HIGHER EDUCATION IN INDIA

Issues Related to Expansion,

Inclusiveness, Quality and Finance

ज्ञान-विज्ञानं विमुक्तये

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI-110 002

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UNIVERSITY GRANTS COMMISSION
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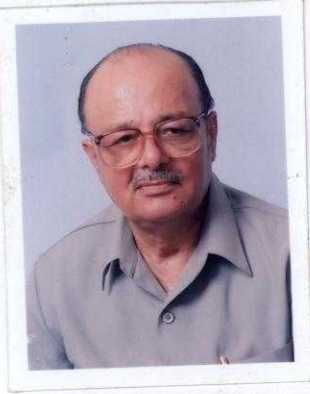
मानव संसाधन विकास मंत्री
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MINISTER OF
HUMAN RESOURCE DEVELOPMENT
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NEW DELHI-110 115

MESSAGE

I understand that the University Grants Commission had sponsored a number of studies on the various dimensions of Higher Education in the country. These studies were undertaken to develop necessary information base, as source material to prepare the Report on Approach and Strategies for the 11th Five Year Plan, 2007-2012. This volume entitled "Higher Education in India-Issues Related to Expansion, Inclusiveness, Quality and Finance" contains these studies sponsored by the University Grants Commission.

2.   I also understand that the information generated by these studies has been used in preparation of perspective on the 11th Plan and the findings have helped in shaping its goals and objectives. These studies bring out the fact that the country has made significant progress in higher education in terms of number of universities and colleges and teachers. Increase in institutional capacity has improved the access to higher education, which is reflected in increase in the enrolment rate to about 11 percent. The studies also indicate that, despite this many fold increase, we have a long way to go before we achieve a reasonable level of enrolment in higher education. It also brings out the problem of inter-regional and inter-group disparities in educational attainment, including the issue of quality of higher education.

3.   The 11th Plan has addressed these issues in a focused manner. The main objective of the 11th Plan is "Expansion of enrolment in higher education with inclusiveness, quality, and relevant education, with necessary academic reforms in the university and college system. The 11th Plan has set up a target of 15 percent enrolment by 2012. Towards that end the Government has also enhanced the central funding to higher education by eight to nine fold. The focus is also on addressing the inter-regional and inter-group disparities in access to higher education. The issue of quality in education is being addressed through several initiatives.

4.   The importance of good and reliable information and data on higher education for proper planning and policy formulation cannot be over emphasized. Good data base helps us to develop policies which remain well grounded. The efforts by University Grants Commission to bring out the studies based on serious research is a welcome attempt.

(ARJUN SINGH)

Preface

This volume "Higher Education in India - Issues Related to Expansion, Inclusiveness, Quality and Finance" is based on the studies sponsored by the UGC as part of the resource material in preparation of "Report on Approach and Strategy for higher education in the 11th five year Plan". These studies were conceived by UGC for a specific purpose. The UGC was required to prepare a Report on Approach and Strategy for the development of Higher Education during the 11th Plan (2007-2012). This process began some time in the middle of 2006. In the process of the preparation of this report, it was realized that necessary data and information on the relevant aspects of higher education in India was inadequate. It was felt in the UGC that in the absence of proper information on the relevant aspects of higher education, we may not be able to get insight in to the current issues facing higher education. It is in this background that the UGC decided to sponsor about eight studies on various aspects of higher education. A team consisting of about seven researchers specialized in the higher education was constituted to undertake the studies on relevant aspects.

The studies covered a number of issues. It included estimation of enrolment rate in higher education at all India level and at State and district levels with alternative sources of data. It also includes the estimation of enrolment rate at disaggregate level by various groups (such as scheduled caste, scheduled tribe, other backward castes and higher castes, women, religious groups and economic groups like self–employed and wage labour, groups based on income level and poor –non-poor).

Some papers deal with the issue of quality and excellence in higher education. The issues related to the teachers formed the main component of the studies on the quality of higher education. The other issues, the studies addressed, relate to academic reform, privatization of higher education and financing of higher education.

The studies sponsored by UGC brought a gainful insight on these aspects of higher education. The findings of these studies formed the source material and

base in the preparation of the U G C's report on higher education for 11th Plan. In this way the results of these studies have helped in shaping the government's perspective on the higher education under the 11th Plan.

Given the richness of the material contained in these studies, there has been a constant demand by various education institutions and academicians to place the studies in the public domain. Therefore with some editing and marginal changes, these studies have been included in the volume in their original forms. Since these studies were done by the individual researchers, views expressed in the papers are of individual authors.

The results of these studies have helped in developing the Approach and Strategy of the 11th Plan for higher education. Since these studies are based on the serious research and examination of official data, the findings in many ways are new and insightful. The studies are rich and new in their content, hence the UGC decided to publish them in the form of a report for the use of the academic community and policy makers.

These studies, not only bring out the progress made so far but also point towards the emerging problems faced by higher education system in the country. By implication the findings also suggest the possible way out.

The higher education in India has witnessed many fold increase in its institutional capacity since independence. The studies observed that notwithstanding this many fold increase in the enrolment; it is still relatively low by international comparison. Besides the studies bring to light the problem of regional imbalance as well as inter-social groups imbalances in enrolment rate, in term of male-female, inter-caste, inter-religion, inter –occupation and poor non poor disparities in the attainment in enrolment. The studies also highlighted the issue of quality. Above all, the studies analyze the problem of under financing of higher education since the mid eighties. The studies thus emphasize the need to give due consideration to higher education and urge to address the issue of low enrolment, regional, and multiple group imbalance in access to higher education, the issue of quality and academic reforms and insist on reversing the trend of deceleration in the public expenditure on higher education in the country since the mid 1980's.

The results of these studies have helped in shaping the government's perspective on higher education under the 11th Plan. The central focus of the 11th Plan is now on "Expansion of enrolment in higher education with Inclusiveness, Quality and Relevant education and with necessary Academic Reforms in the university and college system. These studies have given necessary input in evolving the perspective on each of these objectives.

During the last two years or so, higher education has become a theme of the national discourse and received attention in various forum. The National Knowledge Commission has brought the national attention. The results of this engagement led to the recognition by the government which was reflected in substantial increase in the central allocation to higher education in the 11th Plan.

The Hon'ble Prime Minster Dr. Manmohan Singh and Hon'ble Union Minister for Human Resource Developemnt , Shri Arjun Singh, , have given leadership to this new initiative. In the Planning Commission, the Vice-Chairman Dr. Montek Singh Ahluwalia and Dr. Bhalchanda Mungekar, Member, Planning Commission, in charge Education, have also expressed the need to give due place to higher education.

In the Human Resource Development Ministry, Shri Sudeep Banerjee, former Secretary, Education, Ministry of Human Resource Development, Government of India; Shri R P Agrawal, Secretary, Education, Ministry of Human Resource Development, Government of India and Shri Sunil Kumar, Joint Secretary, Higher Education , Ministry of Human Resource Development, have contributed with this process quite significantly.

In the UGC, the Vice Chairperson Professor Moolchand Sharma, former Secretary, Dr. T.R. Kem, present Secretary Dr. R.K. Chauhan and others have worked in lending the support to the articulation of issues and taking initiative on sponsoring the studies.

However, all members of the research team need our special appreciation. We are thankful to Professor Duraiswamy of University of Madras, Professor Sudhanshu Bhushan of NUEPA, Delhi; Professor Ravi S.Srivastava, Professor Sarswati Raju , Dr. Sachidanand Sinha from Jawaharlal Nehru University, Delhi; Professor Amaresh Dubey, Senior Economist, National Council of Applied Economic Research, Delhi, Professor G.K. Chadha, Member Prime Minister Economic Advisory Council, Delhi and Professor Furqan Qamar, Professor, Department of Management Studies, Jamia Millia Islamia, New Delhi. We are particularly thankful to Professor Ravi S. Srivastava, Professor, Jawaharlal Nehru University, who coordinated the research work. We are hopeful that academic administrators, policy makers, educational institutions, and researchers will find the insights of these studies of use for various purposes.

Sukhadeo Thorat
Chairman
University Grants Commission
November, 2008

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Approach and Strategy in 11th Plan

Sukhadeo Thorat

About the Studies

This report on higher education in India is based on the studies sponsored by the UGC as part of the resource material in preparation of an "Approach and Strategy" for higher education in the 11th five year Plan. These studies were conceived by UGC with a specific background and purpose. For a preparation of the perspective on the higher education by the Ministry of Human Resource Development and the Planning Commission of India, the UGC was required to prepare a Report on Approach and Strategy for the development of Higher Education during the 11th Plan 2007-2012. This process began some time in the middle of 2006. When the UGC began the work for the preparation of the report on higher education for the 11th plan, it realized the problem of availability of necessary data and information on the relevant aspects of higher education in India.

It may be recalled that the India's Policy and Action plan for higher education as mentioned in the 1986 Education Policy Document and subsequent policy announcements including the 1992 Action Plan have been governed by five broad goals, which include enhancement of the enrolment rate in higher education, provision for equal access to all, particularly to educationally backward classes, quality education and promotion of relevant education. It was therefore necessary to take a stock of the achievements, if not during the last fifty years, at least during the 10th plan. It was realized that while information on some aspects was available, this was not the case with respect to many other important aspects of higher education at all India and at the level of the State and districts. It was felt in the UGC that in the absence of proper information on the relevant aspects of higher education, attempt to develop an approach and strategy will be incomplete. It is in this background that the UGC sponsored about eight studies on various aspects of higher education. A team consisting of about seven researchers, who specialized on the higher education, was constituted to undertake the studies on relevant aspects.

The studies covered number of issues. It included estimation of enrolment rate in higher education at all India level as well as at State and district level with alternative sources of data. It also included the estimation of enrolment rate at disaggregate level by various groups (such as schedule caste, schedule tribe, other backward caste and higher caste, women, religious groups and economic groups like occupation groups, poor –non-poor) and quality of higher education, issues related to teachers in universities and colleges, academic reform, privatization of higher education and financing of higher education.

The studies sponsored by UGC brought significant insights on these aspects of higher education. The findings of these studies thus formed the source material and base in the preparation of the UGC's report on higher

education for 11th plan and to a great extent helped to develop the perspective of the Ministry of Human Resource Development and Planning Commission on higher education in the 11th plan.

Given the richness of the material contained in these studies, there has been a constant demand by various education institutions and academicians to place the studies in the public domain. Therefore, with some editing and marginal changes, the studies have been included in the volume in their original forms. Since these studies were done by the individual researchers, views expressed in the papers are of individual authors.

Introduction

In this introductory chapter our purpose is two fold. Firstly we present the main findings of these studies and the issues that they have brought out in fore relating to the higher education system in the country. Secondly we discuss the manner in which these issues have been addressed in the Approach and Strategy of the 11th Five year plan.

Progress in Institution capacity

We first begin with the review of the progress of higher education in the country. The level of higher education is determined by the size of institutional capacity of higher education system in the country. The size of higher education system in turn, is determined mainly by three indicators, namely number of educational institutions-universities and colleges, number of teachers and number of students.

The higher education in India has witnessed many fold increase in its institutional capacity since independence. During 1950 and 2008, the number of universities has increased from 20 to about 431, colleges from 500 to 20,677 and the teachers from 15,000 to nearly 5.05 lakhs. Consequently, the enrolment of students has increased from a mere 1.00 lakh in 1950 to over 116.12 lakhs.

Table 1: Institutional Capacity

Capacity Expansion in Higher Education		
Institutional Capacity Indicator	**1950**	**2008**
Number of University Level Institutions, including 11 private universities	25	431
Number of Colleges	700	20,677
Number of Teachers	15000	5.05 lakhs
Number of Students Enrolled	1 lakh	116.12 lakhs

Table 2: Type of Universities

Type	September 2008
Central Universities	25
State Universities	230
Deemed Universities	113
National Importance (State)	5
National Importance (Center)	33
Private Universities	28
Total	431

Access to Higher Education

Aggregate Enrolment Rate

The expansion in institutional capacity in terms of number of universities/colleges and teachers has provided greater access to the students to post higher secondary education.

The access to higher education is measured in term of gross enrolment ratio, (GER) which is a ratio of persons enrolled in higher education institutions to total population of the persons in age group of 18 to 23 years. The estimate of GER is generally based on the data collected by MHRD/UGC from the educational institutions. However, the studies in this volume for the first time also estimated the GER based on National Sample Survey (NSS) data and population Census data. Table 3 presents the GER based on the Selected Education Statistics (SES) for 2006/7, NSS Data for 2004/5 (Ravi Srivastva's study) and population Census data for 2001.(S.Sinha's study)

The estimate based on SES indicates that the access to higher education measured in term of gross enrolment ratio increased from 0.7% in 1950/51 to 1.4% in 1960-61. By 2006/7 the GER increased to about 11 percent.

The GER based on NSS data for 2004/5 is on higher side that is 12.59% (10.84% for graduate and 1.75% for diploma). The GER is also on higher side based on population census data for 2001, that is, 13.6 %.

The studies in this volume bring out the obvious differences in enrolment rate between SES and NSS/population Census. The NSS being household survey covers all public and private institutions as well as distance education and also include certificate and diploma holders. The SES has generally remained confined to graduate and above in public institutions and private aided institutions. Beside it suffers from under reporting by the states and universities. The difference between the two sources is about 2 percentage points. The population census estimate is also based on household survey and thus includes all institutions. Beside the graduate and above, population census data also include certificate and diploma holders.

Table 3 Enrolment Ratio by alternative Sources (figures in percentages)

Alternative Sources	Gross Enrollment Ratio			Enrollment Rate of Eligible Student
	All Graduate & above	**Only Graduate**	**Only Diploma**	**All**
Selected Education Statistic (2006-07)	10.80	-----	---	NA
National Sample Survey (2004-05)*	12.59	10.84	1.75	56.61
Population Census 2001 *	13.6	NA	NA	NA

*Source- Estimate worked out by Ravi Srivastava and Sinha,2008

Inter –Regional disparities in Enrolment rate

While the enrolment rate at aggregate level is about 11% in 2006/7 at overall level, it varies significantly across the states and districts. The studies in this volume bring out the regional disparities in the enrolment rate.

The estimate separately worked by Ravi Srivastva and Amresh Dubey based on the NSS for 2004/5 (NSS Employment and Unemployment Survey, 61th Round, 2004/5) data bring out variation across the states. As against the 11% of all India average, the GER is lower in states of Aunachal Pradesh, Bihar, M.P., Meghalaya, Mizoram, Rajasthan, Sikkim, Tripura and Jharkahnd.

There are large number of districts which have lower GER. It needs to be mentioned that in 10th Plan educationally backward districts were identified on the basis of literacy rate. It was felt that for identifying the educationally backward districts in higher education, instead of literacy rate, the gross enrolment rate will be a better indicator. Therefore the educationally backward districts were identified based on the gross enrolment ratio. The estimate made by S. Sinha based on the population Census data for 2001 revealed that out of 584 total districts about 373 districts had GER lower than national average. Of the total educationally backward districts about 3% had GER less than 3%. About 21% had GER which vary between 3 % to 6%. Another 38% had GER between 6% to 9% and the remaining 37% had GER between 9 % to 12%.

Gross Enrollment Ratio for Graduate -2004-05
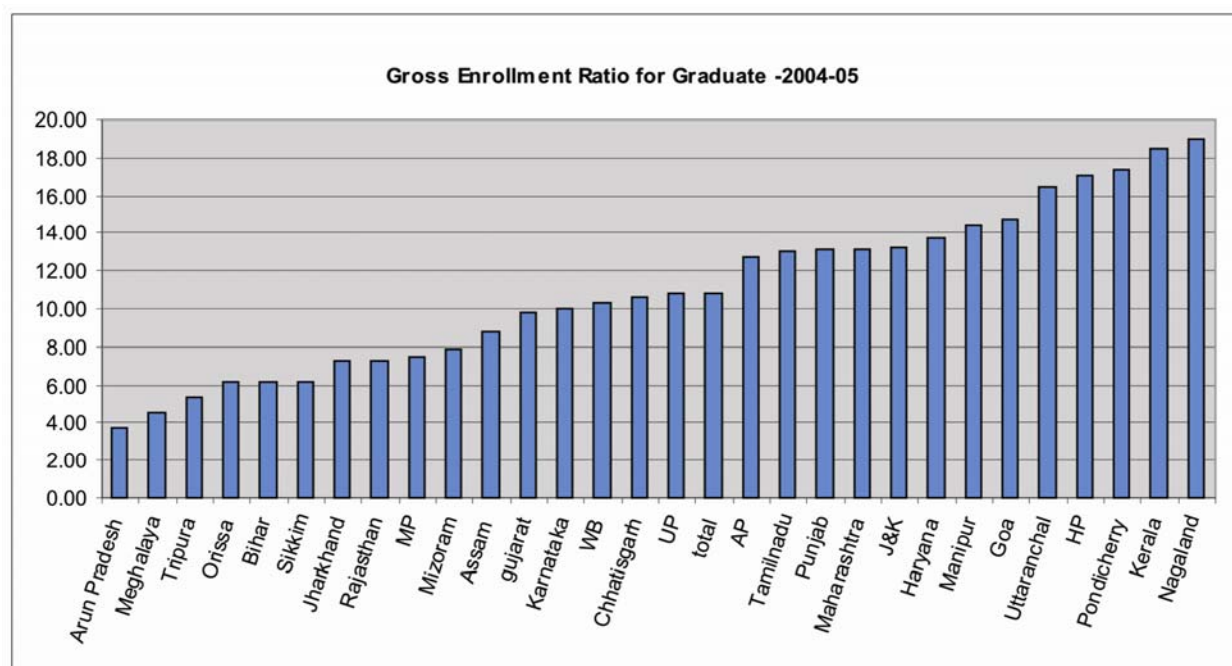
Issues Related to Expansion of Enrolment Rate and Strategy proposed in 11th Plan

The 11th Plan recognized the dual problem of higher education, namely of low enrolment rate and the regional imbalance. It recognized that the 11 % enrolment rate is too low compared to 23% of world average or 36.5 % for countries in transitions or more than 55% for developed countries. Development experience of the developed countries indicates that sustained economic growth requires a minimum of 20 % to 25% enrolment in higher education.

Table 4 Enrolment Ratio –Cross-country comparison in 2000

Groups of Countries	Gross Enrolment Ratio
Countries in Transition	36.5
Developed Countries	54.6
Developing Countries	11.3
World average	23.2

With this realization the 11th plan aims to increase the GER to 21 % by the end of Twelfth plan with an interim target of 15 % by 2012.

Beside the Plan also recognized that the additional increase in enrolment necessarily will have to come from those regions where the enrolment is relatively low. Thus reduction of inter-regional disparities is a part the

over all strategy of increasing the enrolment rate up to 15 % in 11th Plan and further up to 21% by the end of 2012.

To realize the target of 15%, the enrolment will have to be raised at much higher per annum rate. Duraiswamy worked out the required increase in enrolment to achieve the target of 15% GER by the end of 11th plan. It indicated that the 15% target would requires us to increase the total enrolments at per annum rate of 8.9% (as against only 4.5% during the 10th Plan). In absolute number it would mean net increase of about 7 millions students by 2012.

Thus the 15% target envisages an increase in enrolment from 14 million in 2006/7 to 21 million by the year 2012 with net increase of 7 millions. In terms of annual growth rate, as mentioned above, this net increase would amount to 8.9 per cent increase on per annum basis.

During the 10th Five Year Plan, enrolment is estimated to have increased from 9.5 million during 2002-03 to 14 million during 2006-07, that is, a net increase of 4.5 million at a per annum rate of about 4.5 per cent. The targeted increase of 7 million during the 11th Five Year Plan would thus, require much a larger expansion in the capacity of educational institutions in the realm of higher education.

It is equally necessary to recognize that achieving a 5 per cent net target is indeed ambitious one. Considering that we have been able to increase the GER by 10 percentage points in the last fifty-five years (that is from 1 per cent in 1950 to 10 per cent in 2006-07); the achievement of the targeted increase by 5 per cent net in the 11th Five Year Plan (half of what has been achieved in the last fifty-five years) seems to be a determined proposition. Hence it requires a matching expansion in the capacity of educational institutions.

The 11th Five Year Plan proposed a dual strategy to increase the institutional capacity to achieve the target of 15% by 2012.

The first component of this strategy involves additional increase in the numbers of universities, colleges, and vocational and technical institutions.

Second component of the strategy centered on enhancing the "intake capacity" of existing educational institutions.

The realization of 15% target, as mentioned above, would require additional educational institutions. The question is how many more universities and colleges the country will require? This is a difficult issue, which has not been empirically addressed so far. However, the studies in this volume tried to make some estimate.

The study by Sudhanshu Bhushan worked out the tentative estimate of the number of additional universities and colleges, that the target of 5% net enrolment would require. Given the limitation of data Sudhanshu Bhushan used alternative norms to arrive at the additional number of universities and colleges (see table 5). Under norm (i) that is 20,000 student per university, by 2012 about 735 additional universities would be needed. Under the norm (ii), that is, 30,000 students per university, 378 additional universities would be required. Using the population criterion of 2 lakh student per university (in the age group of 18 to 24 years), he arrived at additional universities of about 378, which matched with the estimate based on norm (ii). (see table 5).

In the case of colleges, Sudhanshu Bhushan's estimate which are based on the assumption of 10 colleges per one lakh population in 18-24 year age group shows that by 2012 additional 2602 colleges would be required during 11th plan in addition to 11699 general colleges in 2005.

The projected estimate of additional universities and colleges to realize the enrolment target of 15%, although are tentative in nature, nevertheless they provide some idea about the magnitude of additional universities and colleges that the country needs and also indicate the challenges ahead of us. These estimates could be improved upon with relevant data and improved norms.

Table 5: Number of Universities and Colleges Required-An Estimate

Criteria		Restructuring, 2005		Projection by 2012	
		Total	Additional	Total	Additional
Enrolment Criteria	Norm (i) 20000 per university	646	309	1072	735
(inclusive of UG and PG)	Norm (ii) 30000 per university	430	93	715	378
College Criteria	Norm (i) 20 colleges per university	585	248	-	-
	Norm (ii) 30 colleges per university	389	52	-	-
Population Criteria	(i) 1 university per 2 lakh population in 18-24 year age	619	282	715	378

Source-Estimate based on the study by Sudhanshu Bhushan, 2008

The 11th plan recognized the need of additional education institutions. The 11th Plan thus proposed the following steps to increase the new institutions.

a) 30 new Central Universities, under the initiative of the Prime Minister, Dr. Manmohan Singh, have been proposed. It also includes setting up of 30 medical and engineering colleges in Central Universities. In addition a Tribal University is also to be set up.

b) On technical education side 8 new IITs, 20 NITs, 20 IIITs, 3 IISERs, 7 IIMs, and 2 SPAs have been proposed.

c) Again on the initiative of Prime Minister 373 new colleges in districts with less than all India GERs with Central assistance on a matching basis from the States have been proposed; and

d) New Polytechnics in un-served districts, 500 new community Polytechnics, and 210 new community colleges have been proposed.

Second strategy envisages expanding of intake capacity of existing institutions – both government and private and covers Central and State Universities, colleges, and other education institutions. An essential part of this strategy incorporates a substantial increase in the regular development grants to Central and State Universities and colleges.

Besides, other provisions include disbursement of special grants to Central Universities and other Central institutions (like the IIMs, the IITs, the NIITs, medical, and engineering institutions) for increase in their intake capacities by about 54 per cent under the stipulations of the Oversight Committee.

Expansion through Increased Access in Low Enrolment Regions

The estimates worked out by Sudhanshu Bhushan, Ravi Srivastva and S. Sinha brings out considerable disparities in the enrolment between states and districts. Therefore at uniform growth rate of enrolment

Sudhanshu Bhushan has estimated as to how different States would perform. His estimate indicates that, among major states, Bihar, Tripura, Arunachal Pradesh, Assam have GER of less than 10% in 2005. These states are likely to achieve enrolment target of less than 10% in 2012. There are states such as Rajasthan, J&K, W&B, Jharkhand, Chhatisgarh, UP, Kerala, Orissa and Harayana which are likely to achieve GER in the range of 10% to 15% in 2012. Remaining states will have achieved GER of more than 15%. The enrolment target, addition enrolment and GER for the states are based on certain assumption relating to population and GER.

11th Plan thus provides a particular focus on reducing the regional imbalance in the enrolment rate. The policy focuses on educationally backward districts; hilly, border, and tribal areas; remote locations; minority concentration districts; and rural areas. The universities and colleges located in these low enrolment districts will receive an additional financial support. This special initiative will also help to enhance the intake capacity of exiting universities and colleges.

Issues Related to Inclusiveness and Equal Access

The studies in this volume observed that although the enrolment rate in higher education is about 11 %, there are significant inter group disparities in access to higher education. Ravi Srivastva and Amaresh Dubey based on the NSS data for the first time estimated the gross enrolment rate for various groups and bring out the variation in enrolment rate in 2004/5, between male -female, between SC, ST, OBC and other, between religious groups, economic groups such as self employed and wage laborer, between income groups (in term of per capita consumption expenditure) and poor and non poor. The male-female disparities are examined in greater detail by Saraswati Raju in her paper. Put together these studies provide good insight into inter- group differences in access to higher education in Indian society.

The NSS data for 2004-05 (latest year for which the NSS data are available) indicates significant **rural and urban** disparities- enrolment rate being 6.73 percent and 19.80 per cent for the rural and the urban areas respectively – the GER in the urban areas being three times higher compared to rural areas.

However, **inter-caste/tribe** disparities are the most prominent. In 2004-05, the GER was about 11 per cent at overall levels. The GER among the SCs (6.30 per cent), the STs (6.33 per cent), and the OBCs (8.50 per cent) was much lower compared with the Others (16.60 per cent). Thus, the GER for the SC/STs was three times and that of the OBCs about two times less compared with the Others. Between the SC/STs and the OBCs, however, the GER was lower among the former by about two percentage points.

There is another feature about access to higher education, which the studies bring out quite clearly. The access to these social groups varies within the respective religion to which they belong. Therefore, the SCs, the STs, and the OBCs suffer unequally as religious group. For instance, in 2004-05, the GER of the OBC Muslims was 6 per cent as compared with 7.34 per cent for Non-OBC Muslims. Similar disparities are apparent in the case of SC and the Non-SC/ST Christians. In the case of the SC Sikhs, the GER was only 2 percent compared with 15 per cent among Non-SC Sikhs. Similarly, the GER of tribal Christians was 6.48 per cent compared to 23.29 per cent for Non-SC/ST Christians.

It is, thus, evident that the SCs, the STs, and the OBCs from all religion suffer from lower access to higher education. However, the SCs within the Hindu and the Sikh suffer more acutely than the SCs belonging to other religions. Similarly, the OBCs within the Muslims probably suffer more than the Hindu OBCs. Similarly, the STs within the Hindu fold suffer more than their Christian counterparts.

In 2004-05, disparities are also evident in enrolment rate between **religious groups**. The GER for the Hindus, the Muslims, the Christians, the Sikhs, and the Others stood at 11.9, 6.84, 16.68, about 12, and 15.4 percentage points respectively. Thus, the GER was the lowest among the Muslims followed by the Hindus.

Also, there are wide **gender** disparities in terms of access to higher education. Access is generally lower for girls as compared to the boys – the GER being 12.42 per cent for the males and 9.11 per cent for the females. It needs to be recognized that although the enrolment rate are generally lower for the females compared to the males; the females belonging to the lower castes and some religious groups suffer more acutely in accessing higher education than other female. For instance, in 2004-05, as against the overall average of 9.11 per cent, GER among the females was 4.76%, 4.43%, 6.60%, and 19.53 % points respectively for the ST, the SC, the OBC, and the Other females. Thus, the GER among the ST/SC females was about five times and that of the OBC females about three times less compared to the higher caste females.

In the case of **religious groups**, the Muslim women seem to be facing the most difficult circumstance. The GER among Muslim females was 5.8 per cent compared to 9.32 per cent for Hindu females, 12.7 per cent for Sikh females, and 16 per cent for Christian females.

Lastly, there are perceivable differences in enrolment rates among the **poor and non-poor** (irrespective of their caste, ethnic, religious, or gender backgrounds). The GER for the poor was 2.21 per cent as against 12.36 per cent for the non-poor. Therefore, the GER among the poor was almost twelve times lower compared with the non-poor. In the rural and the urban areas, the GER for the poor stood at 1.40 per cent and 4 per cent respectively, which was evidently quite low compared with 7.12 per cent and 27.15 per cent for non-poor respectively.

Within the poor households, however, the GER was the lowest among the poor households belonging to the STs and the SCs, followed by the OBCs and the others. The GER for poor belonging to the STs, the SCs, the OBCs, and the Others stood at 1.55 %, 1.89 %, 2.30 %, and 3.58% respectively. In the rural areas, the GER was the lowest among the STs at a marginal level of 1.11 per cent followed by the SCs at 1.35 per cent, the OBCs at 1.13 per cent, and the Others at 1.66 per cent – the overall GER being 1.30 per cent.

In the urban areas, the GER for the urban poor stood at 3.86, 4.78, 5.16, and 7 percentage points respectively for the SCs, the STs, the OBCs, and the Others – the average being 5.51 per cent.

Differences in the GER are also equally evident across **occupational groups** in the rural and the urban areas. The GER was 3 per cent for non-farm wage laborers and 1.41 per cent for farm wage labourers. Similarly, in the urban areas, the GER was only 3.26 per cent for casual labourers. Thus, both in the rural and the urban areas, the enrolment rates for wage (casual) laborers were the lowest, particularly, for the farm wage laborers.

For the wage laborers, the GER was particularly low amongst the SC/STs compared with the Others. For instance, as against 1.41 per cent at overall level for the wage labourers in the rural areas; the ratio was 0.67, 1.63, 1.16, and 1.93 percentage points for the ST, the SC, the OBC, and the Other wage labourers respectively. Similarly, in the urban areas, the GER for casual labourers was 3.26 per cent at overall level as against 1.53 %, 2.61 %, 3.34 %, and 4.30 % for the ST, the SC, the OBC, and Other wage labourers respectively.

In other words, although the enrolment rates are the lowest among the poor casual wage labourer households in the rural and the urban areas; the rate are particularly low among the poor from the same group, and belonging to the SC/ST/OBCs. The enrolment rates for the ST, the SC, and the OBC agricultural labourers stood at 0.9%, 0.01 %, and 0.93% respectively. Similarly, the enrolment rates for the casual non-farm wage labourers in the

rural areas stood at nil for the STs and the SCs and 0.52 per cent for the OBCs. In the urban areas, the enrolment rates for the poor casual labourers work out to 0.66 per cent for the STs, 2.61 per cent for the SCs, and 3.92 per cent for the OBCs.

The 11th Five Year Plan recognized the problem of multiple natures of disparities in enrolment rate and proposed policy measures to enhance their access to higher education. It brought the inclusiveness in higher education at the centre of our higher education policy. Inclusive education essentially requires an increased access to higher education to these multiple groups who suffers from lower access to higher education. The approach and strategy thus, formulates policies and schemes for the STs, the SCs, the OBCs, girls, minorities particularly the Muslims, physically challenged persons, semi-nomadic and de-notified and the poor.

Inclusive Education Policies

The 11th Plan proposed number of measures for inclusive education.

Firstly, the Plan proposes to support Universities and colleges located in 373 districts having lower GER and also envisage under the Prime Minister Dr. Manomhan Singh's initiative to open new colleges in these districts with matching contributions from the States.

Secondly, it proposes special support to Universities and colleges located in rural, hilly, remote, tribal, and border areas. Further, about 90 districts concentrated with Muslim population have been identified for Central support.

Thirdly, the Plan also proposes enhanced support to Universities and colleges with a high concentration of the student belonging to SC/ST/OBCs, and Muslim population.

Fourthly, the plan focused on developing schemes to improve language and competency through remedial coaching classes. Besides, the Plan specifically emphasizes on augmenting fellowship and opening up of hostels, particularly for women to enhance their access to higher education.

Further, opening up of new Polytechnics in un-served districts, 500 new community Polytechnics, new 210 community colleges, and various other programmes of the UGC in the ongoing schemes will help to include the excluded social groups.

The setting up of 30 Central Universities under initiative by Prime Minister Dr. Manmohan Singh has a strong component of inclusiveness in so far as it will offer affordable access with due share to the SC, ST, and OBCs.

The implementation of the Oversight Committee's recommendations and the Sachar Committee recommendations will also facilitate enhanced access of the OBCs and the Muslims to institutions of higher education. Thus, inclusiveness has a definite strand of thought as well as action in the 11th Five Year Plan.

An important aspect of inclusiveness is affordability. Without affordability, it is not possible to increase access and promote inclusiveness. Thus, affordability will have to be ensured through special measures. The 11th Five Year Plan makes provisions for the disbursement of scholarships for 2 per cent of the total students along with Education Loan Interest Subsidy through Higher Education Loan Guarantee Authority. Further, there are provisions for research fellowships for NET and non-NET qualified PhD students.

Above all the 11th Plan had developed a scheme under which a separate Cell, "Equal Opportunity Office" will be set up in universities to operate all schemes for SC,ST,OBC, Girls, Minority student, physically challenge students, semi-nomadic and de-notified and other weaker section students under one umbrella office.

Status of Quality and Excellence

The third issue that the studies in this volume addressed relates to the issue of quality of higher education system. What is the status of university and college education with respect to quality and excellence?

The UGC drew a distinction between quality and excellence and used separate indicators to judge and promote quality and excellence through grant giving mechanism. The UGC provide grants to those universities and colleges, which meet minimum standard.

For recognizing and promoting excellence UGC developed the concept of university with potential for excellence, college with potential of excellence, department/center with potential for excellence. It also included concept of Autonomous colleges.

Beside National Assessment and Accreditation Council is constantly involved in quality assessment of universities /colleges and grade them.

What is status of quality? By March 2008, there were about 20,676 colleges in the country, of which about 16,000 come under UGC's purview. This accounts for about 80 per cent of the total colleges in the country. Of the total colleges under the purview of the UGC, about 40 per cent or 5,813 receive UGC grants as they meet the minimum standards defined by the UGC.

What is the status of excellence? Currently the UGC has recognized about 9 universities with potential of excellence, 100 colleges with potential of excellence, about 250 colleges are recognized as autonomous colleges and about 500 department/centre are recognized as centers of excellence.

As mentioned above the National Assessment and Accreditation Council (NAAC) is also involved in the assessment of quality and accreditation of the universities and colleges. In 2006, about 3,411 colleges had been accredited by the NAAC – equivalent to about 57 per cent of the colleges covered under the UGC grants (that is, 5,813). This accounts for about 24 per cent of the total colleges (that is, 16,000), which fall under the purview of the UGC.

As on date there are about 417 Universities – of these about 140 have been assessed and accredited by the NAAC. Of these, 140 sample Universities, 31 per cent were graded 'A', 61 per cent were graded 'B', and 7 per cent were graded 'C' in that order. (table 6(a))

It is important to note that of the total colleges accredited by the NAAC till date (that is, 3,492) about 9 per cent were graded 'A', 68 per cent were graded 'B', and the remaining 23 per cent were graded 'C'. Therefore, the bulk of them or about 68 per cent were graded either 'B' or 'C'.(table 6 (b)

What are the reasons for inter-University and inter-college variations in quality of education ? Furqan Quamar and S.Sinha have examined the reasons for the inter-institution variations in quality in the studies sponsored by UGC

Analysis of about 111 Universities and 3,492 colleges assessed by the NAAC indicates that the deficiencies in availability of human resources in terms of quantity and quality teachers and physical and other infrastructural facilities caused qualitative gaps between 'A' and 'C' grade Universities and colleges.(see table 6 (a) and 6 (b).

