs sequentially from industrial development to industrial in-house R&D and then to public scientific research. An industrial sector competing with the best firms in the world in increasingly sophisticated industrial sectors is a requirement for sustaining investment in in-house R&D, and strong in-house R&D.

Undergraduate engineering student intake by states

The more advanced technological sectors in Indian industry are only now capable of utilizing, and therefore sustaining, public investment in scientific research. By combining this research with teaching, the Indian economy will get the primary benefit of doing research: availability of trained researchers. The issue of the isolation of Indian public research has simply received no public attention and is not on the reform agenda. Indeed, at a minimum India should grandfather the problem and allocate increases in public research spending to the higher education sector. Instead, the problem is perpetuated. In the government's 11th Plan (2007–2012), new autonomous public research institutes were initiated; in the current 12th Plan (2012–2017), doors are opening on another seven public research institutes.16 Opening new autonomous research institutes outside of the higher education system remains the number one long-term problem with the Indian higher education system. It is foolish to remain oblivious to something where contrary international evidence is so overwhelming, so well founded, and so well known.

Providing equity of access

The rapid growth of the Indian education system has overwhelmingly taken place in the private sector, leading to concern about equity and access. Engineering enrolment rose from 15% in private institutes in 1960 to over 90% by 2006–07.17 Growth in public-sector higher education over the last 30 years has been small, with some renewed investment only in the last eight years. Obtaining clear data on just what proportion of spending on higher education is put towards public education and what is put towards private education is not easy in India. The official numbers indicate that India spends around 0.5% of GDP on higher education.19 My—very rough—estimate indicates that private spending on higher education is about 2% of GDP.20 Why does this not show in the official data? Many private engineering and medical colleges charge before the admission what are called 'capitation fees'—they collect a certain amount as a cash donation (sometimes with no receipt) and put this in a trust that is formed to receive the money. The amount charged for the capitation fee varies considerably, based on course and institute desirability. A good private engineering institute in Maharashtra, for example, would charge an official fee set by the state of US$1,500 per year, but would add a capitation fee of US$15,000 as an immediate, one time 'donation' to the trust before admission is granted. The fees for attending a medical college would be even more extreme. Overall, Indian higher education is increasingly private and increasingly expensive, in spite of the growing state regulations regarding what can be charged and who can be admitted. The fact that spending on private education is evident in surveys of consumer spending but not in official education data means that capitation fees, long made illegal, are alive and well.21 The conclusion is clear: as Kapur and Mehta put it in the title of their 2004 [9] paper, Indian education has gone from 'half-baked socialism to half-baked capitalism'.

So the fourth challenge is to provide equity of access for all Indians. Only the very best performing poor (who get into some leading public institutions such as the IITs on merit) have access to high-quality education. They cannot afford the bulk of private education on offer, and they cannot access loans because the fees must be paid unofficially in cash. The result is that student loans cover less than 3% of students; this is in substantial contrast to the situation in the USA, the United Kingdom, and Australia, where more than 50% of students obtain student loans.23 Reforms that free all institutes to charge the fees they wish would allow poor students to obtain loans for their education. The state could then guarantee all student loans, which could be made available through the banking system. These loans could be repaid in an equitable way. One of the most interesting approaches to student loan repayment is the Australian system, where education loans are repaid through a surcharge percent on income tax paid.24 This has the merit of speeding up repayment for those earning more and reducing or eliminating it for those in low paying occupations. Finally, there is no reason for the state to subsidize the tuition of professional courses at the IITs or Indian Institutes of Management (IIMs), where median earnings after graduation comfortably cover the cost of education. The money saved by not subsidizing professional education could be used to fund a loan or grant programme for poor students.

Building world-class, full-service research universities

A focus on professional fields has the corollary of neglect of the social sciences and humanities. India today THE GLOBAL INNOVATION INDEX 2014: Higher Education in India arguably does not have even a single world-class, full-service university. The country requires several. The last 10 years have begun to see some private investment in liberal arts colleges and a few endowed universities. Much remains to be done, however, to build full-service universities that provide an excellent education in the humanities and social sciences. The abundance of political and intellectual freedom in India can help the liberal arts to thrive, and the country's education policy should make full use of this advantage. The most elusive feature of a world-class institute is excellence. Excellence is hard to define—most university presidents who have it say it is 'in the water'. But in whatever way it is defined, excellence is sorely missing in Indian higher education.

Only at the Indian Institute of Science (IISc) Bangalore, the country's IITs, and some IIMs can one find excellence in abundance. Creating a culture of excellence in an existing educational institution that is only mediocre is a much harder task than growing new fields in an institution that already has it. Because of this, India's best chance of creating a few world-class, full service universities is to grow its IITs and its IISc into full-service universities, where graduate and undergraduate educations are combined and where science, engineering, and the liberal arts and humanities are all of equal merit. Establishing full service universities from the IITs and IISCs should be the Indian government's project for the next 20 years.

Conclusions

The relatively small reform of the early 1980s of allowing private colleges in some states triggered a massive expansion of professional education, almost all privately provided. We should not underestimate just how impressive this expansion has been, but the quality problem India now faces is a direct consequence of its emphasis on quantity over quality. The solution is not to limit expansion but rather to improve quality. In typical Indian style, the state manages to simultaneously overplay and underplay its role. The state over regulates private institutes, limiting what can be started, how many students can be admitted, what fees can be charged (although it has been unsuccessful in eliminating the persistent capitation fees), and the curriculum that is taught. At the same time, it underplays the assessment of institute quality, which it should publish; continues to spend money on public research in the wrong place (autonomous institutes); and grossly under invests in the liberal arts and social sciences. Meanwhile, the public agenda is dominated by debate on extending caste-based reservations in public and private institutions, a move focused nine parts on electioneering and one part on educating. India has a tremendous opportunity, an opportunity provided by a unique combination of the huge availability of talent in student numbers with an education system that—with all its problems—has demonstrated its ability to respond effectively to market demand, a strong social propensity to invest in education at great personal cost, and an abundance of the political and intellectual freedom in which academic enquiry can thrive. To produce 1.5 million engineers a year, of whatever quality, is no mean achievement. India must now move on four fronts: first, it must build true research universities by moving public research funding from autonomous institutes to the university system. That will grow graduate programmes, which will simultaneously provide faculty for the education sector and trained researchers for industry. Second, it must use the market more and more to improve quality in the largely private professional education system, with the state ensuring public assessment so parents and students decide which institutes are of adequate quality to survive. Third, it must ensure equity of access on merit by permitting institutes to set their own fees and recover costs in a transparent manner, for which state guaranteed loans are easily available. The state will need to step in to provide adequate support for non-professional fields, but there is no reason to subsidize education in an IIT or IIM or to regulate what an engineering college can charge. And finally, it must focus higher education investment on building a few world-class, full-service universities that will produce the country's intellectuals of the future. India must not squander this opportunity.

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