The percentage of colleges with libraries, computer centers, health centers, sport facilities, hostels, guest houses, teacher's housing, canteens, common rooms, welfare schemes, gymnasiums, auditoriums, and seminar rooms are much higher in case of high quality colleges as compared with the low quality ones.

Similarly, high quality colleges are better placed with regard to academic indicators, which include higher student-teacher ratios, number of permanent teachers or teachers with PhD degrees, books per student, books and journals per college, and students per computers etc. Thus, if 36 per cent of low quality colleges are to be brought at parity with high quality ones; a substantial improvement in the physical and academic infrastructure is necessary.

In case of Universities, those graded 'A' generally perform better with respect to a number of indicators, which include number of departments, numbers of faculties with PhD degrees, number of faculty members per department, and number of books in the libraries etc.

Table 6 (a) Quality Gap –Factor Associated with Quality in Universities

Parameters	Average of All Universities	Benchmarks (as in A Grade Universities)	Quality Gap
Number of Departments Per University	29	34	5
Number of Sanctioned Faculty Positions per university	287	432	145
Number of filled up faculty position per university	220	329	109
% of faculty positions vacant	25%	0	0
Number of Faculty members with PhD	158	432	274
Number of Teachers per Department per University	8	10	2
Number of Books in Library	288,913	352,886	63973
Total No. of Computers per	6	11	5

Source – Based on the paper by Furqan Quamar and S.Sinha, 2007

Table 6 (b) Quality Gaps -Factors Associated Quality in Colleges

	Average of All Colleges	Benchmark	Quality Gaps
Student Teacher ratio (STR)	27	20	-6
STR by Permanent teachers	33	30	-3
Total No. of Teachers per college	47	78	31
Total number of Permanent Teachers per college	39	54	15
Total number of other Teacher	9	25	16
Proportion of Teachers without M.Phil or PhD	57%	0	57%
No of Books per college	11966	15215	3249
No. of Journals per college	13	22	9
Students per Computer	229	145	-84

Source – Based on the paper by Furqan Quamar and S.Sinha, 2007

Policy for promotion of quality and Excellence

The 11th plan recognized the issue of quality. It has brought a sharp focus on the promotion of quality and excellence. The Plan recognizes that quality in higher education is critically incumbent on a) physical infrastructure, b) Number and quality of teachers, and c) academic governance in Universities and colleges.

The 11th Five Year Plan includes a number of initiatives. These include firstly, improvement in Physical infrastructural facilities; availability of adequate and quality faculty, and Academic Reforms with respect to Admission, teaching and Examination and other academic aspects

Physical Infrastructure

The policy for improving physical infrastructure includes increase in general development grants on existing schemes by substantial margin. This will induce a substantial improvement in the physical infrastructure.

However in view of the insights from the studies the 11th Plan has proposed two important initiatives. These two schemes include a) Bridging the quality Gap between A and C grade universities and colleges and b) Covering Un-covered universities and colleges under UGC grants.

The studies indicate that C grade universities and colleges essentially lack in number of essential physical infrastructure. Therefore a schemes is proposed to provide financial assistance to the C grade universities and colleges to improve their infrastructure under the 'Bridging Quality Gap Scheme'.

The second issue relates to problem of the State Universities and colleges, which at present are not covered under the UGC grants. The 11th Plan proposed a scheme namely "Covering Uncovered Universities and colleges". Under this scheme the uncovered colleges and universities will be provided one time grants to improve their physical and human resource infrastructure to a level where by they become eligible for UGC grants.

Both the schemes involve provision of one time Central assistance on matching contribution from the respective government in the case of state universities and Central universities, and from the management of the college, in case of colleges.

Faculty Improvement

The 11th Plan recognized that the availability of adequate and qualified faculty is a pre-requisite for quality education. It also recognized that due to restrictions on the recruitment of the faculty in the state universities and colleges in 1980's and 1990's by various states, we face a serious problems related to the availability of the faculty. Due to restrictions on recruitment, the universities and colleges have resorted to temporary and adhoc faculty We don't have reliable data on the magnitude of the temporary faculty in colleges and universities. The sample data collected by UGC indicate that about one –third of university faculty is adhoc/ temporary and on contract.

The study done by Pay Review Committee (PRC), by G.K. Chadha, Sudhanshu Bhushan and Murlidhar based on sample of 47 universities from 19 states, and 1401 colleges bring out the situation about the faculty.

Table – 7 (a): Vacant Positions of Teachers in Sample Universities (Academic Session 2007-08)

	Total Sanctioned	Total Filled	Total Vacant	% Vacancy	No. of sample university
Prof	2469	1367	1102	44.63	45
Reader	4506	2194	2312	51.31	46
Lecturer	9604	4503	5101	53.11	44
Total	16579	8064	8515	51.36	

The state universities show a very depressing scenario, for all positions; the overall level of vacant positions is 58 per cent, and it is much higher at the level of Lecturers and Readers. In as much as around 90% of students in university departments are enrolled in state universities, such a high incidence of vacant positions is sure to be making a damaging effect on the quantity as well as quality of teaching and research in universities in general and state universities in particular observed the PRC study. Among the deemed universities, nearly one-third of vacancies are lying unfilled.

The situation is equally, if not more, grim for colleges (Table 7 (b)). No fewer than 41.0 per cent of positions at the Lecturer level, and 18.0 per cent of those at the Reader level, are lying unfilled. The situation in non-aided colleges is far more distressing, in this regard. As many as 52.0 per cent of vacancies at the entry level and 42.0 per cent of vacancies at the level of Readers are lying unfilled. Nearly 42.0 per cent of entry-level positions are vacant in government colleges against 40.0 per cent in government aided colleges, while, the corresponding figures for the Reader-level positions are 19.0 per cent and 16.0 per cent, respectively.

Table – 7(b): Vacant Positions of teachers in Sample Colleges (Academic Session: 2007-08)

	Readers				Lecturers			
	Number of Sample Colleges	Sanctioned	Vacant	%	Number of Sample Colleges	Sanctioned	Vacant	%
Govt	179	1779	333	19	340	6101	2571	42
Aided	171	2018	317	16	609	12346	4988	40
Non-aided	9	150	42	28	36	814	423	52
Total	359	3947	692	18	985	19261	7982	41

Shortage of teachers has led to employment of part time or ad hoc teachers. The ratio of part time lecturers to regular lecturers is 0.24, for all types of universities put together, 0.32 for state, and 0.20 for deemed universities. In state universities, there is one part-time or ad hoc teacher for every three regular lecturers, and one such lecturer for every five regular lecturer in deemed universities. Likewise in colleges, out of 100 lecturers, there were 38 part-time contract lecturers. In the government-aided colleges, the incidence of contract lecturer was the highest.

The Pay Review Committee Report observed

"that the over all situations is rather alarming. Teachers in the universities and colleges generate and disseminate knowledge through organic linkages with each other as also with the students through a facilitating physical and academic environment. There should be a tolerable zone of vacancies, preferably within 5 to 10 per cent of the sanctioned strength. ---The ambitious plans of expanding the higher education sector during the Eleventh Plan would remain substantially unfulfilled if the supply of teachers does not match the expanding demand for them. The PRC firmly believes that all-out efforts to liquidate the existing stock of

vacancies, through attractive pay packages and better working/service conditions, is the most essential first step. In particular, it is high time that many of the State governments which are reported to have been clamping embargo from time to time, under different pretexts, most noticeably the resource crunch, on filling up the sanctioned vacancies, need to review their 'close-fist' policy, in their own interest. --- is an inescapable policy step, to reduce the supply-demand gaps."

The 11th plan recognized the problem of faculty in the universities and colleges and initiated policy measures both of short and medium term nature.

The short term measures include few steps. It includes increase in the retirement age up to 65 years which has been already done by the Ministry of Human Resource Development. The states are expected to follow up so that in coming five years we are able to meet the problem partially. It also includes removing the restrictions on the recruitment of faculty by the state and filling of the vacant post. Several states have now relaxed the restrictions and taken steps to fill the teaching post in colleges sand universities

The medium term steps include number of measures. The important among them is the increase in the number of research fellowships for M Phil and PhD and Post –Doctoral Program to create potential faculty for universities and colleges. The number of fellowships and amount through National Eligibility Test (NET) has been increased. Similarly the fellowship through Non-NET has been increasing. For instance all M Phil and PhD non -fellowship holders in Central universities are given fellowship of Rs 3000 and Rs 5000 per month respectively. Similarly fellowships are given to sciences students in Department/Centre with special assistance program in state universities and central universities, Autonomous colleges and colleges with potential for excellence. The other fellowships include Rajiv Gandhi Fellowship for SC and ST students. Yet other initiative include two Post –Doctoral fellowship, namely Kothari Post Doctoral Fellowships in sciences and Radhakrishnan Post-Doctoral fellowship in social sciences.

In the science there is special initiative which is undertaken by the Empowerment Committee. This includes Ph.D. fellowships and Kothari Post Doctoral Fellowships which is mentioned above. Beside the Empowered Committee also introduced Operation Faculty Re-Charge Scheme' for 1000 faculty members. The PhD, Post – Doctoral and Re-Charge Scheme will create supply of potential faculty in medium- term.

The Pay Review Committee has addressed the issue of attracting talent in teaching profession by recommending improved salary structure and service condition.

All these measure are expected to increase the supply of faculty for the universities and colleges in medium term.

The UGC has also proposed schemes to increase the involvement of researchers, scientists and academicians from outside university system in teaching and research in universities/colleges in various ways. This also include schemes to attract and facilitate the Indian academic working in universities out side India as well the foreign academic working on India to participate in teaching and research on flexible terms and conditions.

Policy for Assessment and Accreditation

At present assessment and accreditation of universities and colleges is voluntary. The 11th plan has recommended the policy of compulsory assessment and accreditation. In view of this the UGC is developing a procedure to introduce mandatory assessment and accreditation for universities and colleges. Towards that end UGC has also approved a scheme for establishment of Quality Assessment Cell in universities and colleges for

regular internal self assessment and self monitoring of quality and excellence. Both steps will help to present an all India quality map of the universities and colleges.

Quality and Excellence linkages

The UGC recognizes the difference between quality and excellence. It recognized that excellence may not be enhanced without quality education in the vast institutions of higher learning, namely the universities and colleges. If only 9 universities and 100 colleges are recognized as potential for excellence and only 520 centers/departments have been identified as those with various level of excellence, it is because the universities and colleges suffer from the lack of adequate academic and physical infrastructure. This implies that a focus on improving the academic and physical infrastructure for quality improvement is pre-condition. It is the presence of quality institutions which will generate and induce excellence in terms of creativity and innovativeness among the teachers and students. Excellence cannot be imposed from above. Good quality institutions lead to emergence of excellence in terms of creativity and innovativeness. In other words, without quality the excellence will not emerge and grow. The Quality education, at the college and university level, serves as a ground for excellence to grow. The university and college education system serves as a catchments area for some quality centers/departments to emerge as centres of excellence. If the quality of the university and college education is neglected, it will have limited potential for growth of excellence in terms of creativity and innovativeness.

Quality and inclusiveness

There is another aspect related to quality which needs to be borne in mind. In the 11th Plan the goal is expansion with inclusive and quality education. The expansion with inclusiveness essentially means that increase in enrolment will have to come from the groups whose GER is low. The studies in this volume indicate that these include groups such as schedule tribe, scheduled caste, semi-nomadic and de-notified tribes, women, religious minorities like Muslims, low caste covert to Islam, (SC and OBC Muslim) Buddhism, (Neo-Buddhist) Sikhism,(SC Sikh) Christianity (Dalit Christian) and poor in general, particularly from the rural areas.

To provide quality education to these sections which constitute bulk of those with lower access to higher education is an issue which the 11th Plan recognized. However, an improved access to quality education will require special attention for improvement in the language skills and other capabilities (to those who need), so that they are able to cope up with learning in the universities and colleges. Therefore quality improvement programs will be necessary for them. The issue of quality education cannot be de-linked from that of inclusiveness. Therefore, as mentioned above number of steps are proposed in the 11th plan, including setting up of Equal Opportunity Office to deal with all schemes for these social groups. These will help to promote inclusive education with quality.

Quality and Academic and Administrative Reforms of University and College System

Another important constituent for improvement of quality in higher education is the initiative for academic and administrative reforms in universities and colleges education system. The 11th plan recognized the need to introduce the academic reform in the university and college system. The academic reform necessarily includes changes in admission procedures in various courses; modification in assessment and examination methods; switch over from annual to semester systems; acceptance of grade and credit system; teachers assessments; and other related reforms.

It is now recognized that the admission to various courses as far as possible be made through written test and viva, particularly for M Phil and PhD, and be transparent in nature, with due regard to the government policy of

reservation. There is also advantage and hence need to switch over to semester system from the annual cycle of examination system, wherever possible. Equally important is the changes in the examination and assessment of the students. It is realized that there is a need to bring a major component of internal assessment through tutorial, essay writing, seminar and presentation by students and subsequent reduction in the written component. Similarly there is need to adopt credit system with credit accumulation. The UGC had written to the various universities about needs of these academic reforms. Number of universities have welcome these reforms.

Other Reforms

The 11th Plan has also expressed the need to go for reform of higher education system in other spheres as well. The other important initiatives include reforms of affiliating systems; preparing frameworks for public-private partnerships; rationalization of fee structures; regulation of deemed Universities; rationalization of admission and fee structures of deemed universities; regulatory frameworks for collaboration by Universities and colleges with Universities and institutions in other countries with respect to dual degree arrangements; sharing of courses; credit transfers; and sharing of teaching, etc. The UGC has set up various Committees on these reforms. The reports of some of them have been all ready finalized.

Promotion of Relevant Education

In the 11th Five Year Plan there is a huge initiative for the promotion of relevant education. The Plan recognized that relevant education will involve not only providing knowledge (as it exists at given point of time) to the students but also the various skills associated with the subjects. Therefore UGC has undertaken exercise to take a stock of the present curriculum at various level of higher education and set up a Committee under the Chairmanship of Professor Yash Pal to come with a framework. In the spheres of vocational and technical education huge initiative has been taken by the Ministry of Human Resource Development through expansion of vocational and technical education. This includes creation of 8 new IITs, 20 NITs, 20 IIITs, 3 IISERs, 7 IIMs, 2 SPAs, new Polytechnics in un-served districts, 500 new community Polytechnics, and 210 new community colleges. This will help to expand the intake capacity of existing vocational and technical institutions in public sectors. The UGC has also taken initiative to introduce the concept of Community College in general education.

Inter-University Centre for Research, Policy and Monitoring of Higher Education (UGC).

A Committee set up by UGC under the chairmanship of Professor Tapas Mazumdar has recommended the need to set up Institution for Research, Policy and Monitoring of Higher Education**.** The Committee observed that planning and monitoring of the vast and one of the largest higher education system in the world comprising over 450 universities, more than 20,000 colleges, several other non-degree educational institutions, the larger Distance education system serving vast section of student community across the country, also involving more than five lakh teachers and about 16 millions students require proper data and information base and study on multiple aspects. The lack of institution of proper dimension has constrained out capacity to develop well grounded policies and programs. It therefore recommended setting up such Institute.

Among other things, the purpose of this Inter-University Centre will be to build up a data base on all aspects of higher education, assess and monitor the schemes to assist UGC in grant making policies. Also through constant research and assessment it will help develop policies, schemes and give feedback and advice to ministry and also to universities and colleges on number of issues on a regular basis.

It will have divisions related to Finance, Fee and loan, Quality and Excellence, Curricula monitoring, Equal opportunity, Governance, Examination system, admission methods, Private sector Role, International aspect of higher education and other related issues. It will be an autonomous body but provide support to UGC and to the government on regular basis.

Financing of Higher Education

Past Trends

Two studies in this volume, one by Sudhanshu Bhushan and another by Ravi Srivastva examined the issues related to financing and brought useful insights on the situation with respect to finances in higher education. Ravi Srivastva's paper worked out the financial requirement of enrolment target of 15% during the 11th Plan. These two papers analyzed the trends in total public expenditure on higher education by the centre and the states, including the trend in the per –student expenditure on higher education.

Of the two levels of government, the bulk of expenditure on education comes from the state governments, although the Centre shares a greater proportion of the expenditure on higher education. The share of the Central government in total expenditure declined from 24.7 % during 1970-71 to 1980-81 to 21.1 % during 1981-82 to 1991-92 % and further to 20.3 % during 1992-93 to 2003-04.

The share of the government's development spending on education can be estimated by its **plan** spending. There has been a steady decline in the percentage of plan spending to total spending by both Central and state governments – from 23.2 during 1970-71 to 1980-81 to 19.2 during 1981-82 to 1991-92 and further to 16.6 during 1992-93 to 2003-04.

Table 8: Public Expenditure on higher education as share of total expenditure on total Education

	State	Centre	Total
1952-1961	9.3	20.7	10.6
1962-1971	8.9	40.3	11.8
1972-1981	11.5	47.9	14.0
1982-1992	12.2	36.2	14.2
1993-2004	11.4	23.3	12.7

As far as Central government is concerned, the share of higher education in its total expenditure on education was well over 40 percent between 1960-61 and 1985-86 but has been below 20 percent after 2000-01. The share of higher education in the states' spending on higher education has, however, fluctuated between 9 and 12 percent, reaching an average of 12.2 percent during 1982-1992. The share of higher education in total education expenditure of both Central and State governments rose to 14.2 percent during 1981-82 to 1991-92, but fell to 12.7 percent during 1992-93 to 2003-04. Thus by all accounts, the relative priority given to higher education declined after 1992-93.

Figure 1

Both total education and higher education grew at the highest rate in the first two decades (1951-1971) and decelerated sharply during the 1970s. During 1982-83/1992-93, and 1992-93/2003-04 the Central government again stepped up the rate of growth of expenditure on both total and higher education. However, the states' expenditure on education experienced a lower growth rate, particularly during the last period. As a result, as far as higher education is concerned, the rate of growth of public expenditure has continued to fall during every successive decade, and for both total and higher education, the rate of growth of expenditure was lower in the post-reform period as compared to the preceding decade.

Figure 2
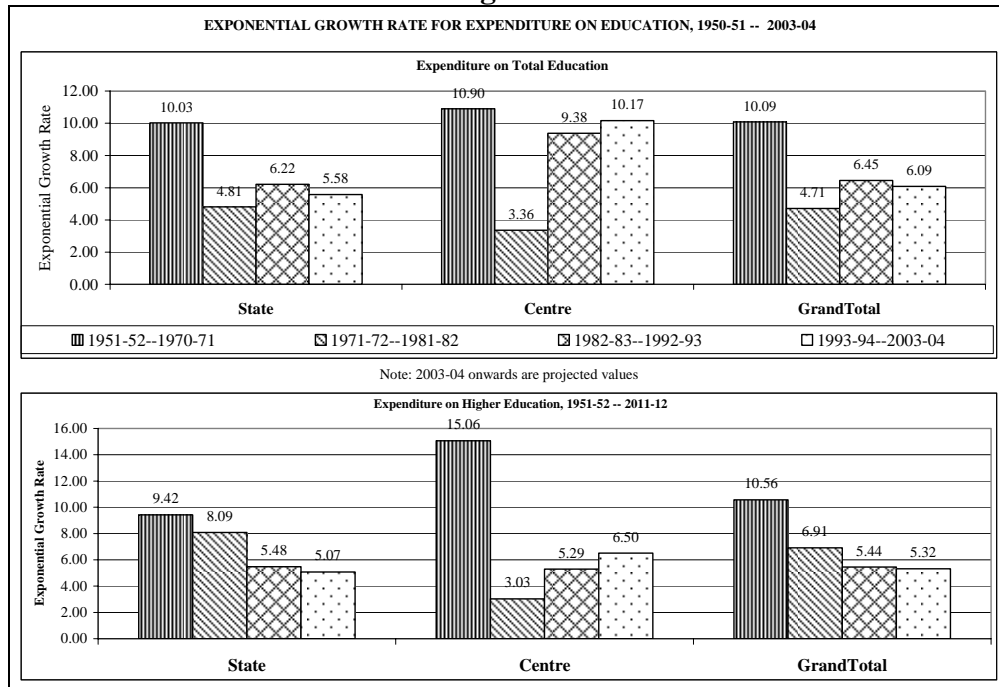
The rate of growth of expenditure on total as well as higher education was significantly higher than the rate of growth of national income in the first two decades. Total educational expenditure continued to be higher than the growth of national income till the beginning of the reform period. However, expenditure on higher education as a percentage of GDP showed an upward trend till the 1970s but plateaued thereafter.

Both total expenditure on education and higher education increased as a percentage of GDP till the 1980s. There was an upward movement in the total education expenditure to GDP ratios during 1987-88 to 1988-00 and then a decade later in response to pay commission awards, but abstracting from these, the expenditure to GDP ratio has remained virtually constant. In the case of higher education, expenditure to GDP ratios were 0.43 percent on average during the 1980s and also during 1992-93 to 2003-04. Thus despite various pronouncements, the state have not been able to increase the expenditure/GDP ratio for education.

The increase in the public expenditure has also lagged behind the increase in the student enrolment. Enrolment in higher education has been expanding at a rapid pace, even as the tempo of public expenditure has not been maintained. Particularly in the reform phase since 1992-93, the increase in real expenditure has lagged behind the rate of increase in student enrolment in general education. As a result, during this phase, the rate of growth in per student expenditure has been negative. Per student public expenditure has registered a negative rate of growth both for Central as well as State expenditure. Overall, per student expenditure has declined at a rate of 2.4 percent since 1992-93. The average real expenditure on higher education per enrolled student declined from Rs 8322 in the period 1981-82 to 1991-92 to Rs. 6790 in the period 1992-93 to 2003-04.

EXPENDITURE ON EDUCATION AS PERCENTAGE TO GDP 1951-52 to 2003-2004
(GDP for 2002-03 are provisional and 2003-04 quick estimates)
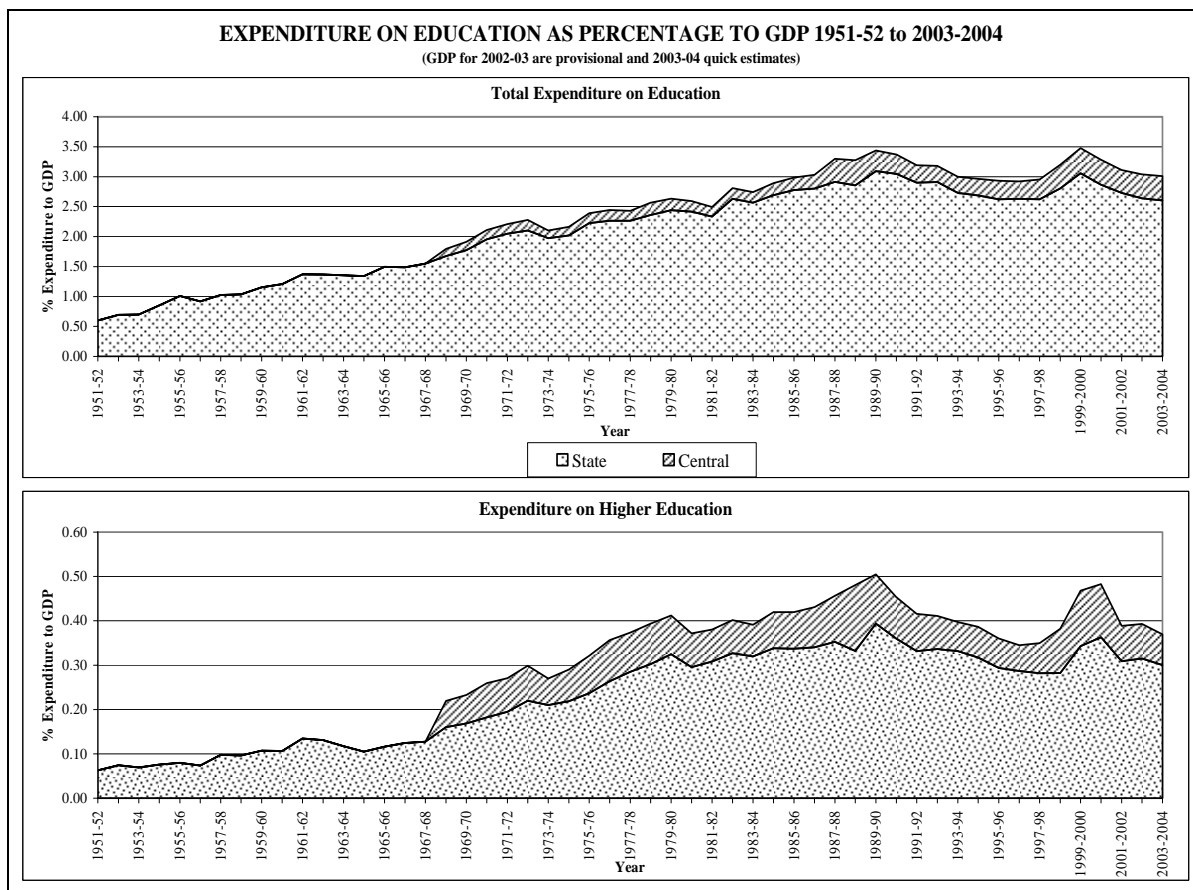
To sum up the past trends in the public expenditure on the higher education, Ravi Srivastva's analysis argued for reversal of the trend. It revealed that public expenditure on higher education grew at a very rapid rate till the early 1970s but continued to exceed the rate of growth of national income till the mid-1980s. As a result, the share of public expenditure in higher education to GDP rose in this period. Thereafter, the trend is towards stagnancy or decline. The most noticeable feature is a decline in per student real expenditure on higher education in the period after 1992-93. Per student expenditures on higher education were low in India to begin with. With the modernization of education, these should have grown at a higher rate to provide infrastructural support of the necessary quality. This, however, did not happen.

Financial Requirements for Higher Education

Ravi Srivastva has estimated the requirement of public expenditure in order to achieve a target increase of 5 percent in Gross Enrolment rate during the 11the five year plan under different scenarios. (for detail see Ravi Sriwastva's papers in the volume). A projection of the enrolment data of the Selected Education Statistic for 2006-07 shows that the total reported student intake in 2006-07 is likely to be 1.28 crores (GER: 9.7 percent), with the intake of students in the general stream (including B. Ed.) being 1.04 crores.

Figure 4
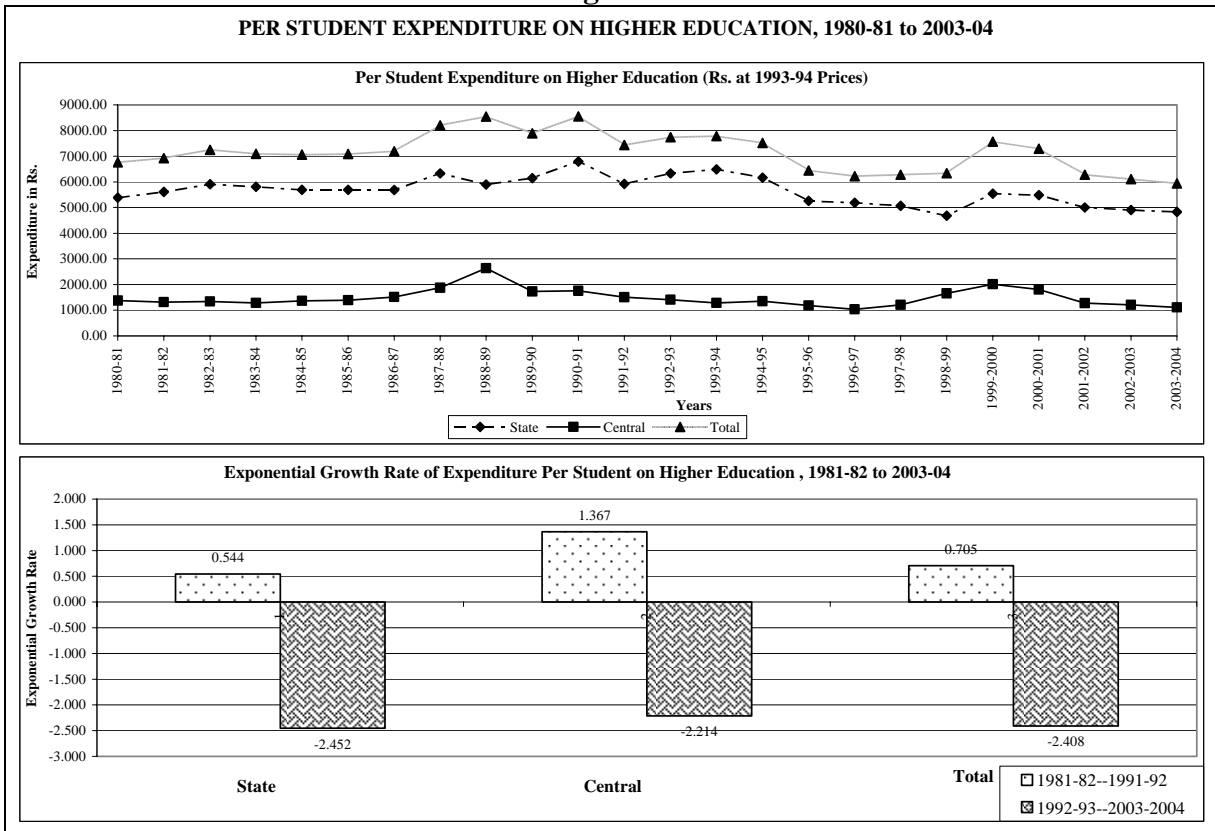
Normative requirements of recurrent expenditure to meet quality standards, and non-recurrent expenditure to cater to expansion of capacity are difficult to come by. The paper has used the norms developed by a High Power Committee set up by the Central government (the Oversight Committee) and a sub-group of the Committee on Central Universities. The paper builds two different scenarios based on SES data to form the basis of the estimates of public financing for the Eleventh Plan.

Based on the recurrent expenditure of Rs 26250 per student. the additional public expenditure for entire 11th plan period will come around to Rs 77,779 corers. As percentage of GDP, the total outlay on higher education will increase from 0.65% to 1.06%.

The estimates, based on a mark-up over existing recurring costs with recurrent expenditure of Rs 21200 per student, show that the total additional outlay required for achieving the enrolment targets will be about Rs 47,362 crores. As a percentage of GDP, the total outlay on higher education will increase from 0.59% to 0.79 %.

In addition, the government has already committed itself to a considerable increase in investment in Centrally funded institutions in order to make them socially inclusive. The likely costs to meet this requirement could be about Rs. 3260 crores or only about 0.02 percent of GDP.

Table 9: Projected Enrolment (in 000) based on SES with a Target of Five Percent Increase in GER

Year	Academic Year	Pop 18-23	Total Higher Education	Total GER	Addl. Total Enrolment	Share of Tech in Total Enr (%)	Tot Tech & Prof Ed	Tot Gen	Addl General Enrolment
	Base Year								
2006	2006-07	132243	12817	9.7		0.20	2418	10399	
	11 th Plan								
2007	2007-08	135440	13950	10.3	1133	0.22	3069	10881	482
2008	2008-09	138318	15353	11.1	1403	0.24	3685	11669	787
2009	2009-10	141257	17092	12.1	1739	0.26	4444	12648	980
2010	2010-11	144259	19186	13.3	2094	0.28	5372	13814	1166
2011	2011-12	144287	21210	14.7	2024	0.30	6363	14847	1033
					8393				4448

Source: Projections based on SES data; assuming a 5 percent increase in GER and an increase in share of technical and professional education from 20 to 30 percent.

The norm based estimate that the author has made shows that the cost of higher education will exceed 1 % of GDP in the final year. The recommendations of the Oversight Committee are over and above this expenditure.

Table 10:Estimate of Additional Requirement (Rs. 000 crore)

Year	Enrolment in General Education (000)	Total trend based State exp + Central Non-Plan	GDP Factor Cost	Based on recurrent expenditure of Rs. 26,250 per student			Based on recurrent exp. Of Rs. 21,200 per student		
				Total estimated expenditure	Additional Outlay Required	Additional Outlay as % of GDP	Total estimated expenditure	Additional Outlay Required	Additional Outlay as % of GDP
2006-07	10399								
11th Plan									
2007-08	482	13707	2958686	19181	5474	0.65	17556	3849	0.59
2008-09	787	14588	3195381	24751	10164	0.77	21103	6516	0.66
2009-10	980	15526	3451012	31719	16193	0.92	25797	10271	0.75
2010-11	1166	16525	3727093	37392	20867	1.00	28953	12428	0.78
2011-12	1033	17588	4025260	42716	25127	1.06	31933	14345	0.79
	4448	77933		155712	77779		125296	47362	

Notes: (1) All estimates based on 2006-07 prices (5.5% higher than 2005-06 level) and in Rupees crores
         (2) Non-recurrent exp. At Rs. 40000 per student; (3) GDP growth rate conservatively assumed at 7 percent over 11th Plan period.

11 the Plan and Reversal of the Trends

The 11th plan has recognized the deceleration in the public expenditure on per student basis in real term and emphasized the need to reverse the past trend in allocation of resources to higher education. The Government's commitment to raise public expenditure on higher education by at least 01 per cent of GDP from the existing 0.33 per cent has formed the backbone of the 11th Five Year Plan.

The proposed expansion in higher education as delineated in the 11th Five Year plan is amply testified by the sheer size of the Plan in itself, which is of the order of Rs. 84,943 crores at the current prices as against Rs. 9,500 crores of allocation and actual expenditure of around Rs. 8,000 crores during the 10th Five Year Plan. It is almost a nine fold increase against the allocation for and ten fold increase against the actual expenditure on higher and technical education during the 10th Five Year Plan.

Plan Expenditure in General Higher Education

	Central Plan	State Plan	Total Plan
IX Plan	2272	1724	3996
X Plan	4183	2771	6954
XI Plan	40000	27000*	

* Estimated

Central Plan expenditure went up by 84% from IXth plan to Xth plan. During the same period State Plan expenditure went up by 61%. Central plan expenditure from Xth plan to XIth plan is expected to increase by 10 times. Therefore, state plan expenditure also needs to increase during the same period roughly around 10 times in order to realize the goal of access, equity and quality in higher education.
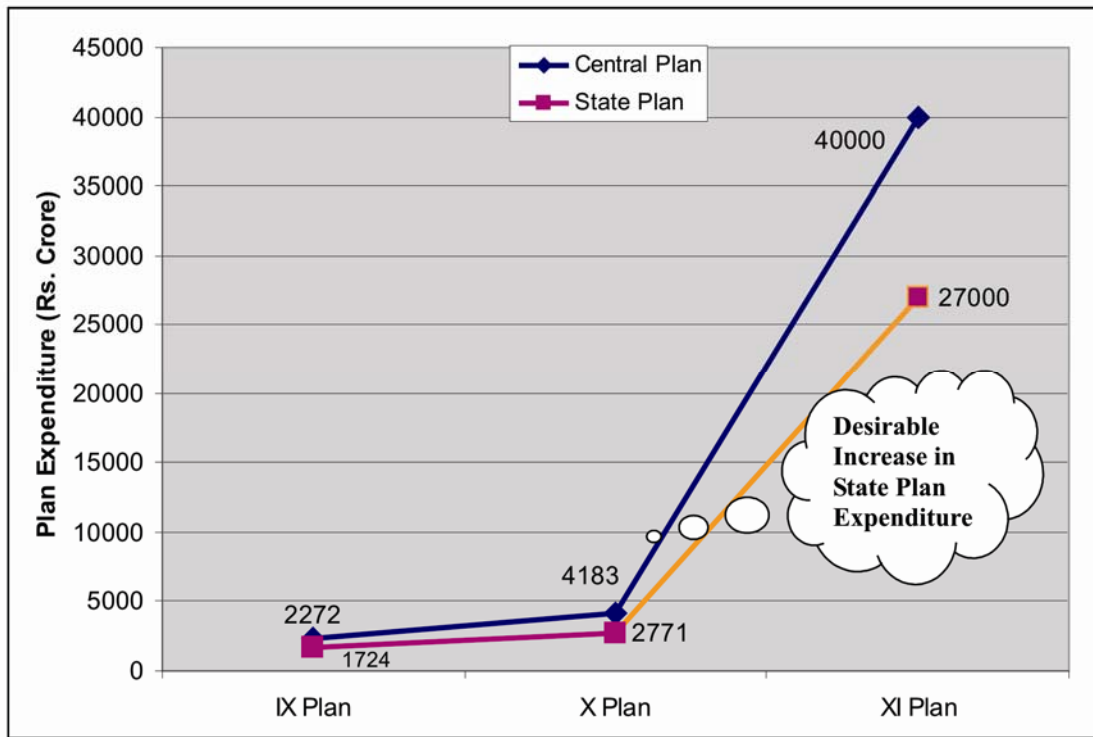
Central plan constitutes approximately 60% of the total plan expenditure in higher education during IXth and Xth plan. If the XIth central plan allocation for general higher education is Rs. 40000 crore then roughly the state government needs to contribute Rs. 27000 crore to realize the objectives of XIth plan.

Concluding observations

In this introductory chapter we have tried to present the outcome of the papers sponsored by UGC to use as source material for the preparation of the UGC Report on Approach and Strategy for Higher Education in the 11th five year Plan. We have also presented the way in which the findings of these studies have helped in developing the approach and strategy of the 11th plan for higher education.

The central objective of the 11th plan is now focused on "Expansion of enrolment in higher education with Inclusiveness, quality, and relevant education and supported by necessary Academic Reforms in the university and college system. These studies have given necessary input in evolving the perspective on each of these objectives.

Since these studies are based on the serious research and examination of official data, the findings in many ways are new and insightful. The finding also presents the emerging issues in higher education system in the country and the possible way out. Since the studies are rich and new in their content the UGC decided to publish them in the form of a report for the use of the academic community. We are hopeful that the central and state government, academic administrator, policy maker, educational institutions, and researchers will find the insights of these studies of use for various purposes.

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Annexure 1(a)

Gross Enrolment Rate -2004-05

Rural, Urban - 2004-05

Total	10.84
Rural	6.74
Urban	19.88

Annexure 1(b)

Gross Enrolment Rate –Male, Female-2004-05

Male	12.42
Female	9.11

Annexure 1(c)

Gross Enrolment Rate by Social Groups-2004-05

Social Groups	Total
ST	6.57
SC	6.52
OBC	8.77
Others	17.22
Total	10.84

Annexure 1 (d)

Gross Enrolment Rate by income level -2004-05

Income Level	Total
Less than 359.1	1.46
359.11 to 461.14	3.37
461.17 to 587.33	4.88
587.38 to 830.44	9.81
More than 830.5	27.43
Total	10.84

*Consumption Expenditure as proxy for income

Annexure 1 (e)

Gross Enrolment Rate by Poor & Non-Poor-2000

	All	
	Graduates	**Total Higher Education**
Poor	1.43	1.68
Non-Poor	9.75	12.67
Total	7.80	10.10

Annexure 1 (f)

Gross Enrolment Rate by Poor & Non-Poor by social -2000

Social Group	Poor	Non-Poor
ST	1.55	9.70
SC	1.89	6.68
OBC	2.30	8.69
OTHERS	3.58	19.73
ALL	2.43	12.81

Annexure 1 (g)

Gross Enrolment Rate for Graduate and above-2004-05

Low		Medium		Above	
State	Total	State	Total	State	Total
Arun Pradesh	3.7	Assam	8.77	Maharashtra	13.14
Meghalaya	4.57	Gujarat	9.83	J&K	13.26
Tripura	5.32	Karnataka	10	Haryana	13.7
Orissa	6.13	WB	10.34	Manipur	14.43
Bihar	6.15	Chhatisgarh	10.61	Goa	14.73
Sikkim	6.17	UP	10.78	Uttaranchal	16.49
Jharkhand	7.27	Total	10.84	HP	17.12
Rajasthan	7.3	AP	12.72	Pondicherry	17.39
MP	7.46	Tamilnadu	13.02	Kerala	18.46
Mizoram	7.87	Punjab	13.09	Nagaland	19.03

Based on NSS Data –Employment and Unemployment Survey -2004/5

Annexure 1(h)

Eligible Enrolment Ratio -2004-05

Total, rural & Urban

Total	52.61
Rural	47.49
Urban	57.1

Male & Female

Male	55.63
Female	48.58

Social Groups

Social Groups	Total
ST	61.5
SC	51.21
OBC	50.05
Others	53.9
Total	52.61

Chapter 1

Enrolment Forecast of Higher Education for Inclusive Growth in the 11th Five Year Plan

P. Duraisamy

Since Independence in 1947 there has been a significant expansion in higher education. However despite the tremendous growth in higher education since independence, the achievement in terms of Gross Enrolment Ratio (GER), which is a measure of the population in the relevant age group attending higher education institutions, is very low. According to the Planning Commission 10 % of the relevant age group of population attend Universities/colleges compared to 20-25% enrolment in many developing countries.

Even as the low GER is a matter of concern, another serious issue is the inequality in GER across social groups. Thorat (2006a, 2006b), based on National Sample Survey (NSS) data 1999-2000, shows that while the overall GER in higher education is about 10%, the GER for SCs, STs and other backward classes is only 6-7%, compared to 17% for others. Similarly, the GER is lower for girls (8%) compared to boys (12%). In terms of religious groups, the GER for Muslims are 5.2% compared to 10.4% for Hindus, 11.2% for Sikhs and 18.6% for Christians and other religious groups.

In this context, it is crucial to know the current status and the expected future trends in enrolment for devising effective programmes and policies in the 11th plan. The important questions that warrant attention are: What is the current level of gross enrolment rate (GER) in higher education in India? What would be the projected enrolment (historical growth rate) if the current policies and programmes continue? What is the gap in GER between social groups such as women, SCs, STs, and across religious groups? How much additional enrolment is required during the 11th Plan period to narrow the gap between the marginalised groups? This paper addresses these questions.

For this purpose we examine the available data on enrolment in higher education and forecasts are made based on econometric framework. We are not aware of any study on enrolment forecast in the Indian context. The projections reported in this work will not only provide some guidelines for 11th Plan programmes and policies but also encourage further work on higher education enrolment forecasts. The study is mainly based on official statistics compiled and published by the Ministry of Human Resource development (MHRD) titled 'Selected Educational Statistics' and the UGC's 'University Development Statistics'.

The rest of the discussion is organized as follows: The following section, Section II, presents the current scenario in respect of access to higher education. The trends and growth in educational institutions are examined. Section III analyses the variation in enrolment rate across alternative sources of data. Section IV describes the forecasting model and the projections in enrolment for the 11th plan period. Section V provides the

proposed enrolment targets in terms of gross enrolment and the enrolment forecast to achieve the targets. Lastly, section VI reports the summary and conclusion.

Growth in Higher Education Institutions

Physical access to higher education is an important indicator which can be examined by considering the trends and growth in institutions.

The trends and growth rates of higher education institutions in India since 1950-51, are given in Table 1 (Fig 1.1). The number of Universities in the country has registered an increase from 32 in 1950-51 to and 343 in 2004-05, which denotes more than a ten fold increase. During the same period, the number of colleges has gone up from 695 to 17,625. The computed annual average compounded growth rate of higher education institutions reveal that there was a phenomenal growth during the fifties (8.2%) and sixties (8.8%) and the growth rate came down to an all time low of 2.7 % during the seventies. Since then, there has been a revival and in the most recent period (after 2000) the number of institutions has registered a growth rate of 8.3% per year.

Table 1 Growth and Trends in Higher Education Institutions

Year	Number of Institutions			Growth Rate (%)		
	Universities/University level Institutions	Colleges	Total	Universities/University level Institutions	Colleges	Total
1950-51	32	695	727			
1960-61	56	1,542	1,598	5.8	8.3	8.2
1970-71	102	3,604	3,706	6.2	8.9	8.8
1980-81	133	4,722	4,855	2.7	2.7	2.7
1990-91	190	7,346	7,536	3.6	4.5	4.5
2000-01	256	12,806	13,062	3.0	5.7	5.7
2004-05	343	17,625	17,968	7.6	8.3	8.3

Source: *UGC (2005) University Development in India: Basic Facts & Figures', New Delhi & UGC (2006) 'Annual Report: 2004-05', New Delhi.*

Fig 1.1: Growth in Institutions and Enrolment in Higher Education in India, 1950/1-2004/5
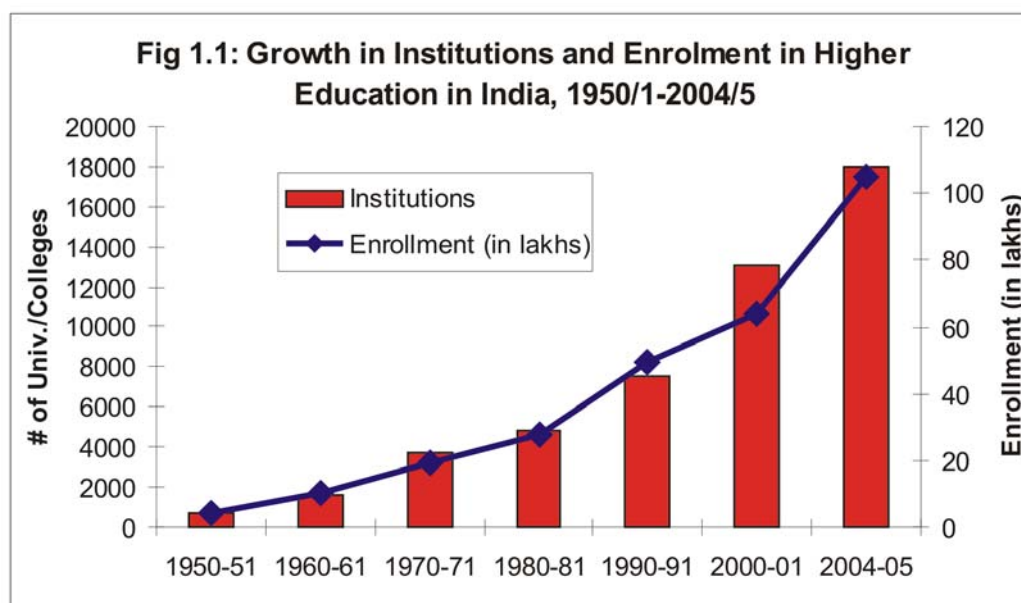
Of the 17,625 colleges in 2005, 79 % are under the purview of the UGC (Table 2). However, only 40 % of the colleges (5273) are included under the 2(f) and 12(B) of the UGC Act and are entitled for funding support under UGC Plan grant. 92 % of the colleges (4870) included under 12 (B) of the UGC Act received X plan grant support. Only 2780 colleges have been accredited by NAAC and 90% of them have secured scores above 60%. This implies that a vast majority of the colleges are not under the purview of the UGC and colleges imparting quality education constitute a meagre 14% of the colleges in India.

Table 2 Number of Colleges in 2005

S.No.	Category	As on March 31, 2005	% of previous row
1	Total	17,625	
2	Under UGC purview (Arts, Science & Commerce)	14,000	79.4
3	Included u/s 2(f) UGC Act	5,589	39.9
4.	Included u/s 12(B) UGC Act	5,273	94.4
5	Funded by UGC X plan	4,870	92.4
6	Accredited by NAAC	2,780	37.1

Source: *Thorat (2006a)*

Interestingly, as seen from Table 3, the X plan period witnessed a spectacular growth in Deemed to be Universities, a majority of which are private institutions. The distribution of colleges in 2001-02 by type shown in Table 4 indicates that 72% are colleges of general education (Arts, Science, Commerce and Oriental learning). Engineering and medicine constitute 7 and 8% of colleges respectively. However, the share of colleges for allopathy medicine is only 1.7 percent of all medical colleges.

Table 3 Types of Institutions: Universities and University Level Institutions, 2001/02-2004/05

S. No.	Type of Institution	As on 31-03-02	As on 31-03-05	As on 31-03-06
1	Central Universities	18	18	20
2	State Universities	178	211	217
3	Institutions Deemed to be Universities	52	96	102
4	Institutions Established under State Legislature Act	05	05	05
5	Institutes of National Importance	12	13	13
	Total	265	343	357

Source: *UGC (2005)*

The state-wise distribution and growth rate in colleges from 2000-01 to 2004-05 are presented in Table 5. The states have been grouped into six regions namely north, central, east, north-east, west and south and smaller union territories. It can be seen that in 2004-05, one-third of colleges are located in the four Southern states followed by Central (22%), Western (19%) and Eastern (11.5) regions. The north-eastern region accounts for only 3.5% of colleges. Considering the growth rates during the period 2000-01 to 2004-05, the highest growth rate has occurred in the Central region and this is mainly due to Uttarakhand (30.3%) and Uttar Pradesh (13.8%). Next in importance is the Southern region with an overall growth rate of 9.8%. Of the southern states the highest growth rate has been witnessed in Kerala (17.3%).

Table 4 Types of Institutions: University Colleges and Affiliated Colleges, 2001-02

(As on 01-01-2002)

S.No	Type of College	No. of Colleges	% to Total
1	Arts, Science, Commerce & Oriental Learning Colleges	11128	72.1
2	Teacher Training	784	5.1
3	Engineering/Technology/Architecture	1077	7.0
4	Medical	1253	8.1
	Allopathy	262	1.7
	Other System of Medicine (Ayurveda (189), Homeopathy(141), and Unani/Tibbia(29))	359	2.3
	Dental	142	0.9
	Nursing	122	0.8
	Pharmacy	241	1.6
	Physiotherapy (120), Naturopath (5) and Public Health (2)	127	0.8
5	Agriculture	106	0.7
6	Veterinary Science/Animal Science	50	0.3
7	Law	368	2.4
8	Others*	671	4.3
	Total	15437	100.0

Note: Others include colleges exclusive for Library Science, Physical Education/Yoga, Music/Fine Arts, Social work Journalism/Mass Communication etc., and colleges for which type not available.

A drawback with available data is that no information is available on institutions classified by management type namely public, private aided and private unaided. Moreover, many of the public and private aided colleges and universities also conduct programs on a self-financing basis and we have no clue about these. There are also a few unrecognised higher education institutions and we have no information on how many such institutions are functioning in the country.

Student Enrolment in Higher Education

Enrolment in Higher Education by Regions and Selected Countries

The last decade has witnessed a massive expansion in enrolment across the world. Table 6 indicates that the enrolment in higher education has increased from 68.7 million in 1990/1 to 110.8 million in 2001/2 which represents a 4.4 % annual growth rate. Most of this growth rate has occurred in the developing countries (6.4%) where enrolment has doubled from 29.3 to 58.3 million. The growth rates in countries in transition and developed countries are 3.3% and 2.5 % respectively. 11 countries witnessed additional enrolment of more than 1 million during the decade 1990/1-2001/2, of which the highest enrolment took place in China (8.3 million) followed by India (5.6 million).

Table 5 State-wise Distribution and growth rate in Colleges, 2000/01-2004/5

State/Region	2000-01	2004-05	GROWTH RATE
North	1358	1865	8.3
Haryana	241	267	2.6
Himachal Pradesh	98	113	3.6
Jammu & Kashmir	101	168	13.6
Punjab	320	468	10.0
Rajasthan	420	636	10.9
Chandigarh	24	29	4.8
Delhi	154	184	4.6
Central	2492	3880	11.7
Chhattisgarh	241	338	8.8
Jharkhand	170	173	0.4
Madhya Pradesh	790	1116	9.0
Uttar Pradesh	1216	2037	13.8
Uttaranchal	75	216	30.3
East	1842	2034	2.5
Bihar	660	665	0.2
Orissa`	699	815	3.9
West Bengal	483	554	3.5
Northeast	574	649	3.1
Arunachal Pradesh	8	12	10.7
Assam	355	396	2.8
Manipur	68	81	4.5
Meghalaya	48	56	3.9
Mizoram	31	30	-0.8
Nagaland	36	42	3.9
Sikkim	7	10	9.3
Tripura	21	22	1.2
West	2467	3284	7.4
Goa	43	46	1.7
Gujarat	620	797	6.5
Maharashtra	1804	2441	7.9
South	4067	5903	9.8
Andhra Pradesh	1402	2096	10.6
Karnataka	1473	1865	6.1
Kerala	352	667	17.3
Tamil Nadu	816	1242	11.1
Pondicherry	24	33	8.3
Other UTs	6	7	3.9
Andaman&Nicobar	4	4	0.0
D&NH	0	0	0.0
Daman&Diu	2	2	0.0
Lakshdweep	0	1	0.0
Total	12806	17622	8.3

The **Gross Enrolment Rate** (GER) is a frequently and widely used indicator of educational advancement of a country/region. It is defined as the ratio of number of pupils enrolled in the higher education institutions, regardless of age, divided by number of persons in the relevant age group. The GER for the developing countries is just 11.3% which is just one half of the World average of 23.2 %. The GER for countries in transition and developed countries is 36.5% and 54.6% respectively.

Table 6 Enrolment in Higher Education by Region and Gross Enrolment Rates

Group of Countries	Enrolment in (in millions)		Growth Rate (%)	Gross Enrolment Rate 2001/2 (%)
	1990/1	2001/2		
Developed Countries	30.8	40.3	2.5	54.6
Countries in Transition	8.5	12.2	3.3	36.5
Developing Countries	29.4	58.3	6.4	11.3
World	68.7	110.8	4.4	23.2

Source: *Higher Education in the World 2006: The Financing of Universities," New York: Palgrave Macmillan, 2006.*

The Global Educational Digest 2006 published by the UNESCO Institute for Statistics (UIS) provides GER for the most recent period, 2004. The GER for selected countries compiled from the above source is presented in the following figures 1.2 and 1.3. It may be observed that the GER is the highest in Finland (87%) followed by USA (82 %), Australia (72 %), UK (60 %) and France (56%). The GER for Malaysia (29 %) and China (19 %) are much higher than for India (11%). It should be noted that the GER reported for India by the UIS is higher than the GER computed using data from the Ministry of Human Resource development (MHRD), Government of India as evident from the following section.

Interestingly the GER for females in the developed countries is higher than that of males while the converse is true in the case of developing countries such as India, China and Malaysia (Figure 1.2).

Fig. 1.2 Gross Enrolment Rate in Selected Countries, 2004

Fig.1.3 Gross Enrollment Rate in Selected Countries By Gender, 2004
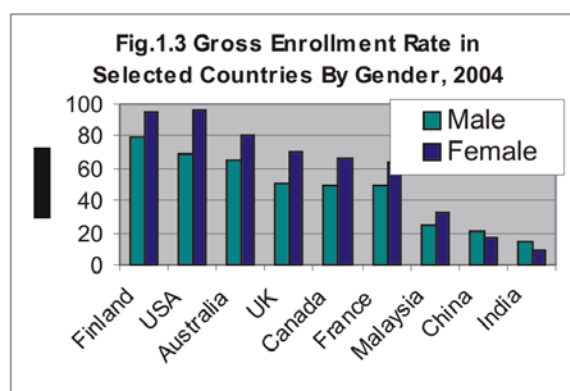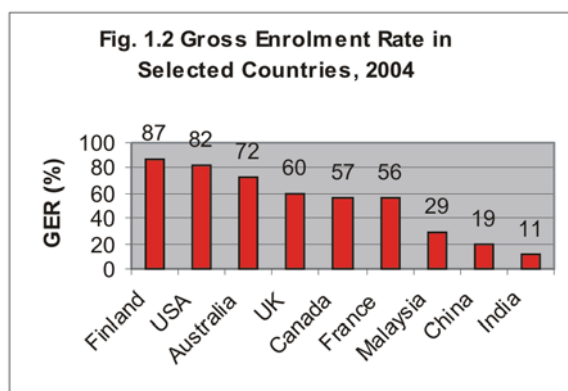
Sources of Data on Enrolment in Higher Education in India

Data on enrolment in higher education for India are available from three sources namely

  (i) **Selected Educational Statistics (SES)**, published annually by the Ministry of Human Resource Development (MHRD), Government of India (GOI).

  (ii) Employment and Unemployment Surveys (various rounds) of the **National Sample Survey Organisation (NSSO)**, GOI.

(iii)   Population **Census** of India published by the Registrar General, Census of India, GOI.

The SES data are compiled by the MHRD based on information provided by the state governments as reported by the educational institutions. Data are available on annual basis over a long period of time. It provides information on the number of higher education institutions as well as enrolment in them. This data set also provides information on enrolment by gender, level (UG, PG, Doctoral) caste (SC, ST and others) and by region (for all States and Union Territories). It is widely used in official reports and documents. However a major limitation of this data is that it underestimates enrolment rates because it does not capture enrolment in unrecognised institutions. As some of the states do not report enrolment on a regular basis, extrapolations are used to fill the gaps arising from non-reporting by some of the states.

It is possible to estimate enrolment rates from household/individual level data from various rounds of the NSS Employment and Unemployment quinquennial surveys, beginning 1983. Since the information is collected from households, the under-reporting is likely to be very small. However, a problem with the NSS data is that it is likely to overestimate the student enrolment in colleges and Universities as it might include those who are enrolled in diploma or training programmes (e.g. computer training) in unrecognised institutions also. The estimates are also subject to sampling errors and the difficulties arising from estimates based on small sample size.

The decennial population census is yet another source of data that provides enrolment information. It is wider in coverage and is collected from households. One has to depend on published tables and information at individual level are not available for generating tables by various sub-groups. Whereas for urban areas it provides detailed classification of education, for the rural areas the classification is broad namely graduates and above. Further, the population census data does not distinguish between enrolment in professional degree and in diploma programmes. It is collected once every ten years and hence it is not possible to construct long series data.

This study relies primarily on the SES data since it provides information over a long time period on an annual basis up to a more recent year, 2003-04.

Trends and Growth Rate in Enrolment Rate in Higher Education in India

The SES provides information on enrolment by level and type of education. The enrolment in degree programmes are mainly in higher education institutions such as Universities and Colleges. Institutions such as polytechnics, teacher training institutes and institutes of arts, crafts etc., admit students after secondary or higher secondary level and award diploma or certificate.

The trends in enrolment at degree and diploma levels for the period 1980/1 to 2003/4 and their share in total enrolment are given in Table 7 and also shown in fig. 1.4. It is apparent that the total enrolment has increased form 29.8 lakhs in 1980/1 to 112 lakhs in 2003/4. As we notice from the fig. 1.4, the growth rate accelerated during the 1990s. The share of enrolment in degree programmes increased form 81.9 % in 1980/1 to 89.4 % in 2003/4 which may be due to the increase in enrolment in professional engineering and medical colleges. The enrolment in Diploma courses constitutes only 10.9 % of total in the recent period.

Table 7 Trends in Enrolment in Degree and Diploma Courses, SES, 1980/1-2003/4

Year	Degree		Diploma		Total	
	Enrolment (in lakhs)	%	Enrolment (in lakhs)	%	Enrolment (in lakhs)	%
1980-81	24.4	81.9	5.4	18.1	29.8	100
1985-86	33.5	86.9	5.0	13.1	38.6	100
1990-91	40.9	83.7	8.0	16.3	48.9	100
1995-96	55.7	86.8	8.4	13.2	64.2	100
2000-01	86.3	89.7	9.9	10.3	96.1	100
2003-04	100.1	89.4	11.9	10.6	112.0	100

Source: *Computed based on SES (various years), MHRD, GoI.*

Fig. 1.4 Trends in Enrolment, 1980/1-2003/4 (SES)
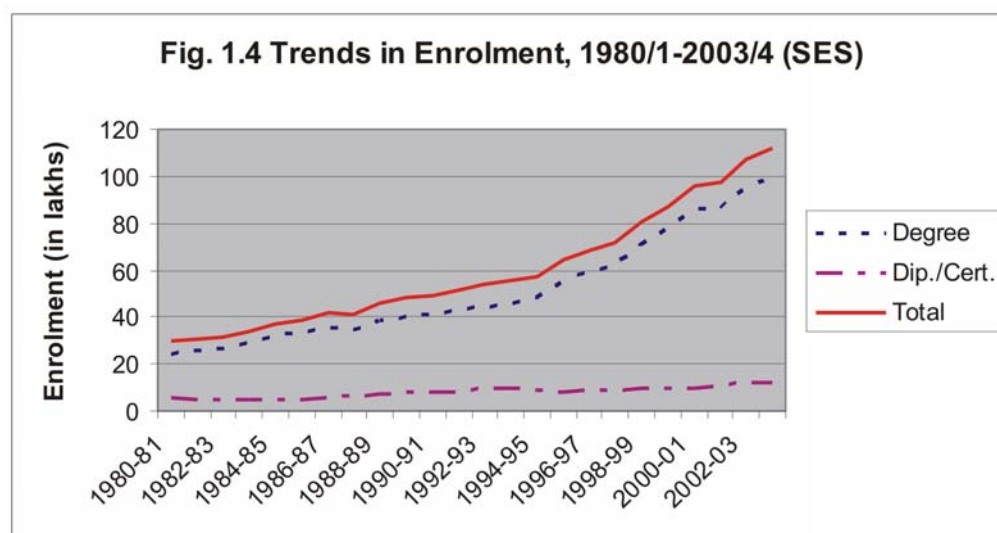
The growth in enrolment based on SES data is given in Table 8. The average annual growth rate for the period 1980/1-2003/4 is 6.3 % for degree, 3.5 % for diploma and 5.9 % for both degree and diploma courses. The highest growth rate in enrolment is witnessed during the period 1995/6-2000/1.

Table 8 Growth Rate in Enrolment, SES, 1980/1-2003/4

Period	Growth Rate (%)		
	Degree	Diploma & Certificate	All
1980/1-1985/6	6.5	-1.5	5.3
1985/6-1990/1	4.1	9.9	4.8
1990/1-1995/6	6.4	1.0	5.6
1995/6-2000/1	9.2	3.3	8.4
2000/1-2003/4	5.1	6.3	5.2
Last Decade 1990/1-2003/4	7.1	3.1	6.6
Entire period 1980/1-2003/4	6.3	3.5	5.9

Note: Growth rates are Annual Average Compounded Growth Rate.

Source: *Computed using SES data.*

The trends in enrolment computed from the NSS survey data are given in Table 9 and also shown in fig. 1.5. The enrolment in degree courses has recorded an increase from 51.1 lakhs in 1983 to 135.5 in 2004/5 which constitutes about 86.1 % of the total enrolment. There has been a steady growth in enrolment in diploma courses as was observed for degree courses. The growth rates in enrolment given in Table 10 indicate that the annual average growth rate for the period 1983 to 2004/5 is 4.7 % which is slightly lower than the growth rate obtained from the SES data.

Table 9 Trends in Enrolment, NSS Surveys, 1983-2004/5

Year	Degree		Diploma & Certificate		Total	
	Enrolment (in lakhs)	%	Enrolment (in lakhs)	%	Enrolment (in lakhs)	%
1983	51.1	86.7	7.8	13.3	58.9	100
1987-88	65.0	87.6	9.2	12.4	74.2	100
1993-94	65.7	72.8	24.5	27.2	90.2	100
1999-00	85.7	77.3	25.2	22.7	111.0	100
2004-05	133.5	86.1	21.5	13.9	155.1	100

Source: *Computed based on NSS surveys on Employment and Unemployment, various rounds.*

Fig. 1.5 Trends in Enrolment, 1983-2005 (NSS)
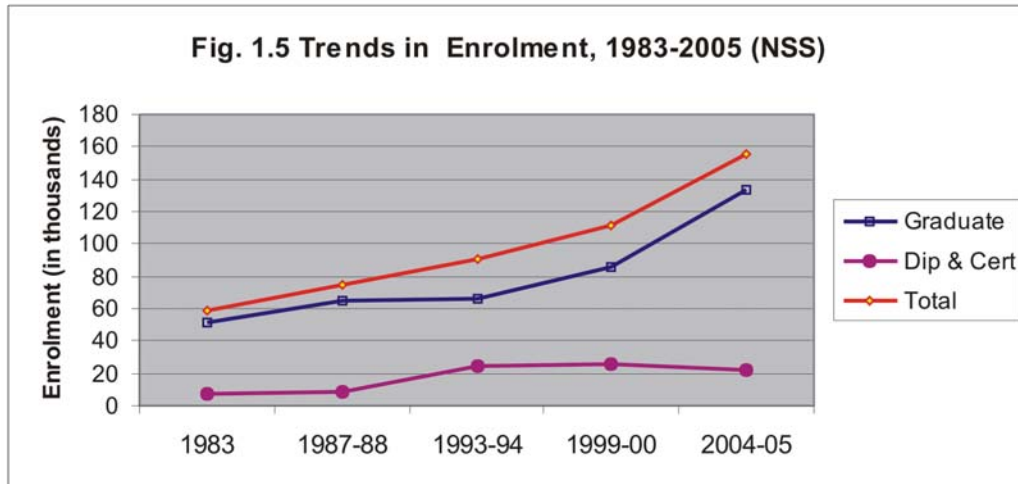
Table 10 Growth Rate in Enrolment, NSS Surveys, 1983-2003/4

Period	Growth Rate (%)		
	Degree	Diploma & Certificate	All
1983 - 1987/8	4.9	3.3	4.7
1987/8 - 1993/4	0.2	17.8	3.3
1993/4 - 1999/0	5.5	0.6	4.2
1999/0 - 2004/5	9.3	-3.1	6.9
1983 - 2004/5	4.7	4.9	4.7

Source: *Computed based on the enrolment data given in Table 9.*

Next we consider the enrolment figures available form the population census data. The trends and the growth rates in enrolment are given in Table 11. The enrolment figures show that there has been a rise from 106 lakhs in 1991 to 161 lakhs in 2001 which denotes an annual average growth rate of 4.15 %. At the same time, the GER has gone up from 11 to 14 percent.

Table 11 Trends in Enrolment in Higher Education, 1991-2001 (Census)

S.No	Details	1991	2001
1	Enrolment (in lakhs) in degree and vocational courses	106.01	160.90
2	GER	10.95 %	13.80 %
3	Annual Average Growth Rate in Enrolment (1991-2001)	4.15 %	

Source: *Population Census of India, 1991 & 2001.*

Trends in Enrolment by Level, Discipline, Gender and Community

The trends in enrolment by level and discipline from 1980-1 to 2003/4 are given in Table 12. A striking finding is that for the most recent year 2003-4 a large share of total enrolment, 89%, is in general education and only about 10% are enrolled in technical education. Whereas enrolment in general education has increased from 82% to 89 % over the years, the increase in enrolment in technical education has been very small 8% to 10%. In terms of levels, 72% of enrolment in 2003-4 in general education is at the UG level and this has increased over the years. At the same time, postgraduate enrolment has registered a decline while enrolment in doctoral programmes has stagnated. This is certainly an alarming trend. Under the category of technical education enrolment in engineering has nearly doubled in the period under consideration.

Table 12 Distribution of Enrolment by Educational Level and Field, 1980/1-2003/4

(in percent)

Field	Level	1980-1	1885-6	1990-1	1995-6	2000-1	2003-4
General	UG	63.3	69.7	67.2	70.7	75.4	71.7
	PG	9.8	8.5	7.2	7	6.7	7.2
	Ph.D	0.9	0.7	0.7	0.6	0.5	0.6
	All	81.9	86.9	83.7	86.8	89.7	89.4
Technical	Engineering	3.5	3.7	4.9	4.9	4.4	6.9
	Medicine	2.3	2.1	1.7	1.7	1.5	2.0
	Others	2.3	2.2	1.9	1.9	1.3	1.0
	All	8.0	8.0	8.6	8.6	7.2	9.9
Degree	All levels	81.9	86.9	83.7	86.8	89.7	89.4
Diploma & Certificate	All	18.1	13.1	16.3	13.2	10.3	10.6
	Total (%)	100	100	100	100	100	100
Enrolment in Higher Education (in lakhs)		29.8	38.6	48.9	64.2	96.1	112..0

Source: *Computed using data from Selected Educational Statistics, various years.*

Fig. 1.6 Male-Female Share in Enrolment, 1980/1- 2003/4
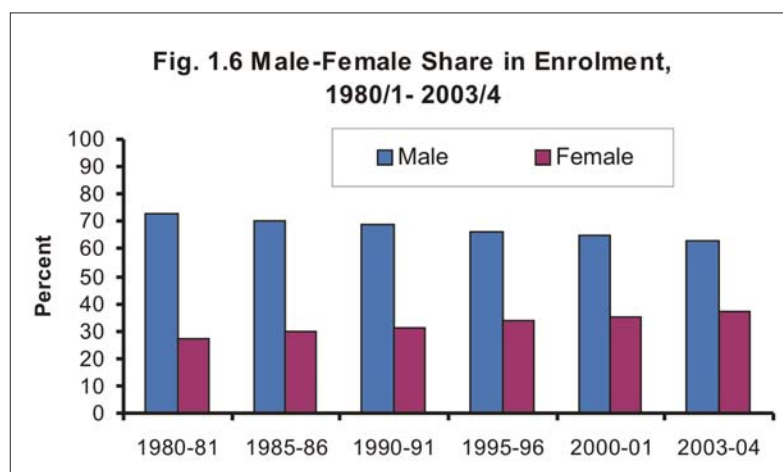
The trends in enrolment by gender are shown in Table 13 an accompanying fig. 1.6. A look at the data indicates a rising trend of women's enrolment in degree courses from 23% to 36% in the period 1980-1 to 2003-4 at the same time that male enrolment in degree courses declined from 59% to 54%. While this appears encouraging, the large gender gap in enrolment of 18 and 26 percentage points respectively in degree courses and degree and diploma in the most recent period is indeed a cause for anxiety.

Table 13 Trends in Enrolment by Gender, 1980/01-2003/04

(Enrolment in lakhs)

	Gender		1980-81	1985-86	1990-91	1995-96	2000-01	2003-04
Degree	Male	Enrolment	17.7	23.3	27.3	35.8	54.4	60.4
		%	59.4	60.4	55.9	55.7	56.6	53.9
	Female	Enrolment	6.7	10.2	13.6	20.0	31.8	39.7
		%	22.6	26.5	27.8	31.1	33.1	35.5
Diploma & Cert,	Male	Enrolment	4.1	3.8	6.2	6.8	7.8	10.1
		%	13.8	9.7	12.7	10.5	8.1	9.0
	Female	Enrolment	1.3	1.3	1.8	1.7	2.1	1.8
		%	4.3	3.3	3.6	2.6	2.2	1.7
Degree & Dip/,	Male	Enrolment	21.8	27.0	33.5	42.5	62.2	70.4
		%	73.1	70.1	68.6	66.3	64.7	62.9
	Female	Enrolment	8.0	11.5	15.4	21.7	33.9	41.6
		%	26.9	29.9	31.4	33.7	35.3	37.1
All	Both Sex	Enrolment	29.8	38.6	48.9	64.2	96.1	112.0

Source**:** *Computed based on data from SES (various years), MHRD, GoI.*

The trends in enrolment of SCs and STs in higher education are shown in Table 14. The enrolment of students from SC communities increased from 4 lakhs in 1990-91 to 14 lakhs in 2003-04 and their share also moved up from 8.4 % to 12.5 %. Similarly there is a remarkable progress in the enrolment of students from ST Communities. The enrolment of ST students increased from 1.16 lakhs in 1990-91 to 3.87 lakhs in 2003-04 but their share increased only from 2.4 % to 3.5 % during the same period.

Table 14 Trends in Enrolment by Community, 1990/1-2003/4

Year	All Community	SC		ST	
	Enrolment (in lakhs)	Enrolment (in lakhs)	% to Total	Enrolment (in lakhs)	% to Total
1990-91	48.86	4.10	8.4	1.16	2.4
1991-92	51.73	4.20	8.1	1.32	2.6
1992-93	53.19	4.88	9.2	1.50	2.8
1993-94	54.35	4.77	8.8	1.62	3.0
1994-95	62.68	5.20	8.3	1.85	2.9
1995-96	64.19	5.37	8.4	2.10	3.3
1996-97	68.23	6.60	9.7	2.31	3.4
1997-98	71.20	6.57	9.2	2.47	3.5
1998-99	80.27	6.88	8.6	2.66	3.3
1999-00	87.31	8.33	9.5	2.90	3.3
2000-01	96.13	9.94	10.3	3.09	3.2
2001-02	99.26	11.38	11.5	3.34	3.4
2002-03	107.17	12.30	11.5	3.62	3.4
2003-04	112.01	14.02	12.5	3.87	3.5

Source**:** *Computed based on SES, (Various years), MHRD, GoI.*

Gross Enrolment Rate (GER) in Higher Education

The GER which has been widely used as an indicator of participation in higher education poses two issues in its computation:

(i)   The first one relates to the relevant population age group in respect of higher education to be used as denominator in computing the GER which has been variously defined. For instance, the National Knowledge Commission (2006) has used 18-24 as the relevant age group while the Planning Commission (2005) has used 18-23 as the relevant age group. In this study we use the latter namely population aged 18-23 to compute the Gross Enrolment Rate.

(ii)   This then leads to the second issue which concerns the data relating to population aged 18-23. The decadal population census is the only source of data on population. Single year age returns are available only for total population and for sub groups like SC, and ST the data are available only at 5-year age intervals like 15-19, 20-24 etc., Wherever data on single year age returns is not available population aged 18-23 is computed using Sprague Multiplier method. Moreover, for the inter-census years interpolations are used and for the years after 2001 to the end of the 11th plan period, 2011-12, population projections of the Office of Registrar General of India (2006) have been used.

Comparison of Estimates of GER from Alternative Data Sources

The population in the age group of 18-23 and number of students enrolled in Colleges and Universities (graduate and above) and vocational education institutions (Diploma/certificate) are given in Table 15. The enrolment at the graduate and above (degree) level is 8.6 million based on SES and NSS data while it is 14.4 million according to Census estimates. The higher estimates from the Census may be due to the inclusion of enrolment in vocational and professional courses, which include both degree diploma and certificate. The vocations and professions included are engineering (ITI, polytechnic), agriculture, medicine, management, law and teaching.

A wide variation is observed in the estimates of enrolment in diploma/certificate courses from the three sources. The enrolment at the certificate/diploma (vocational, teacher training etc.,) level is 1.0 million, 2.5 million and 1.7 million respectively from SES, NSS and Census sources. The coverage of SES in the case of degree/diploma would have been limited as it excludes enrolment in unrecognised institutions. Both NSS and Census sources are likely to include enrolment in unrecognised vocational institutions and hence the estimates turn out to be higher than the SES. As mentioned above, Census data includes vocational diploma along with professional degree, hence yielding a figure lower than that obtained from NSS data.

Table 15 Comparison of Students Enrolment and Computed Gross Enrolment Rates (GER) for Higher Education in India from Alternative Data Sources

S.No.	Description	Data Source		
		SES	**NSS**	**Census**
1	Estimates for the Year	2000-01	1999-2000	2001
2	Estimated Population aged 18-23 (in '000s)	1133,28	1026,90	1133,28
3	Enrolment in graduate & above (in '000s)	86,26	85,70	144,30
4	Gross Enrolment Rate (GER)	7.6 %	8.3 %	12.7 %
5	Enrolment in Vocational Institutes (in '000s)	9,87	25,20	16,60
6	Total enrolment (Degree + Vocational) (in '000s)	95,13	110,90	160,90
7	GER (Degree + Vocational)	8.5 %	10.8 %	14.2 %

Source: *Computed from the above-mentioned data sources.*

The GER for graduates and above is 7.6 %, 8.3% and 12.4% respectively (row 4) from SES, NSS and Census data. The GER, including enrolment in vocational diploma and certificate, has risen to 8.5%, 10.8% and 14.2% respectively from the SES, NSS and Census data (row 7). Thus the SES data seems to under-report gross enrolment rate by about 5% compared to census estimates and about 1-2% compared to NSS estimates.

Comparison of GER from Alternative Sources by Social Groups

The GER for population sub-groups classified by gender, caste, religion and place of residence would be useful for planning and policy formulations relating to **inclusive higher education** and these are shown in Table 16. There is a wide disparity in GER among the social groups irrespective of the source of data.

The gender difference in enrolment ranges between 3-7%. For instance according to SES data the GER is 10.7% for males and 7.5 % for females yielding a gender difference in GER of 3.2%. Similarly, the male-female differential in GER based on NSS data is 3.8%, while from census data it is 6.9%.

Next, let us consider the GER for social groups namely STs and SCs compared to the general population. The GER for SCs is 6.2% compared to 9.7% for the general population as per SES data. The difference between GER for SC and that of the general population are 5.4% and 4.8% respectively from census and NSS data. The GER is even lower for the STs, that is, 4.2% which is less than half the rate of the general population (SES).

The rural-urban difference in GER is quite striking and the NSS data shows that the GER is only 7.5 % for rural compared to 23.8 % for urban sector. The census data also show substantial rural-urban disparity of 15.5% in GER.

Table 16 Gross Enrolment Rates for Population Sub-Groups

Source/year	GER (%)		
	SES 2003-4	**Census 2001**	**NSS 2004-5**
All	9.7	14.2	12.6
Gender			
Male	10.7	17.1	14.4
Female	7.5	10.2	10.6
Caste			
Schedule Tribes	4.2	7.5	7.6
Schedule Castes	6.2	8.4	7.8
Religion			
Hindu	-	-	13.1
Muslim	-	-	7.7
Christian			19.9
Other	-	-	17.7
Place of Residence			
Rural	-	9.0	7.5
Urban	-	24.5	23.8

Note: - indicates data not available.
Source: *Computed from the data sources mentioned in the text.*

Enrolment Forecast for Higher Education

Methodology

There are several approaches to predict the future values from the past values. In this study we use three approaches (A) Time series regression method, (B) Projections based on growth rates and (C) Projections based on predetermined target values of the variable, GER in this case.

(A) Time Series Regression Method

A time series regression model is specified and the coefficients of the model are estimated. The model can be specified as

$$E_t = \alpha + \beta\, t + \gamma\, E_{t-1} + u_t, \;\; t = 1990/1, \ldots 2003/4$$

Where E_t and E_{t-1} are the enrolment in the year t and t-1, t is the time trend and u_t is the random error term and $\alpha\beta$ and γ are the parameters to be estimated. We use lagged enrolment rate as an explanatory variable since current year's enrolment depends upon the enrolment in the previous period. Moreover, the request for approval of additional intake by the educational institutions depends upon the demand for seats in the previous period. The results shown below lend support to this approach to projection. There are other variables such as income, tuition fees and population in the relevant age group etc. that can also influence enrolment. We tried using per capita income at constant prices as an independent variable but the results showed that this variable is highly correlated with the trend variable and it turned out to be statistically insignificant, Other functional forms for the above equation such as exponential, logarithmic and quadratic were tried and we found the above specification to fit well for the given data.

(B) Projections Based on Growth Rates.

The enrolment data from Population Census or NSS are not available on an annual basis but only at selected points in time. Further these data do not cover a long series as in the case of SES. Hence the above forecasting method cannot be applied to these data sets. However, projections can be made based on annual average growth rates computed based on data from 2 or 3 time points. This method assumes that the past growth trend will continue in the forecast period also. This method is sensitive to end point values and any error would seriously affect the growth rate which in turn would affect the predicted future values.

(C) Projections Based on Targets

The above two methods yield predicted or forecast values on the assumption that the prevailing policies and programs would continue in the future. The other complementary approach is to fix the target values, for instance a target for GER to be achieved, and compute the enrolment trajectory for the 11th plan period. Programmes and policies should then be designed to achieve the target.

Projected Population Aged 18-23 for 2001-2012

The report of the National Commission on Population provides population projections for the period 2001 to 2021 at 5 year intervals (Registrar General of Census, 2006). Based on this, the population in 18-23 age group is computed for the years 2006, 2011 and 2016 using Sprague Multipliers and the estimated growth rates were used to interpolate for the other years in the interval. The projected population aged 18-23 for total, males and females are given in Table 17.

The eligible population in the higher education age group (18-23 years), which is 11-12 % of the total population, is expected to increase from 113 million in 2001 to 144 million in 2011 and decline thereafter. The 11th plan for higher education should take note of this changing demographic pattern.

Table 17 Projected Population Aged 18-23 and their Share in the Total Population, 2001-2012

Year	Total Population (in thousands)	Population 18-23 years (in thousands)			% of population 18-23 years to total population
		Total	Male	Female	
2001	1,028,610	113,328	59,232	54,098	11.0
2002	1,044,807	116,457	61,042	55,414	11.1
2003	1,061,259	119,673	62,908	56,762	11.3
2004	1,077,970	122,977	64,831	58,143	11.4
2005	1,094,944	126,373	66,813	59,557	11.5
2006	1,112,186	129,862	68,855	61,006	11.7
2007	1,127,805	132,622	70,203	62,417	11.8
2008	1,143,644	135,440	71,577	63,861	11.8
2009	1,159,704	138,318	72,979	65,338	11.9
2010	1,175,991	141,257	74,407	66,849	12.0
2011	1,192,506	144,259	75,864	68,395	12.1
2012	1,207,419	144,287	75,698	68,588	12.0

Note: Population aged 18-23 is computed using Sprague Multipliers.

Source: *Computed using the Population Projections for India and States 2001-2026, Report of the Technical Group on Population Projections Constituted by the National Commission on Population, May 2006, Office of the Registrar General & Census Commissioner, India.*

Enrolment Forecast and Computed GER for the 11th Plan Period

Based on the time series regression model, the enrolment function is estimated using SES data and the estimates are used to project enrolment for the period 1990/1 to 2011/2 (till the end of the 11th plan period). The actual and projected values are shown in the fig. 1.7. The figure clearly indicates that the predicted values lie very close to actual values and hence the projections for the 11th plan period seem to be reliable. The forecast enrolment, given in Table 18, show that the projected total enrolment in higher education (degree and diploma) is expected to increase from 12.9 million in 2006-7 to 15.7 million in 2011-12 which implies an increase in GER from 9.7% to 10.9% over the same period. As mentioned earlier, the SES enrolment figures are likely to be underestimated and hence the predicted enrolment figures can be treated as lower bound.

The NSS data show that the annual average growth rate of enrolment in higher education from 1983-2003/4 was 4.7 %. The projected values based on the NSS data suggests that total enrolment (and GER) is expected to increase from 19.8 million (14.9%) to 24.9 million (17.3%) during the 11th plan period (Table 18).

The population Census data show that the enrolment grew at the rate 4.18%. The projected values obtained using Census data indicate the enrolment (GER) would increase from 20.5 million (15.5%) to 25.2 million (17.5 %) during the said period.

Overall, the forecasts suggest that the increase in GER during the 11th plan would be in the range 1.2-2.5% which is by any criterion very low. Concerted efforts and policy measures are required to achieve an increase in GER of at least 5% in the 11th plan period.

Fig. 1.7 Actual, Projected and Targeted Enrolment in Higher Education (Degree and Diploma)
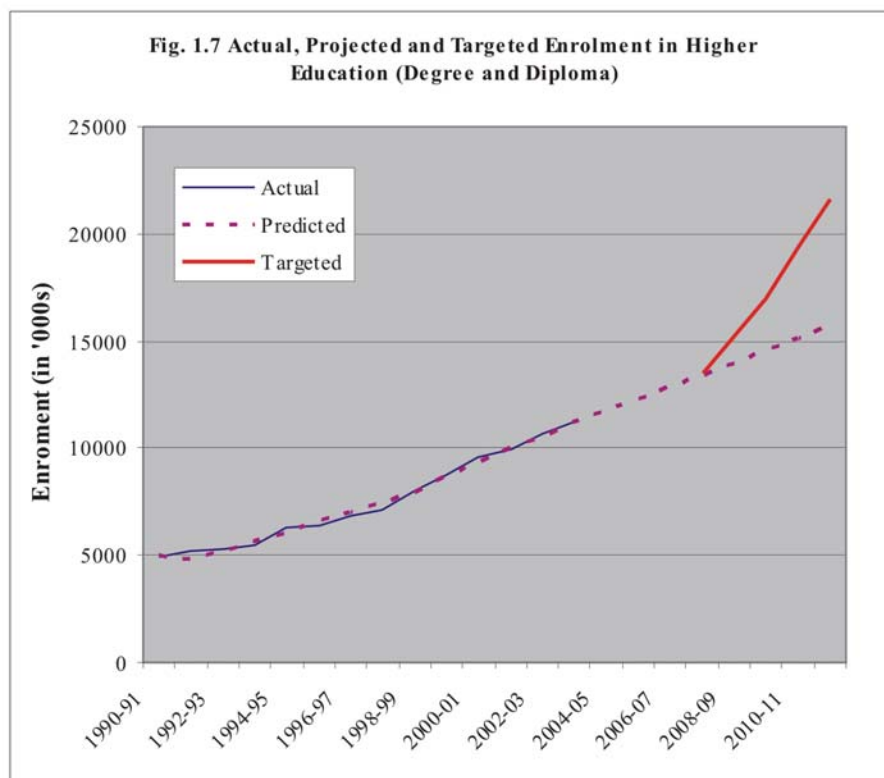
Table 18 Summary of Enrolment Projections and the computed GER from the three Data Sources, 2006/7-2011/12

Year	Population 18-23 (in lakhs)	SES		NSS (2004-5)		Census	
		Total Enrolment (in lakhs)	GER (%)	Total Enrolment (in lakhs)	GER (%)	Total Enrolment (in lakhs)	GER (%)
2000-01	1133	96	8.5	-	-	161	14.2
2001-02	1165	99	8.5	-	-	168	14.4
2002-03	1197	107	8.9	-	-	175	14.6
2003-04	1230	112	9.1	-	-	182	14.8
2004-05	1264	117	9.3	155	12.3	189	15.0
2005-06	1299	123	9.5	162	12.5	197	15.2
2006-07	1326	129	9.7	170	12.8	205	15.5
11th Plan							
2007-08	1354	134	9.9	178	13.1	214	15.8
2008-09	1383	140	10.1	186	13.5	223	16.1
2009-10	1413	146	10.3	195	13.8	232	16.4
2010-11	1443	151	10.5	204	14.2	241	16.8
2011-12	1443	157	10.9	214	14.8	252	17.5

Source: *(1) Population in the age group 18-23 are projected (See Table 17).*

(2) The enrolment projections for the SES data is based on the time series regression model, for the NSS data is based on the growth rates of 3.7% for the period 1983-2004/5 and for the Census data is based on the growth rate of 4.15 % for the period 1991-2001.

(3) - indicates values not predicted

Enrolment Forecast and GER by Educational Type and Level

The projected enrolment for the 11th.plan period for general and professional levels of education is shown in Table 19. Enrolment at the undergraduate degree level in general education constitutes about 81% of total enrolment and the projections indicate that it would be maintained at this level, given that the existing policies and programmes continue. Enrolment at the postgraduate level is only 8% of total and this is also likely to remain the same through the 11th plan period. Enrolment at the post PG level (doctorate) is alarmingly low, being a meagre 0.6%.

The enrolment in general education is expected to witness a moderate increase of 19 % from the terminal year of 10th plan to the end of the 11th plan. Interestingly, the enrolment in engineering and technology would double (from 1.2 million in 2006/7 to 2.2 million in 2011/12), while in medicine it would be only a 25 % increase. The GER for under graduate degree and above is predicted to increase by 1.1 percentage points, that is, from 8.8% in 2006/7 to 9.9% in 2011/12.

One of the key objectives of the 10th Plan was to increase the GER from 6% at the start of the 10th Plan to 10% by the end of 2007 which required the enrolment in universities/colleges to increase from 7.5 million in 2002 to 12.5 million in 2007 (Planning Commission, 2005). However, the SES data indicate that the enrolment in universities/collages was 8.8 million in 2001-02 which yields a GER 7.6 %. Further, the enrolment in universities/collages has increased only to 11.6 million and GER of 8.8 % in 2006/7. Thus the GER has increased only by 1.2 % and not 4 % as intended by the 10th plan.

Table 19 Projected Enrolments and GER for Higher Education by Educational Level and Type, 2006/07-2011/12

(in thousands)

Year	General Education			Professional		All	GER (%) (Degree)	Vocational	Total	GER (%) Degree+Diploma)
	UG	PG	Doct orate	Eng.& Tech	Medicine					
2000-01	7245	647	45	418	148	8626	7.6	987	9613	8.5
2001-02	7139	689	53	526	148	8821	7.6	1105	9926	8.5
2002-03	7633	709	57	709	208	9517	7.9	1200	10717	8.9
2003-04	8026	807	66	773	223	10009	8.1	1191	11200	9.1
2004-05	8506	834	64	934	231	10523	8.3	1206	11729	9.3
2005-06	8969	868	65	1069	240	11053	8.5	1221	12274	9.5
2006-07	9425	906	67	1220	251	11592	8.8	1266	12858	9.7
11th plan										
2007-08	9877	947	69	1388	263	12133	9.0	1292	13425	9.9
2008-09	10327	988	72	1575	275	12676	9.2	1320	13996	10.1
2009-10	10775	1031	74	1781	287	13220	9.4	1349	14569	10.3
2010-11	11223	1073	76	2009	300	13765	9.5	1379	15144	10.5
2011-12	11671	1116	78	2259	313	14309	9.9	1410	15719	10.9

Note: Enrolment up to 2003/4 are actual values and from 2004/5 to 2011/12 are predicted based on the time series regression model. GER is computed using the population aged 18-23 reported in Table 17.

Source: *Computed using SES data.*

Enrolment Forecast and GER by Gender and Caste

The enrolment projections and the computed GER by gender (men and women) for the 11th plan period are given in Tables 20 and 21. The GER for men is 11.1 % in 2006/7 and is expected to increase to 12.3 % in 2011/12. At the same time, the GER of women would increase from 7.9 % to 9.1 %. As expected, enrolment and GER of women are lower than that of men. The gender difference in GER for degree and diploma is 3.2 % for the entire period.

Table 20 Projected Enrolments and GER for Men in Higher Education, 2006/7-2011/12

Year	Men					
	Male Population Aged 18-23 (in '000s)	Enrolment in Degree (in 000s)	GER (%) (Degree)	Enrolment in Vocational /Diploma (in 000s)	Total Enrolment (in '000s)	GER(%) (Degree + Diploma)
2006-07	70203	6742	9.6	1060	7802	11.1
11th plan						
2007-08	71577	7018	9.8	1086	8104	11.3
2008-09	72979	7294	10.0	1113	8407	11.5
2009-10	74407	7570	10.2	1141	8711	11.7
2010-11	75864	7846	10.3	1170	9016	11.9
2011-12	75698	8122	10.7	1198	9320	12.3

Source: *Computed from SES data base.*

Table 21 Projected Enrolments and GER for Higher Education for Women, 2006/7- 2011/12

Year	Female					
	Female Population Aged 18-23 (in '000s)	Enrolment in Degree (in 000s)	GER (%) (Degree)	Enrolment in Diploma/ Vocational (in 000s)	Total Enrolment (in 000s)	GER (%) (Degree +Diploma)
2006-07	62417	4744	7.6	213	4957	7.9
11th plan						
2007-08	63861	4994	7.8	216	5209	8.2
2008-09	65338	5245	8.0	218	5463	8.4
2009-10	66849	549 7	8.2	221	5718	8.6
2010-11	68395	5749	8.4	224	5972	8.7
2011-12	68588	6001	8.7	227	6227	9.1

Source: *Computed from SES data base.*

Enrolment Forecast and GER for Scheduled Castes & Scheduled Tribes

The population projections for the age group 18-23, the enrolment forecast and the computed GER for SC and ST are given in tables 22 and 23. The GER in degree and diploma programmes is only 7.0% for SCs and 4.6% for STs compared to 9.7% for 'all' category (fig. 1.8). The gap in GER between SCs and 'all' category is expected to remain at the present level of 2.7% in the 11th plan period. At the same time, the gap in GER between STs and 'all category is likely to increase from the existing 5.1% to 5.7%.

Fig 1.8: Projected GER for All, SC & ST Communities
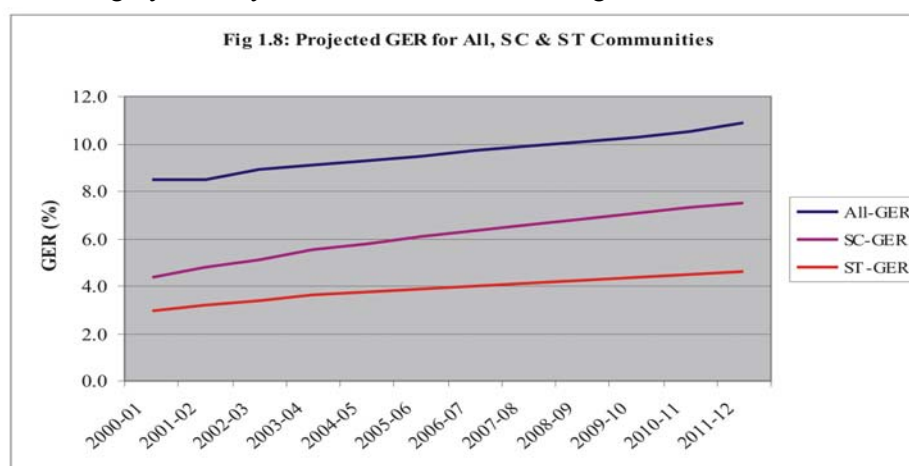
**Table 22 Predicted Enrolments in Degree and Diploma and Gross
Enrolment Rate, Scheduled Caste, 2006/7 – 2011/12**

Year	Total SC Population	Enrolment in Degree	GER (%) (Degree)	Enrolment in Vocational /Diploma	Total Enrolment	GER (%) (Degree+ Diploma)
2006-07	20479287	1294331	6.3	146725	1441056	7.0
11th plan						
2007-08	20844460	1369951	6.6	150933	1520884	7.3
2008-09	21216145	1446768	6.8	154941	1601709	7.5
2009-10	21594457	1524574	7.1	158831	1683405	7.8
2010-11	21979515	1603196	7.3	162651	1765847	8.0
2011-12	22371439	1682494	7.5	166429	1848923	8.3

Source: *Computed from SES data base.*

**Table 23 Predicted Enrolment in Degree and Diploma and Gross
Enrolment Rate, Scheduled Tribes, 2006/7 – 2011/12**

Year	Total ST Population 18-23 Age Group	Enrolment in Degree	GER (%) (Degree)	Enrolment in Vocational /Diploma	Total Enrolment	GER (%) (Degree+ Diploma)
2006-07	9742918	388349	4.0	58271	446620	4.6
11th plan						
2007-08	9916647	407972	4.1	59875	467848	4.7
2008-09	10093474	427836	4.2	61475	489311	4.8
2009-10	10273454	447843	4.4	63076	510919	5.0
2010-11	10456644	467936	4.5	64677	532613	5.1
2011-12	10643100	488080	4.6	66278	554358	5.2

Source: *Computed from SES data base.*

Target GER and Enrolment Trajectory for the 11th Plan

The projected enrolment on the basis of historical trends and growth pattern may not be sufficient to meet the growing requirements of Indian economy. Hence a higher achievable target needs to be envisaged and the 11th plan for higher education should be geared to attain this higher target. The 11th plan approach paper envisages a GER of 20% at the terminal year which is very difficult to attain. Hence a target of 15% GER is assumed and the trajectory of enrolment required to achieve this in the last year of the 11th plan is given in Table 24. The actual enrolment, predicted based on historical trend and the set target are shown in figure 1.2.

As may be noted from the table, total enrolment in colleges and universities at the undergraduate degree and above levels should rise from the existing 11.5 million in 2006/7 to 22.1 million in 2011/12.

Table 24 Enrolment Trajectories for the 11th Plan

(in thousands)

Year	Population 18-23 years	Projected Enrolment	Projected GER (%)	Target GER (%)	Enrolment Corresponding to target GER	Additional Enrolment Required Over 2006-07
2006-07	132622	12858	9.7			
11th plan						
2007-08	135440	13425	9.9	10	13544	686
2008-09	138318	13996	10.1	11	15215	2357
2009-10	141257	14569	10.3	12	16951	4093
2010-11	144259	15144	10.5	13.5	19475	6617
2011-12	144287	15719	10.6	15	21643	8785
			Total Enrolment			22538

Source: *Data in Columns 2 is from Table 8, Columns 3 and 4 are from 1.10 and columns 6 and 7 are computed.*

Target GER and Enrolment Trajectory for Inclusive Higher Education

As shown above, the disparity in GER by gender and socially disadvantaged groups such as SCs and STs is unacceptable. Even though there are several education schemes in favour of these groups, there is still a long way to go to bridge the gap. The 11th Plan should address this social dimension of the problem. We have worked out two scenarios: (i) a moderate target which is achievable with sustained efforts and (ii) enrolment target to attain parity in GER of the disadvantaged group with that of the general population.

Gender Equality in GER

An achievable target of 0.75% increase in GER is assumed under the scenario-I and the trajectory of additional enrolment over and above 2006-07 level required to attain the target is worked out and given in Table 25.

To attain parity between men and women the GER of women should be increased to 15 % in the terminal year of the 11th plan (scenario-II). This requires that 15.1 million more women should be roped into colleges and universities. The actual, predicted and targeted enrolment trajectory of men and women are given in Table 16 and also shown in figure 1.9.

Fig. 1.9 Actual, Predicted and Targeted Enrollment by Gender
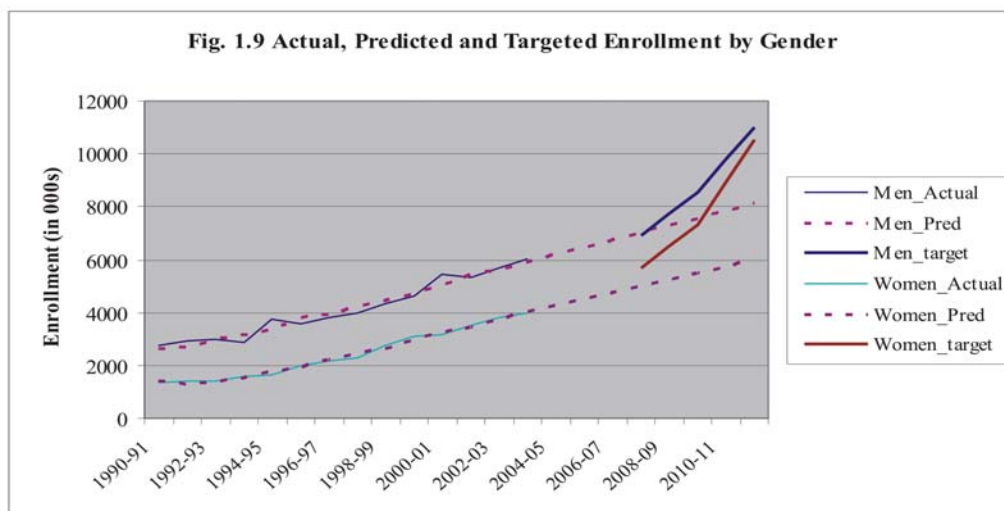
Table 25 Targets GER and Additional Higher Education Enrolment Required for Gender Balancing During the 11ᵗʰ Plan Period

Year	Scenario-I (Increase GER by 0.75 per year)		Scenario-II (Brining Parity to General Level)	
	Target GER (%)	Additional Enrolment Required Over 2006-07 (in 000s)	Target GER (%)	Additional Enrolment Required Over 2006-07 (in 000s)
2006-07	7.90		7.90	
11th plan				
2007-08	8.65	567	9	790
2008-09	9.40	1185	10.5	1903
2009-10	10.15	1828	12	3065
2010-11	10.90	2498	13.5	4276
2011-12	11.65	3033	15	5331
Total *		9111		15366

Note**:**   * Total Additional Enrolment Required to meet the target GER during the 11ᵗʰ Plan.
Source**:**   *Author's Computation.*

Bringing Parity in GER between SCs, STs and the General Population

Under scenario-I we assume an increase in GER of 0.75% per year and in scenario-II, an increase in GER of 1.5% per year is assumed. Table 26 provides the additional enrolment under the two scenarios.

The projected enrolment indicates that the gap in GER between STs and the general population is likely to increase from the existing 4.2% to 4.7%, which is a cause for concern (Table 27). Hence a higher target of 1% per annum increase in GER is taken for scenario-I which implies an additional enrolment of 2 million.

In order for the Scheduled Tribes to reach the GER of the general population, the GER should increase at the rate of 2% per annum which implies an additional enrolment of 1.2 million during the period.

Table 26 Targets GER and Additional Higher Education Enrolment Required for Bringing Parity between SC and All Community during the 11ᵗʰ Plan Period

Year	Scenario-I (Increase GER by 0.75 per year)		Scenario-II (Brining Parity to General Level)	
	Target GER (%)	Additional Enrolment Required Over 2006-07 (in 000s)	Target GER (%)	Additional Enrolment Required Over 2006-07 (in 000s)
2006-07	7.0			
11th plan				
2007-08	7.75	174	8.50	331
2008-09	8.5	362	10.00	681
2009-10	9.25	556	11.50	1042
2010-11	10	757	13.00	1416
2011-12	10.75	964	15.00	1915
Total *		2814		5385

Note**:** * Total Additional Enrolment Required to meet the target GER during the 11ᵗʰ Plan.
Source**:** Author's Computation.

Table 27 Targets GER and Additional Higher Education Enrolment Required for Brining Parity between ST and All Community during the 11th Plan Period

Year	Scenario-I (Increase GER by 0.75 per year)		Scenario-II (Brining Parity to General Level)	
	Target GER (%)	Additional Enrolment Required Over 2006-07 (in 000s)	Target GER (%)	Additional Enrolment Required Over 2006-07 (in 000s)
2006-07	4.6			
11th plan				
2007-08	5.6	167	6.7	276
2008-09	6.6	278	8.8	500
2009-10	7.6	393	11.0	742
2010-11	8.6	511	13.0	971
2011-12	9.6	634	15.0	1208
Total *		1983		3699

Note**:** * Total Additional Enrolment Required to meet the target GER during the 11th Plan.

Source**:** *Author's Computation.*

Concluding Remarks

The enrolment forecasts based on SES data indicate that the GER is expected to increase by only 1.2%, that is, from 9.7% in 2006-07 to 10.9% in the terminal year of the 11th Plan period. Similarly the NSS and Census based estimates suggest an increase in overall student enrolment in higher education of 2-2.4% during the same period. According to NSS data the GER would go up from 14.9% to 17.3% while Census data points to an increase from 15.5% to 17.5%. This calls for concerted efforts to achieve a target of at least 5% increase in GER during the said period. According to the SES data, an additional enrolment of 8.78 million is required to attain a GER of 15% at the end of 11th plan.

A major share of enrolment (81 %) in higher education is at the UG level. The UGC has to focus more on the UG programmes and colleges in order to enhance access and quality. Enrolment rate in Postgraduate (PG) and post PG programmes (research programmes) account for only 8 % and 0.6% of enrolment respectively. The proportion going to post graduate education must be increased to at least 15 % and that of post PG (research) to 2%.

The study has also made forecast of enrolment for women and socially disadvantaged groups. The enrolment forecast by gender reveals that the GER for men is 11.1% while for women it is 7.9%. Thus the male-female difference in GER in 2006/7 is 3.2% and to attain parity with the general population, 5.3 million additional women must be brought into the higher education stream.

The enrolment forecast for the socially disadvantaged groups reveals that the existing disparity in GER between SCs, STs and general category will continue. The GER for SC is 7.0% and for ST is 4.6% compared to 9.7% for the general category. The forecast also indicates that while the current disparity would continue for the SCs it is projected to increase for the STs in the 11th.Plan period. It is estimated that for the SCs and STs to catch up with the general category, 1.9 and 1.2 million additional enrolment of SCs and STs are required.

A vast majority of higher education institutions are outside the UGC purview and hence there is no reliable information on higher education institutions, enrolment and outturn of graduates. A national level organisation under the UGC may be established during the 11th plan to compile reliable data and information on various aspects of higher education as required for planning and policy formulation. This would help to arrive at more accurate estimates which in turn would contribute to more informed decision making.

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Chapter 2

Universities and Colleges Requirement for 15% Target during 11th Plan – An Estimate

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Sudhanshu Bhushan

Achieving the target enrolment of 15% GER by 2012 requires an estimate of university and colleges required during 11th plan. To make such an estimate in the absence of full information is not an easy task. Nonetheless an attempt has been made to estimate university and colleges required during 11th plan under some simplifying assumptions.

Enrolment Projection at All India and State Level

Selected Educational Statistics (2005-06) provides the enrolment in higher education and projected population of the 18-24 year age group for all states. In 2005 the GER at all India level has touched a level of 10.4%. As per the 11th plan target the GER is expected to be reached at 15% raising the enrolment from 123 lakhs in 2005 to 214 lakhs in 2012. State level scenario needs to be understood to achieve the target GER of 15%. For all states the enrolment growth rate of 7.5% has been assumed.

It is interesting to note that among major states, Bihar, Tripura, Arunachal Pradesh, Assam have GER of less than 10% in 2005. These states are likely to achieve enrolment target of less than 10% in 2012. There are states such as Rajasthan, J&K, W&B, Jharkhand, Chhatisgarh, UP, Kerala, Orissa and Harayana which are likely to achieve GER in the range of 10% to 15% in 2012. Remaining states will have achieved GER of more than 15%. The enrolment target, addition enrolment and GER for the states are based on certain assumption relating to population and GER. For example, the population growth of 2% has been assumed for all states during 2005-12 and the enrolment growth of 7.5% only. A uniform rate of growth has been assumed for all states. These may be unrealistic assumptions. Hence each and every state need to firm up enrolment and GER target so that on an average an all India target of 15% GER is achieved.

An important point to note is that different states must have differential projected rate of growth of enrolment. Every state must plan for enrolment projection assuming at least 7-8% compound rate of growth of enrolment to achieve overall GER of 15% during 11th plan.

Optimum size of a university: The average deviation in enrolment of Indian universities is very high. There are some universities with over half a million enrolment and some with even enrolment in hundreds and thousands. The average deviation in the number of colleges in state universities is also very high ranging from over 500 colleges to few colleges. There is no standardization in the size of universities as regulated structure of higher education did not allow market forces to operate to achieve standardization or the optimum size of universities, both in terms of enrolment and the number of affiliated colleges.

Table 1: Actual and Projected GER – State Wise

	2005 Actual GER	2012 Projected GER
States having less than 10% GER	D & N Haveli (0%), Lakshadweep (0%), Daman & Diu (1.9%), A& N Islands (5.6%), Bihar (5.7%), Tripura (6.3%), Arunachal Pradesh (6.6%), Assam (6.7%), Rajasthan (7.1%), Jammu & Kashmir (7.2%), West Bengal (7.8%), Jharkhand (8.1%), Chhatisgarh (8.5%), Orissa (8.9%), Uttar Pradesh (9.1%), Nagaland (9.4%) and Kerala (9.9%)	D & N Haveli (0%), Lakshadweep (0%), Daman & Diu (2.3%), A & N Islands (7.6%), Bihar (7.8%), Tripura (9.2%), Arunachal Pradesh (9.6%) and Assam (9.6%)
States having GER between 10% to 15%	India (10.4%), Haryana (10.5%), Madhya Pradesh (10.9%), Mizoram (11%), Punjab (11%), Gujarat (11.2%), Sikkim (11.4%), Goa (11.6%), Maharashtra (12%), Manipur (12.4%), Karnataka (12.4%), Andhra Pradesh (12.9%), Meghalaya (13.7%), Himachal Pradesh (13.9%) and Tamil Nadu (14%)	Rajasthan (10%), Jammu & Kashmir (10.3%), West Bengal (11.5%), Jharkhand (11.6%), Chhatisgarh (12.1%), Uttar Pradesh (13%), Orissa (13.1%), Nagaland (13.6%), Kerala (14.6%) and Haryana (14.9%)
States having GER between 15% to 20%	Uttaranchal (15.1%)	India (15%), Madhya Pradesh (15.5%), Mizoram (16%), Punjab (16%), Gujarat (16.1%), Sikkim (16.7%), Goa (16.7%), Maharashtra (17.3%), Manipur (17.9%), Karnataka (18.1%) and Andhra Pradesh (19.2%)
States having GER greater than 20%	Pondicherry (21.8%) and Delhi (32.2%)	Meghalaya (20%), Himachal Pradesh (20.2%), Tamil Nadu (20.6%), Uttaranchal (21.5%), Pondicherry (31.4%) and Delhi (45.8%)

The 11th plan notes that UGC in consultation with stakeholders determines the optimum size of a university. Optimum size of a university leads to achieving efficiency in resources, besides, small size of university helps in effective monitoring of the colleges. A college may be granted autonomy and universities may effectively monitor through performance indicators.

The question, however, is: what is the optimum size of a university?

Research finding tells very little on the optimum size of a university or a college. Hence, a norm may be considered to determine the optimum size of a university. At all India level, as per SES 2005-06, the total number of universities was 337 and total enrolment was 12.9 million, yielding an average enrolment of 38363 students. State-wise range in average enrolment per university was 4060 in Arunachal Pradesh to 60224 in Andhra Pradesh. No doubt, if we look at the range university-wise, it will be much higher than state-wise range in average enrolment per university. Different norms may be considered for optimum size of a university.

Requirement of Universities during 11th Plan

Three alternatives are given in Table 2. Under enrolment criteria, using norm (i) and norm (ii), the numbers of universities required are 646 and 430 by 2005. Hence, under restructuring of a university, additional 309 universities (norm i) and additional 93 universities (norm ii) will be required under present restructuring norms. Required number of additional universities, after restructuring, during the 11th plan will be 735 by norm (i) and 378 by norm (ii).

Under number of colleges per university criteria under norm (i) and norm (ii), under restructuring 248 and 52 additional universities will be required.

Under population criteria, 282 additional universities under restructuring and 378 additional universities by 2012 will be required.

Table 2: Number of Universities Required

Criteria		Restructuring, 2005		Projection by 2012	
		Total	Additional	Total	Additional
Enrolment Criteria (inclusive of UG and PG)	Norm (i) 20000 per university	646	309	1072	735
	Norm (ii) 30000 per university	430	93	715	378
College Criteria	Norm (i) 20 colleges per university	585	248	-	-
	Norm (ii) 30 colleges per university	389	52	-	-
Population Criteria	(i) 1 university per 2 lakh population in 18-24 year age	619	282	715	378

Thus if we look at enrolment and population criteria a minimum 378 and a maximum of 735 additional universities would be required in addition to the existing 337 universities in 2005.

Limitation

1. It should be kept in mind that in the absence of a theoretical norm, an empirical norm has been assumed to calculate the requirement of universities. Various states may consider a slightly different norm to arrive at a decision to establish additional universities during 11th plan.

2. Central, state and deemed universities are treated alike, although enrolment may vary largely by type of universities. Within central, state and deemed university intra university variation may also be quite high. Given that central and deemed universities have less enrolment than state universities, table may provide a little under estimation. Besides the feasibility of establishing many universities in some deficits states also needs to be taken in to account.

3. Above calculation is at the macro level. At a disaggregated state level those universities above the assumed norm, determined by the state, might be identified. These identified universities may be considered to be divided into smaller universities. How many sub divisions of a large university can be made depends on a host of factors – such as technology, cost and administrative factors?

4. There is a view that optimum size of a university has not only quantitative but also qualitative dimension. The optimality of university has to take account of a critical level of students, teachers, disciplines, programmes of study and the needs of society and its emergence as a nurturer and creator of knowledge which may vary across universities. Universities may be allowed to have multi-campuses in order to expand and to reach out to the unreached.

Under restructuring, the larger number of state universities should be created by any of the following strategies:

1. Large universities should give rise to a few independent universities.

2. Smaller university should be merged to form a single university

3. Cluster of colleges may come together to form a university.

4. Private deemed university & private state universities may be established

Restructuring of General Colleges in Different States:

In 2005 7.64 million students were enrolled in 11699 general colleges, yielding an average enrolment per college of 653. However, there are states where average enrollment per college is extremely high. If we look at the range by taking college wise enrolment it may be very high, as there are colleges with few hundred enrolment and colleges with tens of thousands of enrolment. We have assumed that at one lakh of population in the age group of 18-24 year there should be 7 -10 general colleges, assuming an average enrolment of 1000 - 1500 students per college. Every state may modifying this assumption to calculate the requirement of general colleges in respective states, as state wise density of population, topography, per capita income varies. Our calculation, on the assumption of 10 colleges per one lakh population in 18-24 year age group shows that by 2012 total number of general colleges required would be 14302. Hence additional 2602 colleges would be required during 11th plan in addition to 11699 general colleges in 2005. On the basis of the above norm it is quite likely that there are states with surplus or deficit number of colleges.

The population criteria may be substituted by enrolment criteria alone in estimating the requirements of colleges. For this states may consider to project the general education enrolment by 2012 (See table 1 in the appendix) and assuming per college enrolment, the required number of general colleges may be estimated.

Limitation
1. An important limitation in college requirement by population norm is the assumption of 10 colleges per one lakh population. Various states are at different stages of development and hence the above assumption for different states may vary.

2. Some states may be deficit states by uniform criteria. However, it may not be a deficit state by other criteria depending upon a host of other factors such as density of population, topography, per capita income etc.

Appendix

Table 1: State wise Projected Enrolment

		2005			2012			
		Projected population 2005 (,000)	Enrolment	GER (Excluding open and polytechnic enrolment)	Projected population(,000)	Projected enrolment (7.5% CARG)	Projected GER	Additional enrolment (2005-12)
31	D & N Haveli	34	0	0	40	0	0	0
34	Lakshadweep	8	0	0	9	0	0	0
32	Daman Diu	31	580	1.9	42	962	2.3	382
29	A& N Islands	51	2862	5.6	62	4749	7.6	1887
4	Bihar	8952	511037	5.7	10827	848020	7.8	336983
25	Tripura	382	24101	6.3	437	39993	9.2	15892
2	Arunachal Pradesh	123	8119	6.6	141	13473	9.6	5354
3	Assam	3203	214273	6.7	3693	355567	9.6	141294
22	Rajasthan	6594	464913	7.1	7704	771481	10	306568
10	Jammu & Kashmir	1263	91281	7.2	1476	151473	10.3	60192
28	West Bengal	9593	752442	7.8	10902	1248609	11.5	496167
11	Jharkhand	3005	243067	8.1	3489	403348	11.6	160281
5	Chhatisgarh	2252	190360	8.5	2605	315885	12.1	125525
26	Uttar Pradesh	18945	1724462	9.1	22001	2861588	13	1137126
20	Orissa	4427	396152	8.9	5033	657378	13.1	261226
19	Nagaland	306	28683	9.4	349	47597	13.6	18914
13	Kerala	3894	386960	9.9	4409	642125	14.6	255165
8	Haryana	2660	279246	10.5	3110	463383	14.9	184137
	India	123984	12928180	10.4	143021	21453142	15.0	8524962
14	Madhya Pradesh	7034	766848	10.9	8207	1272515	15.5	505667
18	Mizoram	125	13783	11	143	22872	16	9089
21	Punjab	2889	318301	11	3311	528192	16	209891
7	Gujarat	6552	735525	11.2	7590	1220537	16.1	485012
6	Goa	182	21168	11.6	210	35126	16.7	13958
23	Sikkim	75	8514	11.4	84	14128	16.7	5614
15	Maharashtra	12073	1450941	12	13943	2407705	17.3	956764
16	Manipur	302	37337	12.4	346	61957	17.9	24620
12	Karnataka	6879	855230	12.4	7851	1419177	18.1	563947
1	Andhra Pradesh	9834	1264700	12.9	10935	2098655	19.2	833955
17	Meghalaya	277	38034	13.7	316	63114	20	25080
9	Himachal Pradesh	767	106750	13.9	876	177142	20.2	70392
24	Tamil Nadu	8097	1132899	14	9108	1879943	20.6	747044
27	Uttaranchal	1042	156833	15.1	1208	260250	21.5	103417
35	Pondicherry	130	28394	21.8	150	47117	31.4	18723
33	Delhi	1870	620640	33.2	2247	1029896	45.8	409256

Chapter 3

Identification of Educationally Backward Districts

Sachidanand Sinha

Introduction

The current status of higher education in India is characterized by low enrolment, poor completion rates and high drop out. There are wide social and regional disparities in enrolment rates and availability of institutions of higher education. Although India has made appreciable progress in this regard, particularly with reference to growth in the number of universities and colleges over the years, the rural-urban and regional differentials in availability of institutions of higher education along with other infrastructure such as teaching faculty, hostels, housing for teachers, library, laboratories, and computer facilities etc. have widened over the years.

The colleges and universities located in remote and backward areas tend to fare poorly on all parameters of educational development. It is therefore necessary to consolidate the infrastructural provisions in existing universities and colleges besides strengthening the supply of colleges and institutions of higher and vocational education in order to provide higher and better quality opportunities to eligible population to join higher education. It needs no emphasis that availability of good quality educational infrastructure is of critical importance, among several other factors, for a sustained growth of enrolment. It is also important to note that while during the last one decade or so the higher education sector in India has seen a phenomenal increase in the number of new educational institutions being established largely as a consequence of increased private investment, such initiatives have remained confined to large urban centres and relatively better-off states. A large number of private institutions having mushroomed also suffer from lack of basic minimum infrastructure and well-qualified faculty. It needs no labour to emphasize that the state funded and aided universities and colleges have over the years been suffering from gross neglect and indifference, among others, mostly on account of poor maintenance of existing infrastructure, and slow pace of infrastructural up gradation and expansion.

The UGCs initiative in promoting infrastructural development in colleges and universities located in backward and remote areas is geared towards achieving equity and access in higher education. During the Xth plan strengthening infrastructural provisions through qualitative improvement and quantitative expansion in newly established universities and colleges was identified as the thrust areas by the UGC in order to meet the increasing demand and rising aspirations for quality in higher education. Similar initiative was put in place in order to help old universities and colleges to enable them further consolidate, revamp and revitalize infrastructure through up gradation and expansion of teaching and other supporting infrastructure.

The three focal themes on Indian higher education for the XI Plan are expansion, inclusion and excellence. The schemes that address the above themes include strategies for increasing the enrolment in higher education,

ensuring quality at global standards to enhance employability and equitable access to the socially underprivileged and weaker sections.

The expansion of Indian higher education is to be achieved by providing increased access to higher education so as to raise the Gross Enrolment Ratio (GER) by 5% by the end of XI Plan period which amounts to increasing the enrolment from the present 10.4 million to 21 millions. Even though India has attained the economic growth of over 9% of GDP in spite of the present low GER, to sustain such a rate of economic growth and to remain competitive in the globalised economy, the country has to have GER of at least 25%.

In order to achieve this target, several approaches are being considered. A daunting task, to begin with, is creation of institution-based-infrastructure to enroll another 10 million eligible youth at the tertiary level. Notwithstanding the initiative to start new universities, the 'bottom-up' pragmatic approach would be to start new colleges to facilitate accelerated and substantial increase in the GER. Therefore, there is a definite need to plan and find resources for establishing at least 5000 more colleges across the country based on the GER of the constituent States. It has to be borne in mind that for accelerated growth in higher education enrollment, strengthening of school education is extremely important, since it is presently characterized by poor pass out and high drop out ratios at every level. Thus expansion of Indian higher education involves an integrated development of schools, colleges and universities.

Although expansion may normally have an element of inclusion, experience reveals that every instance of expansion does not necessarily ensure access to multitudes of marginalized sections of the society. Therefore, inclusion in this context refers to creating enabling conditions for enhanced access to educationally, geographically, socially and economically backward segments of the society.

In order to bring about integrated quality enhancement as envisaged above, inclusion of the underprivileged and the weaker sections within the targeted ambit of increased Gross Enrolment Ratio (GER) in higher education is pivotal. The University Grants Commission has been implementing policy innovations and schemes like special grants for universities and colleges in educationally backward districts, coaching schemes for disadvantaged groups, establishing SC/ST Cells, etc., to achieve all the above three dimensions of higher education themes, especially in respect of 'inclusion'. It however remains important to note that rapid expansion and growth of enrolment in higher education can be addressed by expanding the stock of higher education in the country on the one hand and further consolidating educational infrastructure in the already available universities, colleges and institutions.

This study therefore attempts to address the following objectives:

To examine the socio-spatial patterns of enrolment in higher education both at the state and district levels.

To examine the spatial patterns of availability of educational facilities and to identify the areas suffering from supply constraints with respect to various types of institutions imparting degree courses.

To identify educationally backward regions at the district levels for the purpose of effective implementation of strategies and programmes of the UGC during the Xth Plan.

Sources and Methodology

This study has been carried out by obtaining the enrolment data from the Census of India while data on availability of educational facilities namely colleges and other institutions offering degree level courses from

the UGC. As the list of colleges from the UGC were not complete information from Departments of Higher Education of various States as well as AICTE and AIU were also utilized for updating the list as on 2001-2002.

The UGC adopted overall literacy rates as the single indicator for disbursement of funds under the educationally backward areas scheme during the X plan. Districts that had overall literacy rates below the national average (i.e. 65.4 per cent) were identified as educationally backward. Accordingly, the number of such districts, as per the Census 2001, was 294 for the country as a whole.

On close examination of the literacy-rate-based criterion, it was observed that although the relationship between literacy and enrolment levels was close, the single indicator of literacy did not capture the complexities of educational backwardness in general and higher education in particular. It was noted that in a developing country such as India there is high rate of illiteracy, low enrolment rates and high drop out rate at the higher secondary school level.

It is equally important to note that literacy as defined by the census is largely and more significantly a function of educational attainments in school education. A small proportion, roughly 7 per cent of all literates, can be identified as having attained post-matric education. Further as per the NSSO (61 Round; 2004-5) only about half of those having completed higher secondary education in the age group 18-23 enrolled themselves for higher education. This figure varied significantly across the States as well as the districts. Hence, districts that have been doing better in school education may not necessarily be doing well at the level of higher education. In this study one observed a number of instances where districts with higher levels of literacy rates had low GER in higher education. At least 127 such districts distributed all over the country could be identified. These districts as per the UGC's X Plan criterion were excluded from the list of educationally backward districts, which also included a large number of districts with GER as low as 3.0. It also excluded some districts of Kerala where enrolment in higher education was far below the national average, while literacy rates were far above the national average. On the contrary, one may also observe about 50 districts, which had higher enrolments in higher education, but literacy rates were lower than the national average.

GER is a gross measure that includes all enrolled in higher education proportionate to population in the relevant age group (18-23 years). It will be instructive to note that literacy is stock variable, whereas GER indicates the current status of enrolment in higher education. It is therefore in fitness of things that literacy rates are substituted by GER in higher education for identification of the EBDs for the purpose of planning and allocation of funds in the context of higher education. The following formula defines GER (higher education):

$$\text{GER} = \frac{\text{All Enrolled in Post Higher Secondary Classes}}{\text{Total Population in } 18-23 \text{ age group}} \times 100$$

It may further be noted that GER at the district level is only obtainable from the Census data (Series C: Social & Cultural Tables; Tables C8-C10). The Census uses the following definition in order to arrive at the relevant figures, i.e. population attending higher education:

"A person attending college or university education or any such private (recognised or unrecognised) institution that ultimately result in awarding a Graduate Degree or Post Graduate Degree as recognised by government or university or any other agency authorised by government will be considered as attending college. This will include the study of Arts, Science, Commerce, Home Science, Modern Indian/European languages, Theology, Public Administration, Statistics and other similar subjects." Persons attending distance education find the same probability of getting reported in the census figures.

"Persons receiving vocational training or attending vocational and professional courses will come under the category of vocational institutions. It includes the study of courses which prepare students for various vocations/ professions such as Agriculture, Teacher Training, Physical Education, Engineering and Technology, Architecture, Fine Arts (Music, Dancing, Sculpture, etc.), Journalism, Library Science, Law, Medicines, Business Management, etc. Therefore all persons attending vocational or professional courses such as electrician, plumber, carpenter, motor mechanic, fitter, stenography, typing, architecture, engineering, computers, nursing, midwifery, pathology, courses of ayurvedic, unani & other system of medicines; agriculture, dairying, forestry, black smithy, dyeing, tanning, textile, teaching (JBT, B.Ed, M.Ed., etc.); physical education, journalism, library science, art, fine art, dress making, visual communication, etc. will be considered as attending Vocational Institutes. Persons attending computer and similar courses offered by different private institutions will also be covered under this category. Engineering Colleges, Medical colleges, IIT's, Institutes of Business Management, professional courses such as Company Secretary, Chartered Accountant, Law Colleges, etc. are also included under this category."

It is easily obtainable from the above definition that vocational education includes a variety of diploma and certificate courses for which passing higher secondary examination may not be a necessary qualification. A large number of those enrolled in vocational institutions such as ITI, and others are thus clubbed with degree level vocational and professional courses that require post-higher secondary certificate. It was also observed that enrolment in such vocational courses varied significantly across the districts, which may distort the enrolment figures. It was therefore, resolved to consider only degree-level college education and exclude enrolment in vocational institutions for the purpose of identifying EBDs. Exclusion of enrolments in vocational institutions accounted for only about 1.5 to 2.25 per cent of total enrolment and thus was not likely to affect inter-district patterns of GER in any significant way.

There are mainly three sources of educational statistics on higher education, namely Selected Educational Statistics (SES), various rounds of National Sample Survey Organization (NSSO) and the Census of India. Out of this, the Census is the only source which covers the entire population and also provides enrolment data at the district level for higher education. The EBDs, in this exercise, have been identified as those with GER below the national average of 12.4. On the basis of this criterion 374 districts out of 593 (as per the configuration of 2001 census) have been identified as EBDs. One is aware that in the post-2001 period, new districts have been carved out of the existing ones and the total number of districts in the country has gone up. However authentic data about the exact number as of 2008 is not readily available.

The picture of availability of educational institutions has been worked out by developing an index of college availability in form of College-Population Index (C-PI). The index represents the number of colleges per lakh population in the relevant age-group (i.e. 18-23 years) in a certain district.

College-Population Index (C-PI) per lakh population is defined as under:

$$C-PI = \frac{\text{No. of Educational Institution offering post Higher Secondary Degree / Diploma in the 'X' district}}{\text{Total Population in } 18-23 \text{ years age in 'X' district}} \times 100{,}000$$

The significance of GER and C-PI is very well captured as the two have revealed a reasonably high degree of rank correlation (r = 0.403). The degree of association was observed to be stronger in case of GER for the Scheduled Castes (r = 0.507) while it was found to be weak for the Scheduled Tribes (r = 0.265). The weak

correlation coefficient for the STs is indicative of low GER among the STs and low variation across the districts with respect to the two indicators.

Enrolment in Higher Education

Enrolment situation in higher education has been captured in terms of gross enrolment ratio (GER). GER for the country in 2001 as per the Census was 12.4. It was 15.3 for males while for the females it stood at 9.2. The census figures reported much higher than that reported by the SES figures and a little higher than the NSSO (61st round, 2004-5). The overall enrolment currently attending graduate degree courses as per the NSSO stood at about 11.0 percent; 12.4 for males and 9.11 for the females. This difference between sample-based estimates and census could largely be due to age profile and social strata in the sample data. As mentioned earlier, inequality between social groups is phenomenally high both at the aggregate all-India level as well as at the state levels. The GER for the SCs stood at 7.5 while it was 14.0 for the non-scheduled population. The STs had the poorest GER which was marginally lower than that of the SCs. The magnitude of disparities among the social groups is conspicuously high for the females as well as gender. GER for the urban areas shows that urban populations may be very close to achieving the magic figure of 25 as the non-scheduled as well as the STs have done very well but the SCs are way behind the STs with over 7 percentage points. Females across the social groups have done relatively better in urban areas while their counterparts across social groups in rural areas have yet to begin the journey. Both the SCs as well as STs have an abysmally poor GER of around 2.5.

Regional variation in the levels of enrolment as revealed below (table 1) shows that some of the states in the North-eastern India such as Manipur had the highest GER followed by Nagaland, while another minor state (in terms of population size) Uttaranchal followed closely by Maharashtra, while another minor state (in terms of population size) Uttaranchal followed closely by Maharashtra, Kerala, Delhi, Pondicherry, Himachal Pradesh had GER above the national average. Sikkim had the lowest GER in the country; among the major states Rajasthan shared the space with West Bengal, Madhya Pradesh and Gujarat. These states had lesser proportion of population in the 18-23 years age enrolled in higher education and it is interesting to note that Gujarat, Tamil Nadu and Kerala had much lower GER than Bihar, UP and Orissa. It is instructive to note that some of the economically and educationally (with respect to literacy rate and school enrolment) backward States such as Orissa, Assam, Jharkhand and Andhra Pradesh have shown significantly higher enrolments in higher education in comparison with relatively better off States such as Tamil Nadu and Karnataka. There could be a number of factors responsible for this pattern. The foremost factor is the grossness of enrolment ratio, which includes those enrolled in higher education irrespective of the age. Since GER is a gross and not a net measure it could be safely assumed that the extent of grossness on account of over aged persons attending colleges in the relatively backward areas (as is generally observed in rural areas), may be responsible for inflating the enrolment ratio. Besides, one may not ignore the fact that Assam and Orissa in spite of their relative backwardness have been doing fairly well especially in the context of higher education. One may also observe that Tamil Nadu and Karnataka, among several other States, reported lower college level enrolment among persons having completed higher secondary education. It was around 52 per cent for the country as a whole, the relevant figure for Tamil Nadu was about 40 per cent, while Bihar, Orissa, and Assam reported higher figures. It needs to be understood that higher education has essentially been the prerogative of the relatively better-off sections: salaried and self-employed in urban areas and landed upper classes (as well as castes) in rural areas. These sections irrespective of their place of residence have always found means to access opportunities in higher education. This coupled with the overall scenario of educated unemployment in India may have different implications for different sections of population. While the better-offs may still continue to wait and carry on education until such a time they found employment of their choice, for others poverty may force them to join

the workforce in any capacity without waiting for further education or better job prospects. Enrolment in higher education thus is significantly influenced by class dynamics, which varies significantly across the States and districts. Table 2 below identifies the EBDs on the basis of GER, classified into four categories. A detailed inter-state and inter-district profile of access to higher education by social groups is provided elsewhere in this volume.

Table 1: Gross Enrolment Ratio by Social Groups for States and UTs, Census 2001

States/Union Territories	Total/ Rural/ Urban	All population			Non Scheduled Population			Scheduled Tribes			Scheduled Castes		
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
INDIA	Total	12.4	15.3	9.2	14.0	16.8	10.7	6.8	9.5	4.2	7.5	10.3	4.5
	Rural	8.1	11.3	4.7	9.1	12.4	5.5	5.2	7.6	2.8	5.6	8.4	2.6
	Urban	21.8	23.7	19.6	23.0	24.7	20.9	21.3	24.9	17.4	13.7	16.3	10.8
ANDHRA PRADESH	Total	14.2	19.2	9.1	15.6	20.6	10.3	6.0	10.7	1.8	10.5	15.2	5.9
	Rural	8.5	13.0	4.0	9.2	13.6	4.5	4.9	9.2	1.1	7.5	11.9	3.1
	Urban	27.0	33.5	20.5	27.8	34.3	21.2	17.4	26.7	9.0	22.4	28.4	16.5
ARUNACHAL PRADESH	Total	7.0	9.3	4.6	5.6	5.9	5.1	7.9	11.7	4.3	4.6	5.0	4.0
	Rural	4.4	6.2	2.5	3.2	3.5	2.7	5.0	7.7	2.4	3.8	4.0	3.4
	Urban	15.4	18.7	11.6	10.4	10.5	10.2	21.2	30.7	12.8	5.4	5.8	4.7
ASSAM	Total	15.3	18.4	12.1	15.4	18.3	12.5	16.4	21.7	11.4	11.3	13.8	8.6
	Rural	12.6	15.7	9.5	12.4	15.2	9.5	14.9	20.0	10.1	9.8	12.4	6.9
	Urban	31.5	33.9	28.9	32.1	34.2	29.7	43.4	51.1	35.8	18.8	21.0	16.3
BIHAR	Total	11.9	17.8	5.5	13.3	19.4	6.4	6.1	9.4	2.8	4.8	8.4	1.2
	Rural	8.5	13.8	2.9	9.5	15.1	3.4	4.2	7.2	1.1	3.6	6.7	0.6
	Urban	36.3	43.7	26.6	38.0	45.4	28.3	33.7	36.6	29.8	19.5	27.3	9.6
CHHATTISGERH	Total	8.9	11.8	5.9	11.5	14.4	8.4	4.1	6.3	2.1	8.1	12.2	3.9
	Rural	4.6	7.3	1.8	5.6	8.5	2.5	2.7	4.6	0.9	5.8	9.9	1.6
	Urban	22.6	25.2	19.7	23.8	26.0	21.3	23.0	26.5	19.1	14.8	18.7	10.6
GOA	Total	15.0	14.7	15.3	15.1	14.7	15.5	2.6	2.3	3.1	10.0	10.7	9.2
	Rural	11.4	11.3	11.4	11.4	11.3	11.5	4.0	0.0	12.5	6.7	7.6	5.8
	Urban	18.7	18.0	19.6	18.9	18.1	19.8	2.0	3.7	0.0	12.6	13.1	12.0
GUJARAT	Total	8.9	10.2	7.5	9.6	10.8	8.3	5.0	6.3	3.7	8.2	10.2	5.8
	Rural	5.1	6.6	3.5	5.2	6.7	3.6	4.4	5.7	3.1	6.0	8.3	3.3
	Urban	14.6	15.2	13.8	15.0	15.6	14.3	10.5	11.4	9.5	11.2	12.8	9.3
HARYANA	Total	12.8	14.2	11.0	14.5	15.7	12.9	nst	nst	nst	5.9	7.9	3.3
	Rural	8.7	11.2	5.4	9.7	12.4	6.3	nst	nst	nst	4.9	7.1	2.0
	Urban	22.4	21.2	23.9	24.6	22.9	26.6	nst	nst	nst	9.4	10.7	7.8
HIMACHAL PRADESH	Total	16.1	17.8	14.3	18.6	20.0	17.0	11.6	14.1	9.0	9.7	11.9	7.3
	Rural	13.5	15.6	11.4	15.6	17.6	13.5	9.3	11.8	6.8	8.5	10.9	6.1
	Urban	36.6	32.8	42.2	38.9	34.0	46.2	58.7	56.8	61.1	23.2	23.7	22.6
JAMMU & KASHMIR	Total	12.6	14.3	10.6	14.3	16.2	12.1	4.3	5.2	3.2	5.2	6.0	4.3
	Rural	7.4	9.5	5.1	8.5	11.0	5.8	3.4	4.4	2.3	3.9	4.6	3.0
	Urban	26.9	27.1	26.8	28.1	28.2	28.0	18.2	18.3	18.1	11.2	12.3	9.9
JHARKHAND	Total	14.8	19.8	9.3	18.4	24.3	11.9	8.6	11.2	6.1	7.2	11.4	2.7

States/Union Territories	Total/ Rural/ Urban	All population			Non Scheduled Population			Scheduled Tribes			Scheduled Castes		
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
	Rural	7.2	11.4	2.8	8.8	14.1	3.1	5.4	7.8	3.1	3.9	7.1	0.7
	Urban	35.5	40.7	29.0	37.6	43.0	30.8	34.9	37.8	31.9	18.4	24.7	10.4
KARNATAKA	Total	12.0	15.0	8.8	13.1	15.9	10.0	6.5	9.4	3.3	9.0	12.7	5.1
	Rural	6.9	9.8	3.8	7.4	10.2	4.4	4.7	7.3	1.8	5.9	9.2	2.3
	Urban	20.4	23.6	17.0	21.2	24.2	18.0	14.6	18.8	10.1	16.5	21.0	11.7
KERALA	Total	17.6	16.7	18.4	18.6	17.7	19.4	5.3	5.3	5.3	10.8	9.4	12.1
	Rural	15.9	15.3	16.5	16.9	16.3	17.5	4.9	4.8	4.9	9.6	8.4	10.7
	Urban	22.6	21.0	24.2	23.1	21.5	24.6	17.7	18.9	16.7	16.2	14.0	18.4
MADHYA PRADESH	Total	8.9	11.1	6.4	11.4	13.7	8.7	2.3	3.5	1.1	5.4	7.5	2.9
	Rural	3.6	5.6	1.4	4.7	7.0	2.0	1.3	2.3	0.4	2.8	4.6	0.7
	Urban	21.3	23.5	18.6	23.3	25.4	20.8	13.4	16.3	9.9	12.1	14.8	8.7
MAHARASHTRA	Total	17.3	20.6	13.4	18.3	21.3	14.7	7.8	11.3	4.3	16.7	21.5	11.3
	Rural	12.0	16.8	6.6	12.9	17.6	7.3	5.5	8.8	2.3	13.5	19.1	7.0
	Urban	23.3	24.7	21.5	23.6	24.7	22.2	20.0	23.9	15.8	21.0	24.7	16.8
MANIPUR	Total	33.4	37.8	29.0	37.1	41.6	32.6	27.1	31.6	22.7	33.8	35.4	32.3
	Rural	28.2	32.8	23.7	30.2	34.9	25.5	26.0	30.5	21.6	28.9	29.2	28.6
	Urban	48.0	52.5	43.7	48.8	53.4	44.4	48.5	53.7	43.8	36.6	39.2	34.3
MEGHALAYA	Total	15.0	16.6	13.4	23.5	25.2	21.3	13.5	14.9	12.2	12.1	14.3	9.4
	Rural	7.6	8.9	6.4	11.6	13.5	9.2	7.2	8.3	6.1	10.5	12.1	8.5
	Urban	38.4	41.1	35.8	36.2	38.1	33.8	39.6	42.9	36.8	14.3	17.7	10.7
MIZORAM	Total	9.0	10.5	7.4	4.8	3.8	8.4	9.3	11.2	7.4	12.1	14.3	0.0
	Rural	3.4	4.6	2.1	0.7	0.7	0.7	3.5	4.9	2.1	16.7	20.0	0.0
	Urban	13.9	15.6	12.0	6.9	5.6	11.3	14.5	17.0	12.1	11.1	13.0	0.0
NAGALAND	Total	24.5	27.3	21.5	18.7	18.5	18.9	25.2	28.4	21.7	nsc	nsc	nsc
	Rural	20.3	23.0	17.4	13.9	14.0	13.8	20.7	23.6	17.5	nsc	nsc	nsc
	Urban	45.4	48.4	42.0	23.1	23.0	23.2	54.5	60.6	48.2	nsc	nsc	nsc
ORISSA	Total	13.7	18.0	9.3	17.6	22.5	12.6	4.7	7.2	2.4	8.4	12.2	4.4
	Rural	10.2	14.4	6.1	13.3	18.1	8.5	3.8	6.2	1.6	7.3	11.1	3.4
	Urban	30.0	33.9	25.5	33.4	37.2	29.0	17.4	20.8	13.7	15.2	19.4	10.6
PUNJAB	Total	11.1	10.0	12.4	13.8	12.3	15.6	nst	nst	nst	4.4	4.5	4.4
	Rural	6.6	6.3	6.9	8.2	7.7	8.7	nst	nst	nst	3.3	3.5	3.0
	Urban	19.4	16.5	22.9	22.3	18.8	26.8	nst	nst	nst	7.8	7.4	8.4
RAJASTHAN	Total	8.2	11.0	5.1	9.5	12.0	6.6	5.6	9.8	1.3	4.8	7.4	1.6
	Rural	4.6	7.4	1.5	4.9	7.6	1.9	4.7	8.5	0.7	3.5	6.0	0.5
	Urban	18.1	20.2	15.5	19.7	21.5	17.6	19.2	25.9	10.3	8.9	12.1	5.2
SIKKIM	Total	6.2	6.5	5.9	6.1	6.5	5.7	7.1	7.2	7.0	4.1	4.7	3.6
	Rural	4.9	5.4	4.4	4.9	5.3	4.3	5.6	5.8	5.4	3.1	4.0	2.3
	Urban	15.3	14.2	16.7	14.5	13.5	15.9	21.1	20.1	22.2	10.4	9.1	11.6
TAMIL NADU	Total	9.5	11.1	7.9	10.4	12.1	8.8	2.6	3.9	1.6	5.9	7.6	4.3
	Rural	5.6	7.3	3.9	6.1	7.7	4.3	1.8	2.9	0.9	4.4	6.2	2.7
	Urban	14.2	15.8	12.7	15.1	16.7	13.5	6.5	8.5	4.8	9.0	10.5	7.7

States/Union Territories	Total/ Rural/ Urban	All population			Non Scheduled Population			Scheduled Tribes			Scheduled Castes		
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
TRIPURA	Total	6.2	7.9	4.6	8.8	10.5	7.1	2.3	3.4	1.4	5.2	7.0	3.4
	Rural	4.1	5.6	2.6	5.7	7.4	3.9	1.7	2.7	0.9	4.2	5.8	2.5
	Urban	16.3	18.6	14.1	18.0	20.0	16.0	18.4	21.7	14.8	9.5	12.3	6.9
UTTAR PRADESH	Total	12.6	15.9	8.6	13.9	17.3	9.9	6.0	9.0	2.8	7.3	10.4	3.5
	Rural	9.0	12.9	4.4	9.9	14.0	5.1	4.0	6.9	1.0	6.0	9.2	2.1
	Urban	23.5	24.7	22.1	24.7	25.8	23.4	19.8	21.8	17.1	14.8	16.8	12.2
UTTARANCHAL	Total	17.8	19.6	15.9	19.7	21.4	17.9	14.7	18.7	10.7	9.5	11.8	7.0
	Rural	12.3	15.0	9.6	13.5	16.3	10.9	12.3	16.3	8.2	7.0	9.8	4.1
	Urban	31.6	29.6	34.3	33.3	30.9	36.5	45.2	45.4	45.0	18.9	18.8	19.0
WEST BENGAL	Total	8.6	10.9	6.3	10.3	12.5	7.8	2.5	3.9	1.2	5.0	7.2	2.8
	Rural	5.1	7.3	2.9	5.8	8.1	3.5	2.0	3.3	0.7	4.1	6.2	2.0
	Urban	17.1	19.0	14.9	18.5	20.4	16.4	9.5	11.2	7.7	9.1	11.3	6.8
Union Territories													
ANDAMAN & NICOBAR ISLANDS	Total	7.4	7.4	7.5	7.8	7.7	7.8	3.2	2.7	3.8	7.4	7.4	7.5
	Rural	4.2	4.5	3.9	4.6	4.9	4.2	1.2	1.0	1.3	4.2	4.5	3.9
	Urban	13.4	12.5	14.6	13.1	12.3	14.2	38.4	30.3	47.3	13.4	12.5	14.6
CHANDIGARH	Total	26.7	23.5	31.4	30.0	26.0	36.1	nst	nst	nst	10.4	10.4	10.3
	Rural	6.2	5.6	7.6	6.4	5.6	8.2	nst	nst	nst	5.1	5.1	5.1
	Urban	29.4	26.3	33.7	33.3	29.3	38.8	nst	nst	nst	11.0	11.1	10.8
DADRA & NAGER HAVELI	Total	3.3	3.5	3.0	4.4	3.8	6.5	1.8	2.6	1.2	8.9	12.7	4.9
	Rural	2.2	2.4	1.9	2.8	2.1	5.9	1.4	2.3	0.7	10.6	14.1	6.6
	Urban	6.5	6.3	6.7	6.6	6.5	7.0	5.7	5.0	6.5	6.0	10.0	1.9
DAMAN & DIU	Total	3.9	3.6	4.8	3.9	3.5	4.9	2.3	2.1	2.6	10.3	12.3	7.8
	Rural	2.1	1.9	2.5	1.9	1.8	2.4	1.8	2.0	1.5	9.1	9.3	8.7
	Urban	9.1	10.3	7.8	9.3	10.6	8.0	4.2	2.6	6.1	12.1	17.8	6.8
DELHI	Total	18.2	17.3	19.5	20.4	19.1	22.3	nst	nst	nst	7.9	8.4	7.1
	Rural	10.9	11.1	10.5	12.2	12.2	12.2	nst	nst	nst	5.8	7.0	4.1
	Urban	18.7	17.7	20.1	21.0	19.6	23.0	nst	nst	nst	8.0	8.5	7.4
LAKSHADWEEP	Total	2.7	3.5	1.8	1.7	0.9	6.5	2.7	3.8	1.8	nsc	nsc	nsc
	Rural	3.2	4.3	2.1	1.5	0.6	5.3	3.3	4.6	2.0	nsc	nsc	nsc
	Urban	2.0	2.5	1.5	1.8	1.0	8.3	2.0	2.7	1.4	nsc	nsc	nsc
PONDICHERRY	Total	18.2	21.5	14.9	19.3	22.6	16.2	nst	nst	nst	12.3	16.1	8.6
	Rural	10.4	13.4	7.5	11.1	13.8	8.4	nst	nst	nst	8.5	12.2	5.0
	Urban	22.1	25.7	18.6	22.8	26.3	19.3	nst	nst	nst	16.6	20.6	12.8

Educationally Backward Districts

It needs to be reiterated that in order to assist the educational plans and programmes with respect to higher education during the XIth Plan, this study proposed to replace the literacy rate-based criteria as used during the previous plans with a more significant and rigorous GER-based criteria. The proposal has been found to be a better method for identifying educationally backward districts in the country and has also been accepted both by

the UGC, Planning Commission and the MHRD. It was proposed that districts with GER lower than the national average (12.4) could be used to identify the educationally backward districts. This study found 374 such districts out of the total of 593 that had lower overall GER than 12.4. About 90 out of 374 had GER lower the EBDs.

Table 2:State-wise Distribution of Educationally Backward Districts based on GER (2001)

Total Districts	Educationally Backward Districts (GER based)		All (Below 12.4)	Category A (< 3.0)	Category B (3.1 – 6.0)	Category C (6.1-9.0)	Category D (9.1 – 12.4)
India	12.4	593	374	11	79	144	140
Andhra Pradesh	14.19	23	11	0	0	0	11
Arunachal Pradesh	7.01	13	11	4	6	0	1
Assam	15.28	23	12	0	0	2	10
Bihar	11.95	37	25	0	3	12	10
Chhattisgarh	8.91	16	15	0	4	8	3
Goa	14.96	2	0	0	0	0	0
Gujarat	8.94	25	20	0	8	9	3
Haryana	12.83	15	7	0	0	1	6
Himachal Pradesh	16.12	12	4	0	0	2	2
Jammu & Kashmir	12.58	14	11	0	2	4	5
Jharkhand	14.76	18	12	0	2	5	5
Karnataka	12.04	27	20	0	0	8	12
Kerala	17.6	14	4	0	0	1	3
Madhya Pradesh	8.92	45	39	0	16	18	5
Maharashtra	17.33	35	7	0	0	1	6
Manipur	33.37	9	0	0	0	0	0
Meghalaya	14.97	7	5	0	0	4	1
Mizoram	9.0	8	6	0	4	2	0
Nagaland	24.55	8	2	1	1	0	0
Orissa	13.66	30	18	0	2	7	9
Punjab	11.12	17	13	0	0	5	8
Rajasthan	8.23	32	30	1	11	12	6
Sikkim	6.24	4	4	2	1	0	1
Tamil nadu	9.5	30	26	0	4	13	9
Tripura	6.24	4	4	1	2	1	0
Uttar pradesh	12.57	70	41	0	5	18	18
Uttaranchal	17.81	13	2	0	1	0	1
West bengal	8.63	18	17	0	5	8	4
Union territories							
Andaman & Nicobar Islands	7.42	2	2	1	0	1	0
Dadr & Nagar Haveli	3.30	1	1	0	1	0	0
Daman & Diu	3.91	2	2	0	1	1	0
Delhi	18.21	9	0	0	0	0	0
Lakshadweep	2.67	1	1	1	0	0	0
Pondicherry	18.15	4	1	0	0	0	1

The spatial pattern of disparity across the districts was observed to be very large and every state appear to be having its own share of educationally backward districts in fairly large numbers irrespective of their overall level of development. It is also interesting to note that states that are relatively underdeveloped had relatively

lower number of their districts with GER below the national average while the distribution profile of the better-off states such as Gujarat, Tamil Nadu, Karnataka, Punjab and Haryana showed that much of enrolment in the state was concentrated in a few districts. For example, 20 districts out of 25 in Gujarat had GER below 12.4: the comparable figures for Tamil Nadu were 26/30, Punjab 13/17 and 20/27 for Karnataka. Maharashtra among the relatively better-off states showed more equitable distribution across its districts as was the case with Bihar, UP, Orissa, and Himachal Pradesh. Rajasthan had the highest proportion of districts as the EBDs. At the district level the lowest GER was observed in Tawang (1.7) and the highest in Imphal West (43.3); both are located in the North East having small population size. Among the districts of the major States Hyderabad was way ahead with GER of 32.7 followed by Kottayam (27.3) while the lowest was reported from Dindori (3.2), Barmer (3.7), both in Rajasthan and Nabarangapur (3.5) in Orissa. These districts are preponderantly tribal and suffer from high degree of inaccessibility. It may be worth mentioning that out of 593 districts in 2001 over 200 suffered from various characteristics of remoteness and inaccessibility due not only to terrain conditions but also on account of preponderance of tribal population, higher percentage of geographical area under forest, and frontier nature of some located on the borders of India. The table 3 presents a detailed profile of remoteness and inaccessibility along with qualifying characteristics for different states and union territories.

**Table 3: Distribution of Districts classified as Preponderantly
Tribal, Border, Hilly & Forested (Remoteness)**

Predominantly Tribal Districts (Criteria: % rural tribes to total rural population >25)	% tribes to total rural pop.	Remoteness			% Forest cover to total geographical area of the district.	Summary	
		Border Districts (Criteria:Location)	Hill Districts (Criteria: Physiography)	Forested Districts (Criteria: Forest cover over 40 % of the geographical area of the district)		Districts with common characteristics	Quantifying Characteristics (QC) T=Tribal; B=Border; H=Hilly; F=Forest
Andhra Pradesh	% ST			Andhra Pradesh	% FC	Andhra Pradesh	QC
Khammam	31.0	*	*	Khammam (T)	44.8	Kammam	TF
Arunachal Pradesh	% ST	Arunachal Pradesh	Arunachal Pradesh	Arunachal Pradesh	% FC	Arunachal Pradesh	
East Kameng	50.2	East Kameng	East Kameng	East Kameng	93.4	East Kemeng	TBHF
Lower Subansiri	93.9	Lower Subansiri	Lower Subansiri	Lower Subansiri	72.2	Lower Subansiri	TBHF
Papum Pare	69.5	*	Papum Pare	Papum Pare		Papum Pare	THF
Tawang	87.6	Tawang	Tawang	Tawang	88.6	Tawang	TBHF
West Kameng	87.6	*	West Kameng	West Kameng	68.1	West Kameng	THF
*	*	Upper Siang	Upper Siang	Upper Siang	94.7	Upper Siang	BHF
*	*	Dibang Valley	Dibang Valley	Dibang Valley	78.3	Dibang Valley	BHF
*	*	Lohit	Lohit	Lohit	79.4	Lohit	BHF
*	*	Changlang	Changlang	Changlang	88.3	Changlang	BHF
*	*	Tirap	Tirap	Tirap	92.0	Tirap	BHF
*	*	Upper Subansiri	Upper Subansiri	Upper Subansiri	81.6	Upper Subansiri	BHF
*	*	West Siang	West Siang	West Siang	80.7	West Siang	BHF
*	*		East Siang	East Siang	55.9	East Siang	BHF

Assam	% ST	Assam	Assam	Assam	% FC	Assam	QC
*		Dhubri	*	*	*	Dhubri	B
Dhemaji	49.5	*	*	*	*	Dhemaji	T
Karbi Anglong	57.8	*	Karbi Anglong	Karbi Anglong	76.4	Karbi Anglong	THF
Kokrajhar	34.8	*	*	Kokrajhar	43.0	Kokrajhar	TF
Lakhimpur	25.0	*	*	*	*	Lakhimpur	T
North Cachar Hills	81.2	*	North Cachar Hills	North Cachar Hills	87.1	North Cachar Hills	THF
*	*	*	Naogaon (H)	*	*	Naogaon	H
*	*	*	*	Tinshukia	40.9	Tinshukia	F
*	*	*	*	Cachar	54.1	Cachar	F
*	*	*	*	Hailakandi	50.9	Hailakandi	F
Chhattisgarh	% ST	Chhattisgarh	Chhattisgarh	Chhattisgarh	% FC	Chattisgarh	QC
Bastar	71.6	*	*	Bastar	54.8	Bastar	TF
Dandewada	82.4	*	*	Dantewada	68.4	Dandewada	TF
Dhamtari	28.8	*	*	*	*	Dhamtari	T
Jashpur	64.5	*	*	*	*	Jashpur	T
Kanker	57.8	*	*	Kanker	50.7	Kanker	TF
Korba	57.2	*	*	Korba	50.3	Korba	TF
Koriya	57.1	*	*	Koriya	61.6	Koriya	TF
Mahasamand	29.5	*	*	*		Mahasamand	T
Raigarh	39.1	*	*	*		Raigarh	T
Rajnandgaon	31.0	*	*	Rajnandgaon	45.1	Rajnandgaon	TF
Sarguja	57.4	*	*	Surguja	45.6	Sarguja	TF
Gujarat	% ST	Gujarat	Gujarat	Gujarat	% FC	Gujarat	QC
Bharuch	39.9	*	*	*	*	Bharuch	T
Dahod	76.8	*	*	*	*	Dahod	T
Narmada	83.6	*	*	*	*	Narmada	T
Navsari	59.9	*	*	*	*	Navsari	T
Punch Mahal	30.6	*	*	*	*	Punch Mahal	T
Surat	63.5	*	*	*	*	Surat	T
The Dangs	93.8	*	*	The Dangs (T)	80.4	The Dangs	TF
Vadodara	44.5	*	*	*	*	Vadodara	T
Valsad	68.2	*	*	*	*	Valsad	T
*	*	Kachch	*	*	*	Kachch	TB
Himachal Pradesh	% ST	Himachal Pradesh	Himachal Pradesh	Himachal Pradesh	% FC	Himachal Pradesh	QC
Chamba	27.1	*	*	*	*	Chamba	T
Kinnaur	71.8	1. Kinnaur	Kinnaur	*	*	Kinnaur	TBH
Lahul & Spiti	73.0	2. Lahul & Spiti	Lahul & Spiti	*	*	Lahul & Spiti	TBH
*	*	*	Hamirpur (H)	*	*	Hamirpur (H)	H
*	*	*	Kangra (H)	*	*	Kangra (H)	H
*	*	*	Kullu (H)	*	*	Kullu (H)	H
*	*	*	Mandi (H)	Mandi (H)	41.9	Mandi (H)	HF
*	*	*	Shimla (H)	Shimla (H)	47.6	Shimla (H)	HF

*	*	*	Sirmaur (H)	Sirmaur (H)	39.4	Sirmaur (H)	HF
*	*	*	Solan (H)	*	*	Solan (H)	H
*	*	*	Una (H)	Una (H)	39.1	Una (H)	HF
*	*	*	Bilaspur (H)	*	*	Bilaspur (H)	H
Jammu & Kashmir	% ST	Jammu & Kashmir	Jammu & Kashmir	Jammu & Kashmir	% FC	Jammu & Kashmir	QC
Kargil	88.3	Kargil	Kargil	*	*	Kargil	TBH
Leh (Ladakh)	82.0	Ladakh (Leh)	Leh (Ladakh)	*	*	Leh (Ladakh)	TBH
Punch	42.4	Punch	Punch	Punch	45.2	Punch	TBHF
Rajauri	35.2	Rajauri	Rajauri	*	*	Rajauri	TBH
*	*	Kupwara	Kupwara	*	*	Kupwara	BH
*	*	Badgam	Badgam	*	*	Badgam	BH
*	*	Jammu	Jammu	*	*	Jammu	BH
*	*	Baramula	Baramula	*	*	Baramula	BH
*	*	*	Anantnag	*	*	Anantnag	H
*	*	*	Doda	*	*	Doda	H
*	*	*	Kathua	Kathua	42.6	Kathua	HF
*	*	*	Pulwama	*	*	Pulwama	H
*	*	*	Srinagar	*	*	Srinagar	H
*	*	*	Udhampur	*	*	Udhampur	H
Jharkhand	% ST	Jharkhand	Jharkhand	Jharkhand	% FC	Jharkhand	QC
Dumka	42.3	*	*	*	*	Dumka	T
Gumla	70.2	*	*	*	*	Gumla	T
Lohardaga	60.3	*	*	*	*	Lohardaga	T
Pakur	46.6	*	*	*	*	Pakur	T
Paschim Singbhum	60.2	*	*	*	*	Paschim Singbhum	T
Purbi Singhbhum	49.3	*	*	*	*	Purbi Singhbhum	T
Ranchi	53.3	*	*	*	*	Ranchi	T
Sahibganj	32.1	*	*	*	*	Sahibganj	T
*	*	*	*	Chatra	50.8	Chatra	TF
*	*	*	*	Kodarma	42.9	Kodarma	TF
*	*	*	*	Palamu	44.6	Palamu	TF
Madhya Pradesh	% ST	Madhya Pradesh	Madhya Pradesh	Madhya Pradesh	% FC	Madhya Pradesh	QC
Barwani	76.0	*	*	*	*	Barwani	T
Betul	46.7	*	*	*	*	Betul	T
Chhindwara	42.5	*	*	*	*	Chhindwara	T
Dhar	61.8	*	*	*	*	Dhar	T
Dhindori	66.6	*	*	*	*	Dhindori	T
East Nimar	39.2	*	*	*	*	East Nimar	T
Harda	32.6	*	*	*	*	Harda	T
Jabalpur	27.8	*	*	*	*	Jabalpur	T
Jhabua	92.2	*	*	*	*	Jhabua	T

Katni	27.1	*	*	*	*	Katni	T
Mandla	64.0	*	*	Mandla	47.7	Mandla	TF
Ratlam	35.5	*	*	*	*	Ratlam	T
Seoni	40.1	*	*	*	*	Seoni	T
Shadol	54.4	*	*	*	*	Shadol	T
Sheopur	25.0	*	*	Sheopur	56.8	Sheopur	TF
Sidhi	33.2	*	*	*	*	Sidhi	T
Umaria	48.2	*	*	Umaria	44.1	Umaria	TF
West Nimar	40.4	*	*	*	*	West Nimar	T
*	*	*	*	Balaghat	52.8	Balaghat	F
Maharashtra	% ST	Maharashtra	Maharashtra	Maharashtra	% FC	Maharashtra	QC
Dhule	33.3	*	*	*	*	Dhule	T
Gadchiroli	40.4	*	*	Gadchiroli	69.8	Gadchiroli	TF
Nashik	35.5	*	Nashik	*	*	Nashik	TH
Nandurbar	74.7	*	*	*	*	Nandurbar	T
Thane	47.0	*	*	*	*	Thane	T
*	*	*	Raigarh	*	*	Raigarh	TH
*	*	*	Kolhapur	*	*	Kolhapur	H
*	*	*	Pune	*	*	Pune	H
*	*	*	Ratnagiri	*	*	Ratnagiri	H
*	*	*	Satara	*	*	Satara	H
*	*	*	Sindhudurg	Sindhudurg	45.7	Sindhudurg	HF
Manipur	% ST	Manipur	Manipur	Meghalaya	% FC	Meghalaya	QC
Chandel	98.3	Chandel	Chandel	Chandel	82.0	Chandel	TBHF
Churachandpur	93.2	*	Churachandpur	Churachandpur	91.3	Churachandpur	THF
Senapati	78.5	*	Senapati	Senapati	71.6	Senapati	THF
Tamenglong	95.4	*	Tamenglong	Tamenglong	89.5	Tamenglong	THF
Ukhrul	95.5	Ukhrul	Ukhrul	Ukhrul	77.6	Ukhrul	TBHF
*	*	*	Imphal East	*	*	Imphal East	H
*	*	*	Imphal West	*	*	Imphal West	H
*	*	*	Thoubal	*	*	Thoubal	H
*	*	*	Bishnupur	*	*	Bishnupur	H
Meghalaya	% ST	Meghalaya	Meghalaya	Meghalaya	% FC	Meghalaya	QC
East Garo Hills	98.3	East Garo Hills	East Garo Hills	East Garo Hills		East Garo Hills	TBHF
East Khasi Hills	92.8	East Khasi Hills	East Khasi Hills	East Khasi Hills	84.8	East Khasi Hills	TBHF
Jaintia Hills	96.4	Jaintia Hills	Jaintia Hills	Jaintia Hills	90.4	Jaintia Hills	TBHF
South Garo Hills	97.1	*	South Garo Hills	South Garo Hills	50.7	South Garo Hills	THF
West Garo Hills	77.3	West Garo Hills	West Garo Hills	West Garo Hills	69.8	West Garo Hills	TBHF
West Khasi Hills	98.3	West Khasi Hills	West Khasi Hills	West Khasi Hills	56.6	West Khasi Hills	TBHF
Ri Boi	87.3	*	Ri Bhoi	Ri Bhoi	74.2	Ri Boi	THF
Mizoram	% ST	Mizoram	Mizoram	Mizoram	% FC	Mizoram	QC
Aizawl	96.8	*	Aizawl	Aizawl	87.1	Aizawl	THF

Champhai	98.1	Champhai	Champhai	Champhai	77.7	Champhai	TBHF
Kolasib	90.9	*	Kolasib	Kolasib	95.7	Kolasib	THF
Laungtlai	95.4	Laungtlai	Laungtlai	Laungtlai	73.0	Laungtlai	TBHF
Lunglei	97.1	Lunglei	Lunglei	Lunglei	80.6	Lunglei	TBHF
Mamit	94.9	Mamit	Mamit	Mamit	89.9	Mamit	TBHF
Saiha	96.8	Saiha	Saiha	Saiha	81.1	Saiha	TBHF
Serchhip	97.9	*	Serchhip	Serchhip	84.7	Serchhip	THF
Nagaland	% ST	Nagaland	Nagaland	Nagaland	% FC	Nagaland	QC
Dimapur	74.2	*	Dimapur	Dimapur	46.0	Dimapur	THF
Kohima	95.0	*	Kohima	Kohima	88.2	Kohima	THF
Molokchung	95.8	*	Mokokchung	Mokokchung	86.6	Molokchung	THF
Mon	94.6	Mon	Mon	Mon	76.1	Mon	TBHF
Phek	98.0	Phek	Phek	Phek	77.6	Phek	TBHF
Tuensang	97.4	Tuensang	Tuensang	Tuensang	78.5	Tuensang	TBHF
Wokha	96.9	*	Wokha	Wokha	87.5	Wokha	THF
Zunhebito	97.5	*	Zunheboto	Zunheboto	82.0	Zunhebito	THF
Orissa	% ST	Orissa	Orissa	Orissa	% FC	Orissa	QC
Debagarh	34.5	*	*	Debagarh	46.2	Debagarh	TF
Gajapada	56.7	*	*	Gajapada	59.0	Gajapada	TF
Jharsuguda	40.1	*	*	*	*	Jharsuguda	T
Kalahandi	30.4	*	*	*	*	Kalahandi	T
Kandhmal	54.7	*	*	*	*	Kandhmal	T
Kendujhar	47.8	*	*	Kendujhar	40.7	Kendujhar	TF
Koraput	56.5	*	*	*	*	Koraput	T
Malkangiri	60.6	*	*	*	*	Malkangiri	T
Mayurbhanj	59.5	*	*	Mayurbhanj	39.7	Mayurbhanj	TF
Nabarangapur	57.8	*	*	*	*	Nabarangapur	T
Nupada	36.3	*	*	*	*	Nupada	T
Raygada	62.8	*	*	Raygada	38.6	Raygada	TF
Sambalpur	43.1	*	*	Sambalpur	49.4	Sambalpur	TF
Sundergarh	66.4	*	*	Sundergarh	42.2	Sundergarh	TF
*	*	*	*	Nayagarh	43.8	Nayagarh	F
*	*	*	*	Angul	41.6	Angul	F
*	*	*	*	Boudh	41.3	Boudh	F
Punjab	% ST	Punjab	Punjab	Punjab	% FC	Punjab	QC
*	*	Ferozpur	*	*	*	Ferozpur	B
*	*	Amritsar	*	*	*	Amritsar	B
*	*	Gurdaspur	*	*	*	Gurdaspur	B
Rajasthan	% ST	Rajasthan	Rajasthan	Rajasthan	% FC	Rajasthan	QC
Banswara	77.0	*	*	*	*	Banswara	T
Baran	24.9	*	*	*	*	Baran	T
Chittorgarh	24.9	*	*	*	*	Chittorgarh	T
Dungarpur	65.1	*	*	*	*	Dungarpur	T

Udaipur	57.5	*	*	*	*	Udaipur	T
*	*	Ganganagar	*	*	*	Ganganagar	TB
*	*	Bikaner	*	*	*	Bikaner	TB
*	*	Jaisalmer	*	*	*	Jaisalmer	TB
*	*	Barmer	*	*	*	Barmer	TB
Sikkim	% ST	Sikkim	Sikkim	Sikkim	% FC	Sikkim	QC
North Sikkim	53.8	North Sikkim	North Sikkim	*	*	North Sikkim	TBH
*	*	East Sikkim	East Sikkim	East Sikkim	70.2	East Sikkim	BHF
*	*	*	Sourth Sikkim	Sourth Sikkim	68.0	Sourth Sikkim	HF
*	*	West Sikkim	West Sikkim	West Sikkim	61.1	West Sikkim	BHF
Tripura	% ST	Tripura	Tripura	Tripura	% FC	Tripura	QC
Dhalai	56.8	Dhalai	*	*	*	Dhalai	TB
Tripura North	28.2	Tripura North	Tripura North	Tripura North	67.1	Tripura North	TBHF
Tripura South	40.4	Tripura South	Tripura South	Tripura South	70.5	Tripura South	TBHF
Tripura West	32.7	Tripura West	Tripura West	Tripura West	64.1	Tripura West	TBHF
Uttaranchal	% ST	Uttaranchal	Uttaranchal	Uttaranchal	% FC	Uttaranchal	QC
*	*	*	Almora	Almora	47.6	Almora	HF
*	*	*	Bageshwar	Bageshwar	57.8	Bageshwar	HF
*	*	Chamoli	Chamoli	*	*	Chamoli	BH
*	*	Champawat	Champawat	Champawat	63.7	Champawat	BHF
*	*	*	Dehradun	Dehradun	48.1	Dehradun	HF
*	*	*	Garhwal	Garhwal	59.0	Garhwal	HF
*	*	*	Haridwar	*	*	Haridwar	H
*	*	*	Nainital	Nainital	73.1	Nainital	HF
*	*	Pithoragarh	Pithoragarh	*	*	Pithoragarh	BH
*	*	*	Rudra Prayag	Rudra Prayag	58.1	Rudra Prayag	HF
*	*	*	Tehri Garhwal	Tehri Garhwal	56.7	Tehri Garhwal	HF
*	*	*	Udhamsingh Nagar	*	*	Udhamsingh Nagar	H
*	*	Uttarkashi	Uttarkashi	*	*	Uttarkashi	BH
West Bengal	% ST	West Bengal	West Bengal	West Bengal	% FC		QC
*	*	Darjeeling	Darjeeling	Darjeeling	69.7	Darjeeling	BHF
*	*	Koch Behar	*	*	*	Koch Behar	B
*	*	Uttar Dinajpur	*	*	*	Uttar Dinajpur	B
*	*	Dakshin Dinajpur	*	*	*	Dakshin Dinajpur	B
*	*	Maldah	*	*	*	Maldah	B
*	*	Murshidabad	*	*	*	Murshidabad	B
*	*	Nadai	*	*	*	Nadai	B
*	*	North 24 Parganas	*	*	*	North 24 Parganas	B
Andman & Nicobar Islands	% ST	Andman & Nicobar Islands	Andman & Nicobar Islands	Andman & Nicobar Islands	% FC	A&H ILS.	QC
Nicobar	63.2	*	*	*	*	Nicobar	T

Dadar & Nagar Haveli	% ST	Dadar & Nagar Haveli	Dadar & Nagar Haveli	Dadar & Nagar Haveli	% FC	D&NH	QC
Dadar & Nagar Haveli	74.9	*	*	*	*	Dadar & Nagar Haveli	T
Lakshadweep	% ST	Lakshadweep	Lakshadweep	Lakshadweep	% FC	Lakshadweep	QC
Lakshadweep	95.6	*	*	Lakshadweep	85.9	Lakshadweep	TF

* Relevant District in the repective row not qualifying the criteria mentioned in the column.

Source: Census of India, 2001; Ministry of Environment & Forest; NATMO

While remoteness and social characteristics could be associated with enrolment in higher education in more than one ways, though direct relationship between enrolment and social characteristics may not always yield a linear relationship, it would not be incorrect to suggest that, other things remaining the same, availability of educational facilities and infrastructure supports such as hostels, laboratories, libraries, and teachers play the quintessential role in promoting educational enrolment at all levels of education. It was observed that a large number of districts that have been identified as the EBDs were also deficient in terms of availability of colleges of general education, not to mention professional and technical colleges. It is well known that the process of establishing colleges of different types are not governed by any standard norm and that given the nature of demand for higher education in the country most of the colleges are likely to be located in and around the urban areas or nodal centres leaving vast rural areas little served. The geographical spread of enrolment is also associated with the development of transport network and mobilization of resources through caste-based and social reform organizations, which had played important role in harnessing support for establishment of colleges in Kerala, Maharashtra, Bihar and UP.

Availability of Educational Institutions

This study also captures the supply side picture in terms of availability of colleges and other educational institutions imparting degree courses. The availability of educational institutions is measured by college-population index (C-PI), i.e. number of colleges per lakh population in the age-group 18-23. The summary of state level distribution by types of educational institutions is presented in table 4 below.

The availability of educational institutions of all types for the country as a whole stood at 12.4 per lakh population. The C-PI for colleges of general education in 2001-2002 was 8; professional colleges 2.2 while for agricultural, technical, medical and others it was below 1. The index was observed to be very high for some of the states with small population size such as Pondicherry, Manipur, Goa, and Mizoram: each with 20 colleges per lakh population. Among the populous states only Karnataka had comparable figures. A many as 14 states had C-PI lower than the national average, while the lowest value was observed in West Bengal. Maharashtra, MP, Uttaranchal, Orissa and Andhra Pradesh were better-off with higher levels of college availability. The number of professional colleges was found to be higher than others in J&K, Maharashtra, Karnataka, Andhra Pradesh and Goa. It was lowest in Bihar followed closely by Jharkhand, West Bengal, Tamil Nadu, UP, and Himachal Pradesh where it was 1 or less. In the context of technical colleges Andhra Pradesh led the list while Goa, Tamil Nadu and Maharashtra followed closely. Goa, Karnataka, and Sikkim shared the rank at the highest levels for the medical colleges, while Uttaranchal, UP and Chhattisgarh had good number of colleges imparting degrees in classical languages, theology, art and culture including oriental studies. Delhi which has a special reputation as an important educational centre in India, especially in the North has very low availability of all types of institutions.

Table 5 presents the distribution of districts across states by categories of C-PI, which amply shows the magnitude of inter-district disparities in the availability of colleges for higher education in India. Out of 593 districts about 352 had C-PI lower than the national average. Interestingly about 15 districts did not report any college during 2001-2, while about 76 districts had fewer than 4 colleges. In this category as many as 18 districts of UP had very low supply of colleges with Bihar, and Rajasthan following with as many as 12 districts. As many as 50 districts of UP had lower availability of colleges than the national average. MP, Rajasthan, Jharkhand, Bihar, Tamil Nadu and WB took a large proportion of districts suffering from serious supply constraints in the area of higher education. Maharashtra, Karnataka, Andhra Pradesh and Orissa presented a much better picture of college availability than others.

It is not surprising that the number of EBDs and the picture obtained from the availability of colleges at the district levels are strikingly similar. This is not to suggest that there is an absolute correspondence between the two lists, but one can easily note very high degree of commonality between the two. Most of the districts having very poor GER especially those under categories A & B of table 2 and table 5 are largely the same, indicating the degree of association between GER and availability of educational institutions.

Table 4: College Population Index by Types of Educational Institutions, 2002

State	Colleges of General Education	Professional Colleges	Agricultural & Vet.	Technical	Medical	Others	All Colleges	Women's Colleges
1	2	3	4	5	6	7	8	9
India	8.1	2.2	0.1	0.9	0.9	0.9	12.4	3.3
Andhra Pradesh	12.3	3.5	0.2	2.6	1.1	0.7	15.9	4.4
Arunachal Pradesh	7.8	0.0	0.0	0.0	0.9	0.0	7.8	0.0
Assam	9.5	1.9	0.2	0.1	0.2	0.1	10.8	2.0
Bihar	5.5	0.4	0.1	0.1	0.4	1.5	7.2	2.1
Chhattisgarh	11.6	1.6	0.1	0.6	0.4	0.9	12.6	2.9
Goa	12.3	3.5	0.0	2.3	4.7	2.9	26.9	3.8
Gujarat	6.8	2.9	0.2	0.4	1.0	0.5	12.0	2.8
Haryana	8.8	2.3	0.2	1.2	0.6	0.1	10.8	6.4
Himachal Pradesh	11.4	1.0	0.6	0.3	1.1	1.0	15.4	2.3
Jammu & Kashmir	3.6	5.5	0.2	0.4	0.6	1.1	11.2	2.2
Jharkhand	5.6	0.6	0.1	0.1	0.3	0.0	6.7	2.2
Karnataka	14.4	4.7	0.2	1.3	4.6	0.4	21.5	5.2
Kerala	6.5	2.2	0.1	1.4	0.6	0.6	9.4	1.8
Madhya Pradesh	10.4	2.2	0.0	0.7	0.6	0.5	18.5	2.8
Maharashtra	11.0	5.4	0.1	1.5	0.6	0.4	19.2	2.7
Manipur	20.4	2.8	0.0	0.0	0.4	1.1	24.7	10.8
Meghalaya	16.1	2.7	0.0	0.4	0.4	0.0	19.2	2.3
Mizoram	23.0	2.6	0.0	0.0	0.9	0.0	23.0	3.5
Nagaland	12.9	1.4	0.4	0.0	0.0	0.0	14.7	1.4
Orissa	13.7	1.4	0.1	0.5	0.5	1.1	17.6	3.7

Punjab	6.8	1.7	0.1	0.7	1.2	0.1	10.7	6.4
Rajasthan	5.3	1.3	0.1	0.3	0.4	0.7	8.0	4.0
Sikkim	4.2	2.8	0.0	1.4	4.2	0.0	17.0	0.0
Tamil Nadu	6.1	1.1	0.2	1.9	2.3	0.3	11.6	4.0
Tripura	3.9	1.1	0.0	0.3	0.3	0.6	6.4	0.0
Uttar Pradesh	5.0	1.1	0.1	0.6	0.3	2.8	10.2	2.5
Uttaranchal	9.4	2.8	0.6	0.9	0.9	5.0	19.6	3.4
West bengal	4.2	0.8	0.0	0.2	0.4	0.9	5.63	1.4
UTs								
Andaman & Nicobar Islands	4.2	2.1	0.0	0.0	2.1	0.0	4.2	0.0
Chandigarh	16.8	4.0	0.0	3.2	5.6	1.6	18.3	23.6
Dadar & Nagar Haveli	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Daman & Diu	3.4	3.4	0.0	0.0	0.0	0.0	4.7	0.0
Delhi	3.9	2.8	0.0	0.7	0.7	0.5	7.7	2.9
Lakshadweep	14.3	0.0	0.0	0.0	0.0	0.0	28.6	0.0
Pondicherry	11.5	4.9	0.8	2.5	3.3	0.8	27.8	3.2

Table 5: State wise distribution of districts by categories of College-Population Index, 2002

States/UTs	Total number of districts, 2001	College-Population Index below National Average= 12.0colleges per lakh population in 18-23 age-group)				
		No college reported or CPI < 1.0 Category A	CPI 1.1 - 4.0 Category B	CPI 4.1 - 8.0 Category C	CPI 8.1 - 12.0 Category D	Total no. of Districts with C-PI below 12..0
India	593	15	76	146	115	352
Andhra Pradesh	23	0	1	2	4	7
Arunachal Pradesh	13	5	0	3	4	12
Assam	23	0	0	7	9	16
Bihar	37	1	12	14	5	32
Chhattisgarh	16	1	2	3	1	7
Goa	2	0	0	0	0	0
Gujarat	25	0	1	5	9	15
Haryana	19	0	0	5	8	13
Himachal Pradesh	12	0	0	1	3	4
Jammu & Kashmir	14	0	2	9	1	12
Jharkhand	18	1	4	7	6	18
Karnataka	27	0	0	1	4	5
Kerala	14	0	0	7	3	10
Madhya Pradesh	45	0	3	10	15	28
Maharashtra	35	1	2	2	0	5
Manipur	9	0	1	2	0	3
Meghalaya	7	1	0	2	1	4
Mizoram	8	0	0	1	2	3
Nagaland	8	0	1	3	2	6
Orissa	30	0	2	2	5	9

Punjab	16	0	2	3	7	12
Rajasthan	33	1	12	9	3	25
Sikkim	4	2	0	0	1	3
Tamil Nadu	30	0	2	10	10	22
Tripura	4	0	1	3	0	4
Uttar Pradesh	70	0	18	22	10	50
Uttaranchal	13	0	2	1	1	4
West Bengal	18	0	8	8	1	17
Union Territories						0
Andaman & Nicobar Islands	2	1	0	1	0	2
Chandigarh	1	0	0	0	0	0
Dadr & Nagar Haveli	1	1	0	0	0	1
Daman & Diu	2	0	0	2	0	2
Delhi	0	0	0	1	0	1
Lakshadweep	1	0	0	0	0	0
Pondicherry	4	0	0	0	0	0

Source: Census of India, 2001 and Directory of Colleges, 2002 UGC, New Delhi

   *   Aggregated for all 9 districts of Delhi as district wise statistics was not available.

Supply-side constraints as revealed by C-PI could be important but equally significant is the fact that our colleges have to bear with large size of enrolment. This phenomenon is particularly noticeable in the context of old and reputed colleges. In such colleges classrooms are crowded and more often the rooms do not have the requisite numbers to accommodate. Most of such colleges have to admit students in excess of the sanctioned intake. And this feature is common across the states. On the other hand, there are also colleges that have fewer enrolments; some could even invite disqualification on this account. Crowded classrooms means lower availability of space for teacher-taught interaction, lower supply of equipments and per-capita availability of laboratory time and availability of books etc. All these have a significant bearing on the quality of education. Poor quality means higher drop outs and slower growth. Poor quality of education affects the importance of education to redundancy.

Table 6 shows the distribution of districts by the average size of enrolment per college. An estimate based on the self-assessment reports provided by colleges seeking accreditation from NAAC during 2002-2004 suggests that the average enrolment size per college stood in the region of 1000. The study based on the sample of over 1400 colleges is reported for various characteristics in table 7. It was observed that colleges with higher NAAC grades had more enrolment than others. Even for the non-accredited colleges the size of enrolment was not very low. It is amply clear from table 6 that there were about 20 districts in the country distributed well across the country with over 4000 students per college. In fact, the number of districts having average size of enrolment per college in excess of 1000 was observed to be over 300. While this study did not attempt to examine any correspondence between GER and size of enrolment as high size of enrolment is both a reflection of shortage of colleges as well as high population size. However, it could be instructive to note that some of the low GER states such as Jharkhand, WB, UP and Rajasthan had very high size of enrolment per college. On the other hand, some others having low GER had fewer than 1000 enrolled per college (Table 6). This suggests that expansion of educational institutions is urgently required not only to facilitate additional enrolment but also to take the load off from the existing colleges. Enrolment in higher education is more a matter of choice and

selection of institution is guided by a variety of considerations; reputation being the foremost among them. Thus the question of rationalization in enrolment by redistributing the excess load to other colleges is neither feasible nor advisable.

One of the most important ways through which overcrowding could be tackled is by taking measures to improve both the physical infrastructure as well as the intellectual resources by appointment of well-qualified teachers. It may not be out of context to mention that a large number of sanctioned teaching posts in colleges run by the state governments are allowed to go unfilled due to a variety of reasons including the financial burden.

As already noted that the size of enrolment colleges relatively better endowed in terms of various curricular, co-curricular and extra-curricular facilities was nearly 1.5 to 2 times higher than colleges poorer in infrastructure. NAAC grades reflect a sum of overall status of the college with regard to both physical infrastructure and academic and learning processes. The study carried out of over 1400 sample colleges presented in table 8 is by no means representative of the overall status of colleges in India. Firstly, only such colleges that have a reasonable degree of physical infrastructure and academic credentials generally seek NAAC accreditation. Seeking accreditation itself is a reflection of active and motivated college administration. Secondly, the sample is not drawn from various rural and urban localities and states in any representative manner. In spite of these limitations, the estimates do throw up a number of important inferences with regard to quality and quantity in higher education.

Table 6: Distribution of districts by Size of Enrolment per College

State	Enrolment size per college									Total	Average enrolment per college (Actuals), 2002
	No College, No Enrolment in Hr. Education	Less than 500	501-1000	1001-1500	1501-2000	2001-2500	2501-3000	3001-4000	Above 4001		
1	2	3	4	5	6	7	8	9	10	11	12
India	11	50	227	116	81	31	39	18	20	593	
Andhra Pradesh	0	0	16	3	1	0	1	1	1	23	1176
Arunachal Pradesh	5	4	2	0	1	0	1	0	0	13	544
Assam	0	0	4	11	5	2	1	0	0	23	1431
Bihar	1	0	3	6	12	6	4	3	2	37	2142
Chhattisgarh	1	4	4	2	0	2	1	0	2	16	1308
Goa	0	1	1	0	0	0	0	0	0	2	613
Gujarat	0	4	15	2	4	0	0	0	0	25	843
Haryana	0	0	5	9	2	3	0	0	0	19	1670
Himachal Pradesh	0	2	6	1	2	0	1	0	0	12	1099
Jammu & Kashmir	0	0	4	5	2	0	1	1	1	14	1688
Jharkhand	0	0	1	4	4	2	4	2	1	18	2241
Karnataka	0	8	17	2	0	0	0	0	0	27	647
Kerala	0	0	0	2	8	1	3	0	0	14	1925
Madhya Pradesh	0	4	39	1	0	1	0	0	0	45	730

Maharashtra	0	4	24	2	0	1	1	1	2	35	1531
Manipur	0	0	2	3	1	0	0	1	2	9	3309
Meghalaya	1	1	3	2	0	0	0	0	0	7	774
Mizoram	0	7	1	0	0	0	0	0	0	8	383
Nagaland	0	0	1	1	1	1	0	2	2	8	2889
Orissa	0	3	20	4	1	1	1	0	0	30	922
Punjab	0	0	8	6	1	0	1	1	0	17	1255
Rajasthan	0	2	9	8	6	0	1	2	2	30	1721
Sikkim 12	2	2	0	0	0	2	0	0	0	6	170
Tamil Nadu	0	2	13	10	3	1	1	0	0	30	1096
Tripura	0	0	4	0	0	0	0	0	0	4	919
Uttar Pradesh	0	1	13	18	20	5	5	4	4	70	1817
Uttaranchal	0	0	6	4	1	0	1	0	1	13	1366
West bengal	0	0	2	6	5	3	2	0	0	18	1694
UTs											
Andaman & Nicobar Islands	1	0	0	0	1	0	0	0	0	2	1711
Chandigarh	0	0	0	1	0	0	0	0	0	1	1459
Dadar & Nagar Haveli	0	0	0	1	0	0	0	0	0	1	0
Daman & Diu	0	0	0	2	0	0	0	0	0	2	1089
Delhi	0	0	0	0	0	0	9	0	0	9	2639
Lakshadweep	0	0	1	0	0	0	0	0	0	1	95
Pondicherry	0	1	3	0	0	0	0	0	0	4	611

Out of 1473 colleges included in the all-India sample, 110 received A or higher NAAC accreditation. Those having received B+ or higher were 547 while 285 did not receive any. In other words, one may imply that about 20 percent colleges were not fit for any form of accreditation by NAAC as they were found deficient on several counts as per the norms laid down by NAAC. NAAC grades indicate that the student-teacher ratio in A or above colleges were significantly lower despite higher enrolment. When only permanent teacher were considered then the STR rose significantly to 29 students per teacher which was about 9 points higher than B-grade colleges but higher than the figure arrived at by the SES data. On the contrary, one also observed that the percentage of permanent teachers was the lowest for A or above-grade colleges and that nearly one-thirds of teachers were either temporary or part-time. The proportion of part-time teachers in non-accredited colleges was the highest. If colleges with higher NAAC ratings are invariably those which are also old then it makes it amply clear that the post against which the temporary appointments have been made have fallen vacant due to natural attrition. And delay in regular appointments may eventually affect the academic environment which may not be desirable for good institutions. The need of the hour would be to strengthen and stabilize the academic environment in better-grade colleges for others to emulate. In terms of library facilities, the higher grade colleges had over 1.5 times larger collection of titles than the average for the sample while they were 2.7 times better-off than C-grade colleges. The A or above-grade colleges received two-times more number of journals than their immediate next grade college and 5.5 times more than the C-grade college. The A or above-grade colleges had more number of computer terminals and organized two times higher number of seminars/symposia than the B-grade colleges. The other distinctive features of colleges with higher grades are: higher percentage of them having hostels, teachers housing and auditoriums/seminar halls. These features are instructive for benchmarking quality and quantity in higher education.

Table 7: Some aspects of availability of facilities and quality in select institutions of Higher Education, 2002-2004

Indicators	NAAC Grades					
	A & Above	**B++ & B+**	**B only**	**C++,C+ & C**	**Non-Accredited**	**Total**
No. of Sample Colleges	110	547	298	233	285	1473
STR (Student Teacher ratio)	20.4	31.8	28.6	28.5	25.2	25.0
STR by Permanent teachers	29.8	31.8	38.1	35.8	35.6	33.5
No of Books per student	9.5	10.7	6.4	7.4	7.0	8.8
No of Books per college	15215	13921	7019	6504	6748	9882
No. of Journals per college	22.2	13.0	6.1	4.4	4.0	10.0
Students per Computer	145.2	143.8	251.3	546.7	202.7	258.0
Average number of Enrolled Students per college	1603	1301	954	885	960	1140
Organised Workshops/Seminars	54.5	27.2	17.4	17.4	20.0	24.3
Facilities available (Percent colleges having)						
Library	94.5	91.6	90.9	82.4	90.2	90.0
Computer Centre	86.4	83.7	76.8	64.0	74.7	77.7
Health Centre	74.5	53.7	48.7	36.4	48.1	50.4
Sports facilities	92.7	88.8	91.6	84.9	88.1	88.9
Hostels	72.7	55.9	39.6	41.9	40.4	48.7
Guest House	44.5	30.9	23.5	21.7	22.8	27.4
Teachers' Housing	47.3	36.9	19.8	18.4	20.7	28.2
Canteen	80.0	77.1	74.8	49.3	64.6	70.1
Common Room (Day Scholars)	30.9	23.8	19.1	9.7	16.1	19.7
Welfare Schemes	49.1	45.5	48.0	35.4	42.8	44.2
Gymnasium	8.2	7.1	3.0	3.6	4.2	5.3
Auditorium/Seminar Rooms	20.9	11.7	7.7	7.1	9.1	10.4
PERMANENT						

Table 8: Distribution of teachers by nature of appointment and College Grades (2002-2004)

Nature of Service	NAAC Grades					
	A & Above	**B++ & B+**	**B only**	**C++,C+ & C**	**Non-Accredited**	**Total**
No of Colleges (N)	110	547	298	233	285	1473
Permanent	68.57	76.20	74.94	79.79	70.87	74.54
Temporary	22.92	15.24	15.83	11.44	16.79	16.16
Part-Time	8.51	8.56	9.23	8.78	12.34	9.29
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: Self Assessment Reports submitted with NAAC and NAAC Grades

The XIth plan for higher education proposed to achieve GER of 15 percent by the end of the plan. As it has been observed that one of the main strategies in this context would be to expand institutional capacities in existing colleges and setting up new colleges in districts that are deficient both in terms of availability of colleges as well as size of enrolment per college. It is an imperative to tap the opportunity in low enrolment districts as well as among the low enrolment communities by introducing meaningful incentives and developing infrastructure facilities in the spirit of the idea of inclusiveness.

Estimates for expansion in enrolment and number of colleges based on district-level calculations for various social groups and other disadvantaged sections such as the religious minorities and women were carried out. This study reckons that in order to achieve 15 per cent GER India may require additional enrolment.

<center>**Chapter 4**</center>

Gender Differentials in Access to Higher Education

Saraswati Raju

Expansion of Women's Education

The purpose of this chapter is to review the existing situation in terms of women's access to higher education in India. The issue of women entering higher education came firmly on the global political agenda in 1998. The document Higher Education and Women: Issues and Perspectives (UNESCO 1998) prepared for the 1998 World Conference on Higher Education specifically focused on the issues related to women.

In India, it was the Kothari Commission, which more than three decades earlier in 1964-66, had emphasized explicitly on equal educational opportunities for women and had also suggested effective steps to achieve it. As pointed out by Chanana, the first two Five Year Plans acknowledged the problems related to women's education and tried to link education with employment. It was after the publication of the Report of the Committee on the Education of Women in 1959 that led to a more focused attention later, which got sharpened with the Report of the Committee on the Status of Women in 1974 and women's education was placed within the broader framework of developmental issues. The National Policy of Education (1986), broadening the vision further underscored the role of education in empowering women that would overcome inequalities and disparities (Chanana 2005).

Subsequent Five Year Plans and various committees including the National Perspective Plan (1988-2000) have stressed the need for greater participation of women in higher education. These efforts have resulted in increase in women accessing higher education from 25.7 lakh in 1993-04 to 42.6 lakh in 1999-2000 to 54.06 lakh in 2004-05. The corresponding figures for men are 51 lakh, 69 lakh and 81 lakh. In absolute terms women continue to lag behind men, but because of accelerated growth rate in women's enrolment, the gap between men and women is narrowing. For example, the growth rate of women students in higher education between 1993-04 to 2004-05 has been 7.72% as compared to 4.73% for men. The census-adjusted figures for two rounds, i.e., 1993-94 and 1999-2000 (the corresponding census years 1991 and 2001), although slightly higher show similar trend, i.e., 8.77% for women and 5.22 % for men respectively.

Significantly, the growth in enrolment in higher education is much higher for rural women as compared to their urban counterparts – 13% as compared to 5% respectively – more than twice as faster for the rural women. The corresponding figures for men are about 5% (rural) and 3% (urban) respectively. Although the higher growth rate in case of rural women is partly because of the low base, it cannot be denied that increasingly more rural women are entering the domain of higher education. Currently (2004-05), 40% of the total enrolment in higher education as compared to less than 10% at the eve of independence consist of women (UGC 2005).

Data Sources and Limitations[1] Three main sources of enrolment statistics on higher education in India were looked into. They are:

Selected Educational Statistics (SES), Ministry of Human Resource Development, Government of India;

National Sample Survey Organisation, Government of India;

Population Census, particularly Social & Cultural Tables, C-series, 2001, Registrar General of India.

Each one of these sources has limitations as well as strengths.[2]

The Selected Educational Statistics (SES) provides detailed enrolment figures at various levels such as doctorate, post-graduates, under graduates, diploma/certificate and by various faculties, i.e., Arts, Science, Commerce, and Engineering & Technology and Medicine etc. SES also covers enrolment in diploma/certificate courses in polytechnics, teacher training schools and Arts and Crafts institutions including industrial trades for boys and girls. These data depend upon the information annually provided by the individual state departments of education.

Apart from missing out on a large number of unrecognized institutions; inadequate as well as sporadic responses from colleges and universities and non-reporting from some major states has been a recurring problem with SES, which together leads to underestimates in enrolment rates. As a consequence, the SES enrolment figures have, at best, been estimates using the interpolation method and provisionally reported since 1986-87. However, the SES is the only source, which provides temporal (time series) data over long periods across states and by gender and social groups and is extremely useful for projection purposes.

Various rounds of the National Sample Survey (NSS) provide data on higher education, at times directly through their dedicated reports on education (42nd and 52nd Rounds) and also through the rounds on employment and unemployment. This study is essentially based on the unit level analysis of the 55th and the 61st Rounds on 'Employment and Unemployment'. It also uses other 38th (1983), 43rd (1987-88), 50th (1993-94), 55th (1999-00) Rounds (wherever necessary) to get the educational profile and enrolment in higher education. The 55th and the 61st Rounds are 'thick' rounds and provide information both on educational attainment and current attendance.

All the Rounds are not strictly comparable. In the 'thick rounds, all those persons who have completed higher secondary education and are studying for a degree, diploma or certificate are being taken as enrolled in 'higher education'. The earlier two rounds (38 and 43) only provide data on educational attainment at secondary level. Hence for these years, secondary education level has been taken as a prerequisite for participation in degree, diploma or certificate in higher education. This may have led to an overestimation of total diploma/certificate higher education.

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[1]   For the processing of the entire NSS Data set, I acknowledge the immense help from Prof. Ravi Srivastava, Richa Singh and Arpita Banerjee. The Census data and their processing were done by Dr. Sinha Sachidanand and his team of students. Swati Sachdev handled both NSS and Census for additional processing including figures. Maps were prepared by Mr. Selvan. Without the ever-available support of these individuals, this analysis would have been impossible.

[2]   The author is grateful to Ravi Srivastava and Sachidanand Sinha for providing this critical input. The gender-wise information from various sources is borrowed from Duraisamy (2007). I am thankful to him for allowing me to use the information.

The NSS sources are usually seen as better and yet disaggregated analyses at state level or at the level of NSS regions carried out on several parameters, i.e., social and religious groups need to be interpreted carefully and remain indicative rather than conclusive. This is because the data are based on sample surveys and observations become increasingly fewer as one moves down the scale. Also, the NSS data are collected at the household levels and despite several checks; overestimation is a distinct possibility (Duraisamy 2007).

The Census definition of higher education is very liberal and embraces all types of education, including public and private, distant, certificate, diploma and degree, which can be problematic. For example, vocational education also includes Industrial Training Institutes (ITIs), which does not necessarily require completion of the schooling cycle for admissions. As a result, enrolment figures from census are much higher than the SES. However, census is the only source that gives information at the district level.

The relevant tables pertaining to population attending educational institutions by type are published in C-series: Social and Cultural Statistics. Census 2001 uses the following definition in order to arrive at the relevant figures:

'A person attending college or university education or any such private (recognized or unrecognized) institution that ultimately result in awarding a Graduate Degree or Post Graduate Degree as recognized by government or university or any other agency authorized by government will be considered as attending college. This will include the study of Arts, Science, Commerce, Home Science, Modern Indian/European languages, Theology, Public Administration, Statistics and other similar subjects.' Persons attending distance education find the same probability of getting reported in the census figures.

'Persons receiving vocational training or attending vocational and professional courses will come under the category of vocational institutions. It includes the study of courses which prepare students for various vocations/ professions such as Agriculture, Teacher Training, Physical Education, Engineering and Technology, Architecture, Fine Arts (Music, Dancing, Sculpture, etc.), Journalism, Library Science, Law, Medicines, Business Management, etc. Therefore all persons attending vocational or professional courses such as electrician, plumber, carpenter, motor mechanic, fitter, stenography, typing, architecture, engineering, computers, nursing, midwifery, pathology, courses of Ayurvedic, Unani & other system of medicines; agriculture, dairying, forestry, black smithy, dyeing, tanning, textile, teaching (JBT, B. Ed, M.Ed., etc.); physical education, journalism, library science, art, fine art, dress making, visual communication, etc. will be considered as attending Vocational Institutes. Persons attending computer and similar courses offered by different private institutions will also be covered under this category. Engineering Colleges, Medical colleges, IITs, Institutes of Business Management, professional courses such as Company Secretary, Chartered Accountant, Law Colleges, etc. are also included under this category'.

It is therefore clear that the figures reported by the census under vocational included degree, diploma and certificate courses and it is not possible to disaggregate this category into courses equal and not equal to degree. The census also does not provide stream wise distribution of population attending various levels of education.

Concepts of Enrolment

a) Gross Enrolment Ratio (GER): Estimated separately for graduates only (codes 27 to 30 in current attendance) and total higher education (codes 27 to 35 in current attendance = graduates + diploma certificate) with attainment of higher secondary education as a qualifier. Total enrolment in higher

education has been divided by population in the specific age group (18-22 years and 18-23 years respectively).3

b) Net Enrolment Ratio (NER): Derived for the specific age group by dividing the enrolment in higher education for the specific age group (18-22/23) with qualifier, by the population in that age group. This has been done for graduates and for total higher education separately.

c) Educational Attainment: This is level of educational accomplishment for the specific age group (18-22/23) that is the percentage of persons with the specific educational level in the age group. Derived for five categories viz. illiterates, primary, middle, secondary + higher secondary and graduates and above (codes as described above).

d) Enrolment of the Eligible (EEE): Derived by dividing those enrolled in higher education in the specific age group (18-22/23) by those eligible to be enrolled in higher education.

Eligibility has been decided on two bases:

i) Those in 18-22/23 ages group and have attained higher secondary education (code 09 in general education).

ii) Those in 18-22/23 age group and have attained higher secondary education and above education (code 09 to 13 in general education = higher secondary + graduates and above).

In general, GER and NER ratios for women are not very different from each other in higher education, presumably implying absence of under-age and over-age women in higher education. More importantly, however, the overall representation of women in higher education is quite low and the concern here is to capture the gross quantum. The study, therefore, uses GER for the analysis.

Table 2 provides comparative data from the three sources for women and men separately. It is interesting to note that even as the census overestimates the enrolment figures, the NSS and the Census figures are quite close in case of women.

Table 1: Gross Enrolment Ratio for Men and Women from Different Sources

Source/year	GER (%)		
	SES 2003-04	NSS 2004-05	Census 2001
All	9.7	12.6	13.8
Men	10.7	14.4	17.1
Women	7.5	10.6	10.2

Source: Duraisamy 2007

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3   Two issues are encountered in computing the GER. The first one relates to the relevant population age group in respect of higher education to be used as denominator in computing the GER which has been variously defined. For instance, the National Knowledge Commission (2006) has used 18-24 as the relevant age group while the Planning Commission (2005) has used 18-23 as the relevant age group. This study uses the latter namely population aged 18-23 to compute the GER. This then leads to the second issue particularly in case of the census data relating to population aged 18-23 where single year age returns are available only for total population and for sub groups like SC, and ST the data are available only at 5-year age intervals like 15-19, 20-24 etc. As such wherever data on single year age returns is not available population aged 18-23 is computed using Sprague Multiplier method.

Overall Gross Enrolment Ratio: Temporal Overview

Temporal Pattern

SES is largely provision as has been noted earlier. The Census does not contain comparable figures prior to 1991, i.e., that of the relevant age-group. As such NSS remains the most usable source for comparing trends.

Table 2: Temporal Pattern in Gross Enrolment Ratios in Higher Education, Age Group 18-23, 1983 – 2000-2005

	Year	GER in Higher Education			GER in Graduates only		
		Total	Rural	Urban	Total	Rural	Urban
Male	1983	10.87	6.19	22.36	9.47	5.57	19.04
	1987-88	11.82	7.35	24.22	10.40	6.60	20.95
	1993-94	11.66	7.22	23.05	8.47	5.47	16.16
	1999-00	12.13	7.53	21.98	9.22	5.79	16.55
	2004-2005	14.42	9.28	24.77	12.42	8.32	20.68
Female	1983	4.49	1.84	12.35	3.86	1.50	10.81
	1987-88	5.37	2.34	15.23	4.66	1.93	13.53
	1993-94	5.88	2.01	16.89	4.31	1.48	12.35
	1999-00	7.94	3.61	18.71	6.30	2.97	14.56
	2004-2005	10.57	5.67	22.56	9.11	5.12	18.87
Total	1983	7.67	3.95	17.68	6.66	3.48	15.19
	1987-88	8.57	4.77	19.96	7.51	4.20	17.43
	1993-94	8.85	4.66	20.17	6.45	3.50	14.38
	1999-00	10.08	5.58	20.44	7.79	4.39	15.62
	2004-2005	12.59	7.51	23.79	10.84	6.74	19.88

Table 3 presents two sets of temporal data: one is GER in higher education that includes all certificate, diploma and graduate students and the other refers to only graduate and above. It can be seen that not only the overall GER for women has become progressively better over the years, it has increased at a much faster rate - more than doubled – from 4.5 in 1983 to 10.6 in 2004-05, it still remains extremely low- in fact, the current figure for women is what it was for men about two decades ago, i.e. 1983 (the corresponding figures for men are 10.87 and 14.42).

It must be pointed out that the different rounds are not strictly comparable. For example, the 61st Round does not provide direct evidence on education enrolments. Instead, it provides information on the individuals' 'principle status' which can be used to identify individuals who are full-time students (part-time students cannot be captured). Likewise, the 61st Round does not give information on stream-wise education. Also, the codes are different. Withstanding all this, however, what gets established, although often not noticed or celebrated is the remarkable acceleration in the GER of women over time? Although in absolute terms women continue to lag behind men, the growth rate in GER for women is higher than that for men, more so for women in rural India (Table 5)

**Table 3: Temporal Growth Rate Gross Enrolment Ratios in
Higher Education, Age Group 18-23, 1983 – 2000-2005**

	Higher Education			
	1983/88	1988/93	1993/00	2000-05
Total				
Male	2.44	3.18	2.74	6.88
Female	3.82	5.61	7.60	7.96
Rural				
Male	3.40	6.05	2.55	6.45
Female	1.96	7.65	12.50	10.41
Urban				
Male	1.75	1.06	2.90	7.22
Female	4.54	4.67	5.66	6.45

Rural-urban pattern

Urban is a priviledged location and both men and women who reside in urban areas are undoubtedly better placed as the rural urban differences in GER are stark- less than 2 in 1983 increased to about 6 in 2004-2005 in rural areas as compared to 12 and 23 in urban during the corresponding period (Fig. 3.1). That is to say, rural women are much disadvantaged as compared to their urban counterparts (Table 4). The GER for graduates and above does not reveal any difference in this rural-urban pattern except to indicate that while few women are in the higher education, fewer are in graduate programs.

Fig. 1
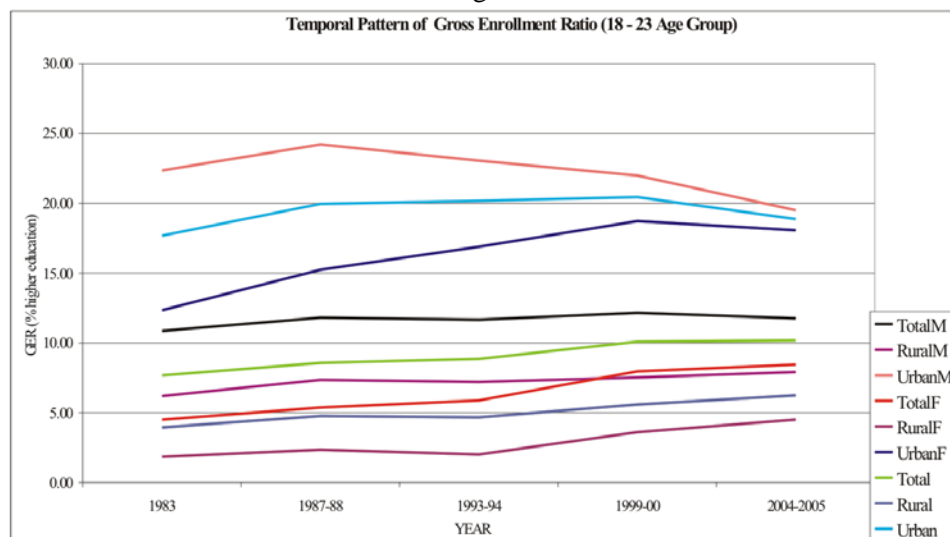
However, the relatively faster growth in women's enrolment in higher education as compared to men counterparts has resulted in declining gender gap over the years. Table 5 points out this clearly. The closing of the men/women gap is particularly remarkable for urban India – from 10 points' difference in 1983 to 2 in 2004-2005. The rural India also shows a decreasing distance between men and women although the journey has been slow. The table also provides Sopher's index (DIS) in order to see the disparity between men and women. Higher the value higher is the disparity. Conversely, 0 disparity means parity. It transforms GER values for men and women in logit scale, which is a better measure than simple arithmetic gap between two ratios. Thus,

Table 4: Gender Gap and Disparity in Gross Enrolment Ratios in Higher Education

Higher Education*					Graduates**				
Total					Total				
Years	Male	Female	Gender gap	Sopher's Disparity Index (SDI)	Years	Male	Female	Gender	SDI
1983	10.87	4.49	6.38	0.41	1983	9.47	3.86	5.61	0.42
1987-88	11.83	5.37	6.46	0.37	1987-88	10.4	4.66	5.74	0.38
1993-94	11.66	5.88	5.78	0.32	1993-94	8.47	4.31	4.16	0.31
1999-00	12.13	7.94	4.19	0.20	1999-00	9.22	6.30	2.92	0.18
2004-05	14.42	10.57	3.85	0.15	2004-05	12.42	9.11	3.31	0.15
Rural					Rural				
Years	Male	Female	Gender Gap	SDI	Years	Male	Female	Gender Gap	SDI
1983	6.19	1.84	4.35	0.55	1983	5.57	1.5	4.07	0.59
1987-88	7.35	2.34	5.01	0.52	1987-88	6.6	1.93	4.67	0.56
1993-94	7.22	2.01	5.21	0.58	1993-94	5.47	1.48	3.99	0.59
1999-00	7.53	3.61	3.92	0.34	1999-00	5.79	2.97	2.82	0.30
2004-05	9.28	5.67	3.61	0.23	2004-05	8.32	5.12	3.20	0.23
Urban					Urban				
Years	Male	Female	Gender Gap	SDI	Years	Male	Female	Gender Gap	SDI
1983	22.36	12.36	9.99	0.31	1983	19.04	10.81	8.23	0.29
1987-88	24.22	15.23	8.99	0.25	1987-88	20.95	13.53	7.42	0.23
1993-94	23.05	16.89	6.16	0.17	1993-94	16.16	12.35	3.81	0.14
1999-00	21.98	18.71	3.27	0.09	1999-00	16.55	14.56	1.99	0.07
2004-05	24.77	22.56	2.21	0.05	2004-05	20.68	18.87	1.81	0.05

*higher education includes graduates and diploma; ** include graduates only

arithmetic gap between men and women at higher values for GER show a lower disparity as compared to identical arithmetic gap at lower values. It can be seen that using this index shows the GER for men and women in higher education in urban India almost at parity (DIS in 2004-05 is 0.05). Two observations can be made:

1) Gender disparities are much higher in rural India as compared to rural suggesting that disparities are more an outcome of rural-urban differentials;

2) Disparities are enhanced as one move to graduate studies, but here also urban residents are better placed

than the rural counterparts.

The Present Scene

Table 6 provides GER for men and women for 1999-2000 and 2004-2005. Overall women continue to have lower GER, but once again, urban areas have higher GER for both men and women. However, the increase between 1999-2000 and 2004-2005 is sharper for women as compared to men across urban rural locations.

Table 5: Gross and Net Enrolment Ratio, Age Group 18-23, 1999-2000 and 2004-2005

		GER	NER	GER	NER
		1999-2000		2004-2005	
	Total	10.10	8.16	12.59	10.18
Total	Male	12.12	9.43	14.42	11.75
	Female	8.00	6.83	10.57	8.45
	Total	5.58	4.52	7.51	6.24
Rural	Male	7.53	5.87	9.28	7.91
	Female	3.61	3.15	5.67	4.50
	Total	21.74	17.51	23.79	18.86
Urban	Male	23.28	18.10	24.77	19.49
	Female	19.99	16.85	22.56	18.08

Rural-urban pattern

The rural urban divide continues as urban GER is about three times higher (22.56) than the rural (7.51). For women it is four times higher (22.56 for urban as compared to 5.67 for rural) whereas for urban men it is about twice and half higher than the rural men, the corresponding figures being 24.77 for urban and 9.28 for rural.

That, women who are residing in rural areas are doubly deprived as women and as rural is amply clear (Fig. 3.1).

Gross Enrolment Ratio of Social Groups

It is not surprising that the discriminatory and marginalizing processes over the years towards those at the bottom of caste pyramid get reflected in GER as well. Table 8 and Fig. 3.3 provide overall GER and NER in higher education as a whole and for graduates and above by social groups. Despite overall increase in GER for all social groups over the previous year, the hierarchies are in expected direction (Graphs 4 and 5).

General population excluding the scheduled castes (SC), scheduled tribes (ST) and the other backward castes (OBC), which can largely be equated with high caste Hindus continue to occupy the top position in terms of GER both as a whole and also at the graduate and above levels followed by OBCs, SCs and STs.

SC and ST women are not very different at the aggregate level. Rural pattern follows that for the total. However, in urban India, women belonging to scheduled tribes significantly take over both the OBC and scheduled caste women. That is, women belonging to scheduled castes are worst placed in urban India.

**Table 6: Gross Enrolment Ratio in Higher Education by Social Groups,
Age Group 18-23, 1999-2000 and 2004-2005**

1999-2000

	GER in Higher Education			GER in Graduates only		
	Total	Rural	Urban	Total	Rural	Urban
a. Total						
ST	6.43	5.11	15.83	5.55	4.65	11.97
SC	5.09	3.4	11.53	3.88	2.57	8.87
OBC	6.99	4.1	15.51	5.53	3.24	12.26
General	16.74	9.01	29.28	12.71	6.93	22.07
Total	10.1	5.58	21.74	7.81	4.39	16.6
b. Male						
ST	7.19	5.74	17.08	6.04	4.93	13.68
SC	6.63	5.07	12.19	5.08	3.85	9.48
OBC	8.99	5.88	17.82	7.06	4.62	14.01
General	19.2	11.79	30.5	14.22	8.82	22.44
Total	12.12	7.53	23.28	9.21	5.79	17.53
c. Female						
ST	5.71	4.53	14.56	5.07	4.39	10.22
SC	3.48	1.70	10.75	2.62	1.27	8.16
OBC	4.91	2.27	12.96	3.92	1.82	10.34
General	14.11	6.19	27.87	11.09	5.01	21.65
Total	8.00	3.61	19.99	6.34	2.97	15.55

2004-2005

	GER in Higher Education			GER in Graduates only		
	Total	Rural	Urban	Total	Rural	Urban
a. Total						
ST	7.57	5.03	25.04	6.57	4.72	19.36
SC	7.81	5.37	14.77	6.52	4.64	11.87
OBC	10.14	7.14	18.00	8.77	6.41	14.94
General	19.93	10.88	31.55	17.22	9.84	26.69
Total	12.59	7.51	23.79	10.84	6.74	19.88
b. Male						
ST	8.77	6.00	25.89	7.80	5.72	20.64
SC	9.18	6.35	16.46	7.81	5.56	13.62
OBC	12.48	9.26	19.97	10.85	8.28	16.83
General	21.35	12.90	31.74	18.23	11.55	26.45
Total	14.42	9.28	24.77	12.42	8.32	20.68
c. Female						
ST	6.42	4.13	24.06	5.40	3.78	17.87
SC	6.28	4.33	12.56	5.08	3.67	9.58
OBC	7.60	4.98	15.43	6.51	4.51	12.47
General	18.29	8.65	31.31	16.06	7.96	26.99
Total	10.57	5.67	22.56	9.11	5.12	18.87

Fig. 2: Enrolment Ratio by Social Group and Gender, Age Group 18-23, 1999-2000 - 2004-2005
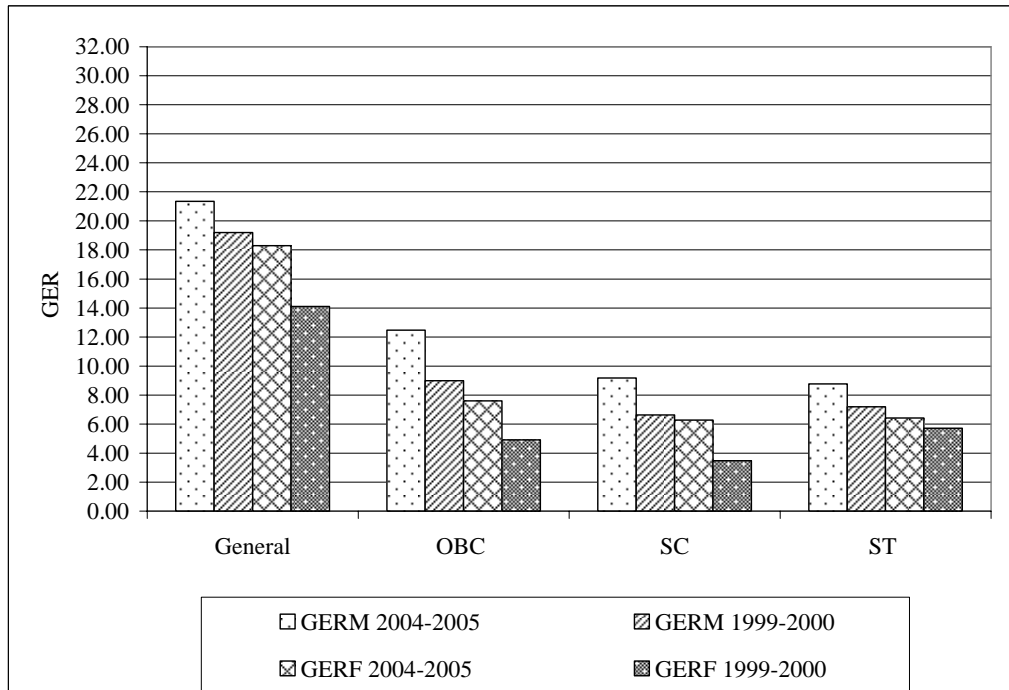
**Fig. 3: Rural Enrolment Ratio by Social Group and Gender,
Age Group 18-23, 1999-2000 - 2004-2005**
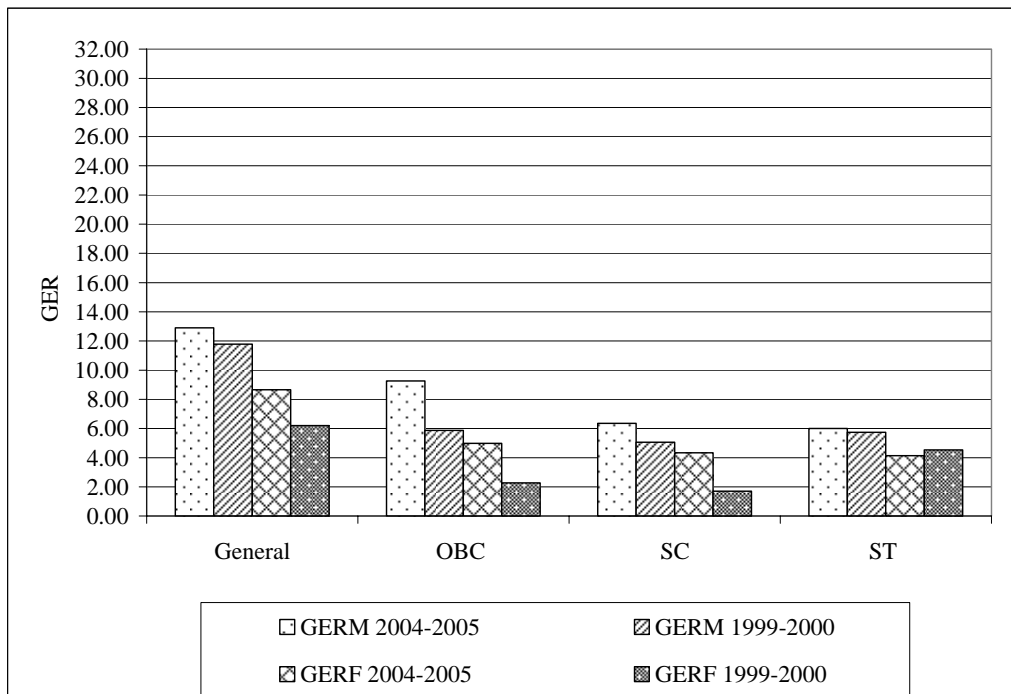
Fig. 4: Urban Enrolment Ratio of by Social Group and Gender, Age Group 18-23, 1999-2000-2004 2005: Urban
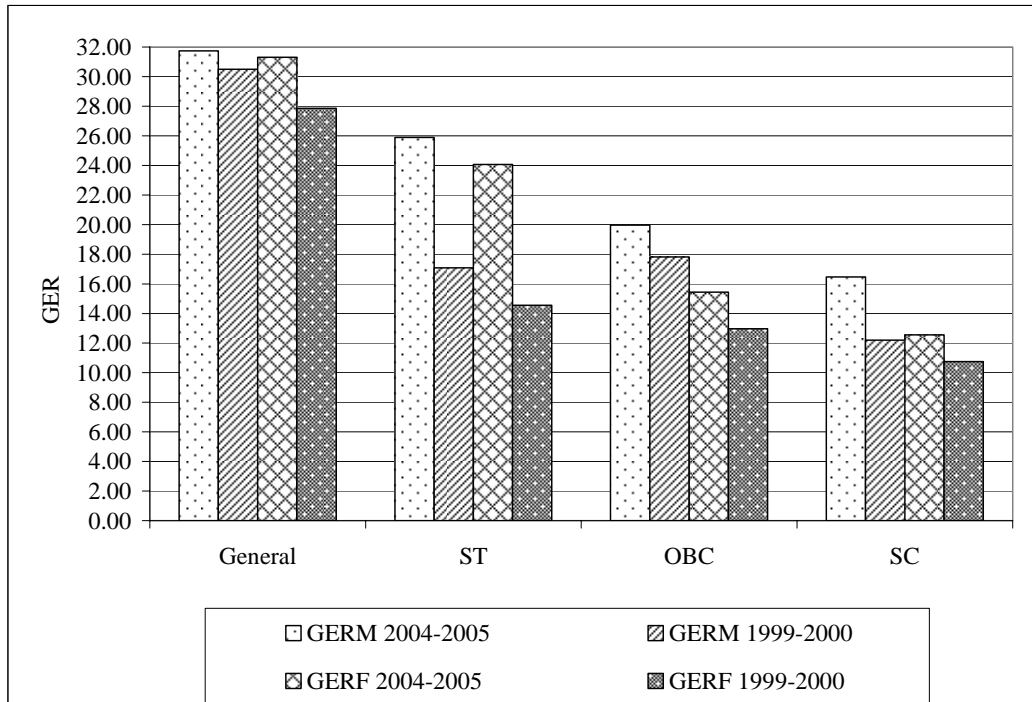
Gross Enrolment Ratio of Religious Groups

Religion is another axis along which exclusions can be observed. At the aggregate level, Christians are ahead of every other religious group in terms of overall enrolment in higher education as well as at the graduate level. Muslims in contrast lag behind the most and women are worse. Also, fewer of them are in graduate program. For example, Christian women have thrice as high enrolment in overall higher education as compared to Muslim women; amongst men this difference is twice as much. The multilayered deprivation of women comes to fore (Table 8).

Rural-urban pattern

Once again, rural locations have lower enrolment rates for all religious groups as compared to urban and the Christians maintain their lead whereas Muslim lag behind the most, more so in case of women. For example, with a GER of 14, the rural Christian women are almost fourfold better placed than their Muslim counterparts (GER 4). In urban areas Christians have GER of 34 and Muslim GER is 10. Thus, irrespective of their residential location Christians are the most advanced - both in terms of overall enrolment in higher education as well as those who are in graduate program.

Significantly, amongst the rest urban Sikh women are the most advantaged – better than the caste Hindu women (Table 8). These dynamics, however, change significantly when these religious groups are cross-classified by their social location as the subsequent analysis shows.

Table 7: Gross Enrolment Ratio by Religious Groups, Age Group 18-23,

2004-2005

Religious Group	Total Higher			Total Graduate		
	Male	Female	Total	Male	Female	Total
			Total			
Hindu	15.19	10.86	13.13	13.07	9.32	11.29
Muslim	9.09	6.16	7.70	7.77	5.81	6.84
Christians	19.72	19.98	19.85	17.21	16.02	16.60
Sikhs	10.77	14.99	12.69	9.01	12.54	10.62
Others	20.26	14.77	17.74	18.09	12.25	15.40
Total	14.42	10.57	12.59	12.42	9.11	10.84
			Rural			
Hindu	9.58	5.62	7.64	8.63	5.09	6.90
Muslim	7.60	3.90	5.78	6.52	3.78	5.17
Christians	13.01	13.86	13.46	11.47	11.37	11.42
Sikhs	6.91	9.11	7.96	5.89	7.30	6.56
Others	4.73	5.19	4.95	4.15	4.87	4.51
Total	9.28	5.67	7.51	8.32	5.12	6.74
			Urban			
Hindu	27.48	24.74	26.27	22.80	20.52	21.79
Muslim	11.08	9.76	10.49	9.44	9.04	9.26
Christians	31.55	34.00	32.69	27.32	26.67	27.02
Sikhs	20.54	36.04	26.60	16.89	31.31	22.53
Others	39.06	30.26	35.37	34.96	24.17	30.44
Total	24.77	22.56	23.79	20.68	18.87	19.88

Gross Enrolment Ratio: Social – Religion Interface

So far we have seen that OBC, SC and ST are the deprived groups. When the issues pertaining to exclusion and disparities are further fine-tuned by cross-classifying social groups with religion for identifying the most vulnerable amongst them, it becomes clear that even amongst the most marginalized groups those at the bottom of social hierarchy within those groups are even more disadvantageously placed.

At the aggregate level, ST and SC Hindus are at the lowest (GER 7) followed Hindu OBCs (GER 10); among Muslims, which in general is a marginalized community, Muslim OBCs are further marginalized. Amongst Christians also, STs have about half GER (11) as compared to SC Christians (GER 24). Amongst Sikhs, SCs have extremely low GER.4. The following section looks at the rural-urban differences.

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[4]   The low values of Sikhs have to seen in the light of small numbers in the sample.

**Table 8: Gross Enrolment Ratio in Higher Education, Social Group,
Gender and Residence Age Group 18-23, 2004-05**

Socio-religious Group	Rural			Urban			Rural + Urban		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Hindu ST	6.32	3.97	5.11	26.08	15.96	21.74	8.83	5.10	6.95
Hindu SC	6.39	3.94	5.19	15.80	10.72	13.59	9.00	5.55	7.37
Hindu OBC	9.36	4.77	7.10	22.04	17.86	20.24	12.89	7.78	10.45
Hindu Others	15.14	10.44	12.91	38.71	37.69	38.24	25.90	22.44	24.28
Hindu Total	9.58	5.62	7.64	27.48	24.74	26.27	15.19	10.86	13.13
Muslim OBC	7.03	5.25	6.12	9.68	5.02	7.59	8.22	5.16	6.73
Muslim Others	7.89	3.08	5.59	11.91	12.60	12.22	9.57	6.77	8.27
Muslim Total	7.60	3.90	5.78	11.08	9.76	10.49	9.09	6.16	7.70
Christian ST	3.62	6.69	5.33	33.52	46.70	40.69	8.67	13.11	11.14
Christian SC	4.81	33.80	21.93	20.81	30.57	25.89	11.89	32.59	23.53
Christian Others	23.03	16.86	19.99	32.97	30.62	31.94	27.61	22.44	25.19
Christian Total	13.01	13.86	13.46	31.55	34.00	32.69	19.72	19.98	19.85
Sikh SC	3.19	1.71	2.47	1.96	9.93	4.26	3.00	2.32	2.68
Sikh Others	9.29	14.23	11.60	24.81	39.53	30.85	14.65	21.68	17.81
Others	4.73	5.19	4.95	39.06	30.26	35.37	20.26	14.77	17.74
Total	9.28	5.67	7.51	24.77	22.56	23.79	14.42	10.57	12.59

Rural-urban pattern

Although the GER of Hindu scheduled caste women is amongst the lowest (3.26) in rural India, their participation in higher education is not significantly different from other women belonging to general Muslim community (3.08), and ST Hindus (3.97). Thus, they can be clubbed together in that they share comparable marginal status. The rural OBC Hindu women have slight edge (4.77).

Urban scenario is different. The 'other' Sikh women are at the top (39.53) followed by Hindus in general- high caste Hindu (37.69), OBC Hindu (17.86), ST Hindu (16) and Muslims (12.6). The relative disadvantage of SC Hindu women (10.72) can be clearly seen vis-à-vis OBC and ST and even general Muslims. However, OBC women of Muslim community have much lower GER of 4.3 (Table 10). The observation about Sikh women and their high GER both in rural urban areas require revisiting in that the scheduled caste amongst them are much disadvantaged, particularly in rural India with a GER below 2.

In nutshell, Sikh SC, Hindu SCs, STs, and Muslim women- both belonging to general as well as OBC category need attention in rural India whereas it is Hindu and Sikh SCs and Muslim OBC which are the worst located communities in urban India.

Poverty and Gross Enrolment Interface

It is difficult to establish a direct link between poverty and enrolment ratios because monthly per capita expenditure (MPCE) which is used as a proxy variable for income is at the household level. It is well-known

that the household resources are not equally shared amongst the household members. However, some leads can still be obtained. It can be seen that with increasing the MPCE enrolment ratios also increase (Table 11).

Table 9: Gross Enrolment Ratio in Higher Education by MPCE,
Gender and Residence, Age Group 18-23, 2004-2005

Quintile of MPCE	Rural			Urban			Rural + Urban		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Less than 359.10	2.25	1.11	1.62	1.27	1.61	1.44	2.14	1.16	1.61
359.11 to 461.14	5.72	1.53	3.63	5.56	2.67	4.14	5.70	1.70	3.70
461.17 to 587.33	6.90	3.34	5.18	6.48	6.63	6.55	6.81	4.03	5.48
587.38 to 830.44	11.12	8.13	9.70	13.83	11.38	12.75	12.04	9.14	10.69
More than 830.5	22.86	21.09	22.09	39.55	39.51	39.53	33.22	32.33	32.84
Total	9.28	5.67	7.51	24.77	22.56	23.79	14.42	10.57	12.59

As a crude measure, the gap between the lowest and the highest MPCE suggests the disparate conditions at the two ends. At the aggregate level – the gap between the 'poorest of the poor' (the lowest quintile) and the 'richest' i.e., the top quintile is 20 times. It is much higher in case of women, i.e., about 28 times as compared to 16 times for men. Significantly, as far as the enrolment ratios are concerned, the gender disparities at the polar ends of MPCE are sharpest in urban India, i.e., 25 times as high compared to 19 points in rural areas suggesting a somewhat disproportionate burden of urban survival being carried out by women compared to their men counterparts. This is not so in rural India although the relative disadvantageous position women occupy vis-à-vis men remain.

Transition from School to Higher Education: Enrolment of Eligibles

The discussion so far hinged upon GER. However, the problem is not of accessibility to higher education alone, but also the access at the school level resulting in differences in educational attainment at various stages of schooling. It can be argued that the question of representation of men and women, various social and religious communities in higher education depends upon the pool, i.e., those who become eligible to enter higher education after completing successive years of schooling.

An attempt has been made to acquire such a pool by looking at the percentage of those who have attained the higher secondary education in the 18-23 age-groups and those who, out of this cohort, are enrolled in the higher education – termed here as eligibles. It can be seen that the pool of students available at the next successive stage shrinks in the schooling itself. The drop at the level of higher education, however, is the sharpest. Although the data refers to 1999-2000, not much change in this trend is envisaged (Fig. 3.6). Despite the drop, the familiar hierarchies continue with the urban men having the highest transition from school to higher education and rural women occupying the bottom most space.

A critical finding in terms of transition from school to higher education is that for both the sexes the social group differences in educational achievement are very prominent at the school level followed by a sharp drop in

terms of entry to higher education, but once in higher education, although caste-based disadvantages do not disappear, the intra and inter-group differences shrink considerably (Fig. 6).

Fig. 5: Stage-wise Enrolment of Total Eligibles by Gender and Residence, Age Group 18 – 23, 1999 – 2000
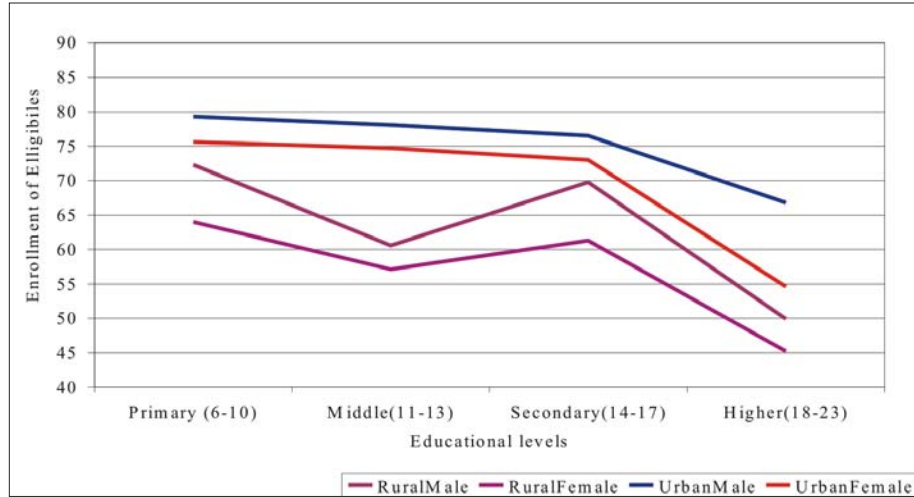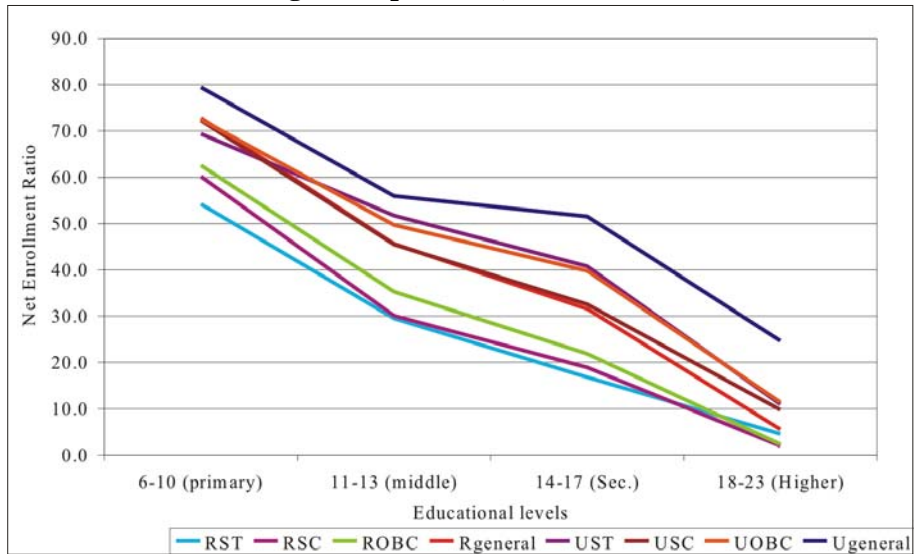

Fig. 6: Stage-wise Enrolment Rates for Women by Social Group and Residence, Age Group 18 – 23, 1999 – 2000

This is perhaps because the poor among the historically underprivileged social groups are left out of the educational system after the schooling and only economically better off amongst them are able to go further and join higher education. What is being subtly hinted as is the economic affordability in accessing the graduation level, which may clinch the reason for this shrinking differential. The latter table on enrolment of eligibles by MPCE (Table 12) reinforces this observation quite well.

At the aggregate level, about half of the eligible students enter higher education. Overall, more eligible men than women are in higher education. The rural-urban differences continue, i.e. more urban men and women get admitted to higher education as compared to rural counterparts. Scheduled tribe students lead (GER 62) followed by 'others' (54), SCs (51) whereas OBC lag behind the most with a GER of 50 (Table 11).

Table 10: Eligible Students' Enrolment Rate in Higher Education, Age Group 18-23,
Social Group, Gender and Residence 2004-2005

Social Group	Rural			Urban			Rural + Urban		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
ST	55.71	65.57	59.50	77.03	53.54	64.58	62.79	59.89	61.50
SC	47.10	42.73	45.25	62.18	56.44	59.89	53.39	48.13	51.21
OBC	50.91	39.75	46.71	58.34	48.40	54.19	54.10	43.84	50.05
Others	51.17	42.17	47.52	60.47	54.42	57.57	56.79	50.41	53.90
Total	50.69	42.60	47.49	60.44	53.11	57.10	55.63	48.58	52.61

*   Goa, Gujarat, Haryana and Jammu and Kashmir have no scheduled tribes recorded.

**   Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Andaman & Nicobar and Lakshadweep islands have no OBC recorded.

It was seen that in case of GER, scheduled caste women in urban India were relatively more disadvantaged, but in terms of enrolment of EEE they have the highest rate (56.44). In contrast, OBCs continue to have lower access even of eligible women students both in rural and urban locations (Table 11).

It is important to note that in case of enrolment of eligibles in higher education, OBC men in rural areas are ahead of scheduled caste men. However, in urban India, SC men have higher rate of enrolment than the OBC men. This is suggestive of positive outcome of affirmative action combined with the special educational privileges offered to women students which enables scheduled caste men and women who have completed the required years of schooling to overcome the caste-based historical deprivation and access higher education.5

Poverty and Enrolment of Eligibles

Even if there is a potential pool of students who have the requisite years of schooling making them eligible for entry into higher education, affordability remains an issue of concern. Table 11 shows that in general higher the monthly per capita consumption of households higher is the enrolment of eligibles in higher education at the aggregate level as well as when disaggregated by rural and urban locations and also for men and women. The urban areas have more eligible entering higher education as compared to rural counterparts. However, the difference between rural men and women from the households with the lowest MPCE and those from the highest MPCE is much lower than that for urban areas. That is, poverty seems to keep more men and women from entering higher education in urban India.

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5   Social groups are not cross-classified by religious location because of fewer numbers of samples in individual categories.

Table 11: Enrolment Ratio of Eligibles in Higher Education by MPCE, Gender and Residence, Age Group 18-23, 2004-2005

Quintile of MPCE	Rural			Urban			Rural + Urban		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Less than 359.1	35.79	28.67	33.61	13.80	12.14	13.09	32.94	25.35	30.48
359.11 to 461.14	47.39	29.64	42.32	50.73	26.42	40.04	47.87	28.83	41.92
461.17 to 587.33	42.52	31.80	38.70	40.82	37.02	38.95	42.16	33.48	38.76
587.38 to 830.44	51.16	41.93	47.25	51.09	40.17	45.99	51.14	41.23	46.78
More than 830.5	59.46	51.88	56.10	64.42	58.24	61.63	62.97	56.42	60.02
Total	50.69	42.60	47.49	60.44	53.11	57.10	55.63	48.58	52.61

Level and Stream-wise Distribution

In general, there is an increase in women who are in graduate program over the years -at the aggregate level, from 73% in 1993-94 to 79% in 1999-2000 to 86% in 2004-05. This increase is irrespective of social group. However, tribal women stand out in terms of their enrolment both at graduate and diploma levels as compared to scheduled caste women (Table 13).

Table 12: Level-wise Enrolment by Social Groups, Age Group 18-23, 1993-94, 1999-2000 and 2004-2005

Social Group/ Residence	1993-1994				1999-2000				2004-2005			
	Graduate		Diploma/Certificate		Graduate		Diploma/Certificate		Graduate		Diploma/Certificate	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Total	72.61	73.31	27.39	26.69	76.00	79.25	24.00	20.75	86.09	86.17	13.91	13.83
General	72.65	72.96	27.35	27.04	75.46	78.93	24.54	21.07	86.05	87.02	13.95	12.98
SC	73.32	76.90	26.68	23.10	76.68	75.39	23.32	24.61	85.14	80.79	14.86	19.21
ST	69.47	78.26	30.53	21.74	84.10	88.85	15.90	11.15	88.94	84.13	11.06	15.87
Urban	70.10	73.12	29.90	26.88	75.29	77.78	24.71	22.22	83.47	83.64	16.53	16.36
General	70.01	72.36	29.99	27.64	74.94	78.18	25.06	21.82	83.66	84.72	16.34	15.28
SC	70.84	80.85	29.16	19.15	77.77	75.90	22.23	24.10	82.78	76.29	17.22	23.71
ST	72.43	90.15	27.57	9.85	80.09	70.20	19.91	29.80	79.72	74.29	20.28	25.71
Rural	75.73	73.85	24.27	26.15	76.91	82.24	23.09	17.76	89.57	90.31	10.43	9.69
General	76.26	74.83	23.74	25.17	76.23	80.69	23.77	19.31	89.48	91.33	10.52	8.67
SC	75.17	67.64	24.83	32.36	75.93	74.60	24.07	25.40	87.50	84.87	12.50	15.13
ST	68.28	64.58	31.72	35.42	85.84	96.89	14.16	3.11	95.39	91.54	4.61	8.46

It has been argued that in case of women, in addition to the gender disparities in higher education, the societal biases enter in yet another form. That is, women are disproportionately represented in what can be termed as 'soft options'- humanities as compared to sciences and other technical fields such as engineering and so on. Subsequently, discussion on enrolment by various disciplinary streams by sex and social groups is taken up. Table 14 shows that almost half of enrolled women are in Arts stream followed by science and commerce.

Table 13: Faculty-wise Enrolment of Women in Higher Education 2004-2005

	% of Faculty Enrolled							Total Women Enrolment		Growth Rate (%)
	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-2001	2004-05	1995-96	2004-05*	
Arts	48.1	47.7	47.3	46.9	46.5	46.1	51.07	1283522	2162482	68.48
Science	18.7	18.9	19.1	19.4	19.6	19.9	20.08	454710	850255	86.99
Commerce/ Management	17.1	17.3	17.4	17.5	17.7	17.8	16.45	365242	696548	90.71
Education	1.5	1.5	1.4	1.4	1.4	1.3	1.86	46746	78758	68.48
Engg./ Tech	5.9	6.1	6.3	6.5	6.7	6.9	4.15	61914	175725	183.82
Medicine	2.9	2.9	3	3	3.1	3.1	3.63	74838	153706	105.38
Agriculture	0.6	0.6	0.6	0.6	0.6	0.6	0.25	5795	10585	82.66
Vet. Science	0.2	0.2	0.2	0.2	0.2	0.2	0.08	2217	3387	52.77
Law	4.0	3.8	3.7	3.5	3.3	3.2	1.62	43870	68596	56.36
Others	1.0	1.0	1.0	1.0	0.9	0.9	0.81	24753	34298	38.56
Total	100	100	100	100	100	100	100	2363607	4234340	79.15

• Provisional; Source: UGC Annual report 2004-05.

The redeeming feature, however, is that over time, the enrolment is increasing in engineering/technology and medicine field. This is simply not an outcome of initial low base because there are other disciplines such as veterinary science, agriculture that do not show such growth.

Table 14: Graduates and Above in the Age Group 18-23 by Stream, Gender and Residence 2004-2005

Education stream	Rural			Urban			Rural + Urban		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Only Graduates									
Agriculture	15.51	11.51	14.09	11.79	14.63	13.00	13.53	13.40	13.47
Engineering	3.36	1.40	2.66	14.20	6.41	10.89	9.15	4.43	7.29
Medicine	0.33	1.55	0.76	1.37	1.61	1.47	0.88	1.59	1.16
Other subjects	80.80	85.53	82.49	72.64	77.35	74.64	76.44	80.58	78.08
Total	100	100	100	100	100	100	100	100	100
Dip/ Graduates									
Agriculture	2.40	0.00	1.59	1.84	0.54	1.28	2.02	0.40	1.38
Engineering	7.58	3.95	6.36	24.88	19.96	22.79	19.16	15.91	17.86
Medicine	1.19	1.34	1.24	2.75	2.02	2.44	2.23	1.85	2.08
Craft	1.89	2.64	2.14	1.29	0.30	0.87	1.49	0.89	1.25
Other subjects	86.94	92.07	88.67	69.24	77.19	72.62	75.10	80.96	77.43
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
All Graduates									
Agriculture	14.37	10.59	13.03	10.37	12.60	11.31	12.17	11.84	12.04
Engineering	3.73	1.61	2.97	15.73	8.36	12.60	10.33	5.81	8.54
Medicine	0.40	1.54	0.80	1.56	1.67	1.61	1.04	1.62	1.27
Craft	0.16	0.21	0.18	0.19	0.04	0.12	0.18	0.11	0.15
Other subjects	81.33	86.05	83.01	72.15	77.33	74.35	76.28	80.63	78.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 14 provides data for 2004-05 for graduates and above. The low presence of women in certain streams is evident.

Inter-state variation

Averages hide regional variations which are quite stark both in terms of all those enrolled in higher education as well as those pursuing graduate and above levels.

While the GER for all those in higher education for India as a whole is 12.59, on one hand, Chandigarh's GER is 50.22 followed by Delhi (26.69), Kerala (21.36) whereas the tribal Lakshadweep has GER of only 1.33. The following graphs show total enrolment in higher education. The union territories have been merged because of smaller sample sizes. It can be seen that the worst states in terms of both rural-urban situations are Bihar (6.22), Madhya Pradesh, (10.37), Orissa (8.28), Rajasthan (9) and West Bengal (7).

Fig. 7: Total GER in Higher Education, Age Group 18-23, 2004-2005
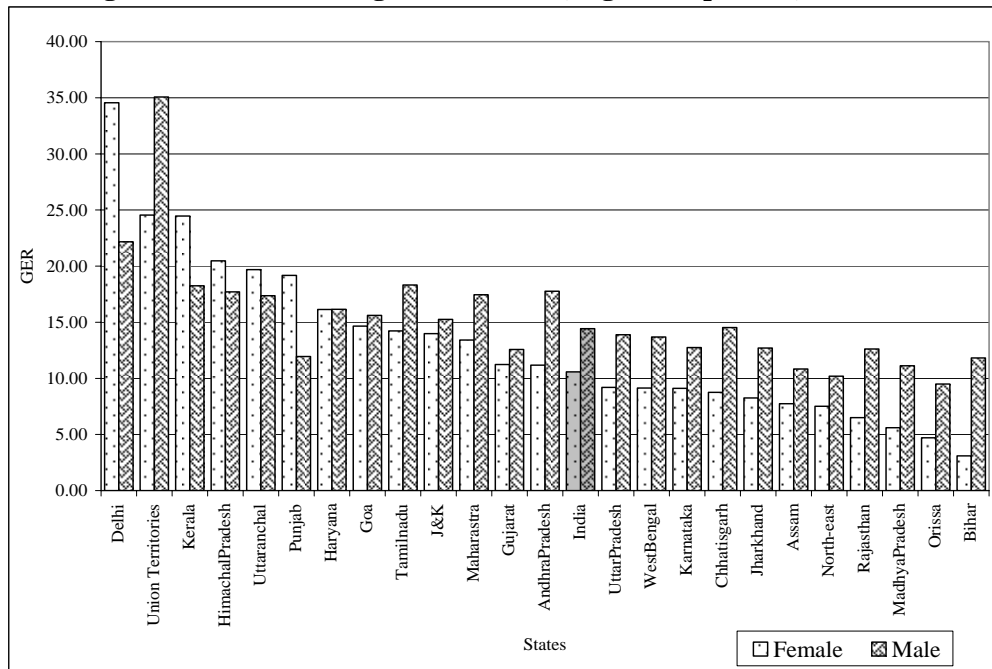
For women the overall GER is 10.57; about half of states and union territories, whether rural or urban have GER lower than the national average. Chandigarh tops with GER of 41.82 followed by Delhi (34.54), but some of the states and union territories are worst off with GER between less than1 to 5. They include islands - Daman and Diev (0.42), Lakshadweep (0.98) on one hand and Arunanchal (2.82), Bihar (3.09), Punjab (4.71) on the other (Graphs 8, 9, 10, also Table 16).

Fig. 8: Rural GER in Higher Education, Age Group 18-23, 2004-2005
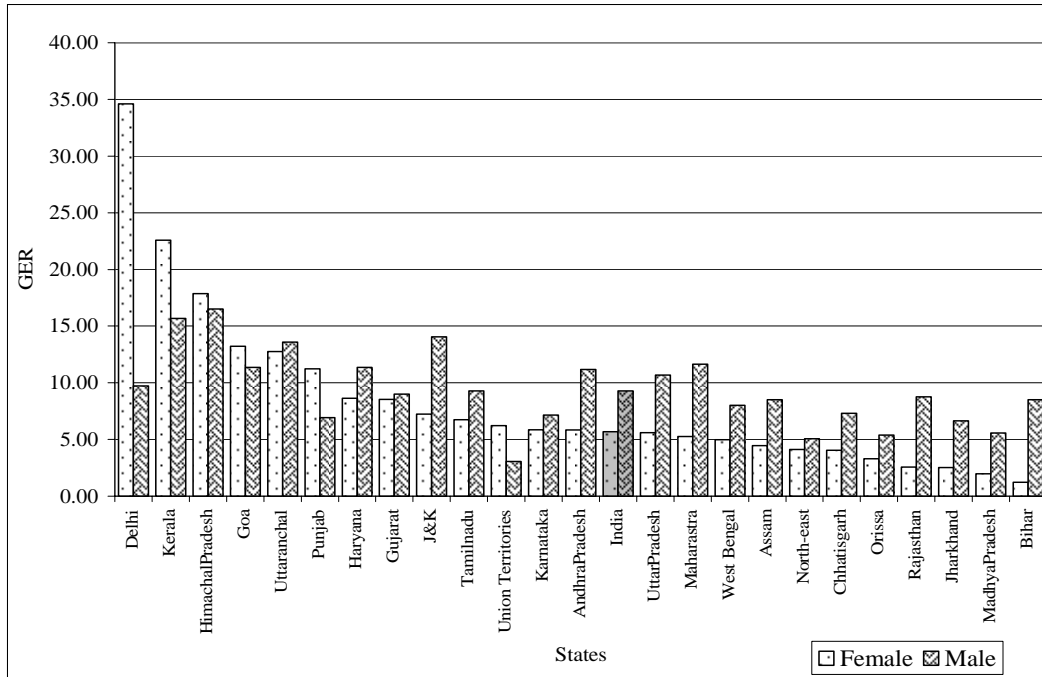
Fig. 9: Urban GER in Higher Education, Age Group 18-23, 2004-2005
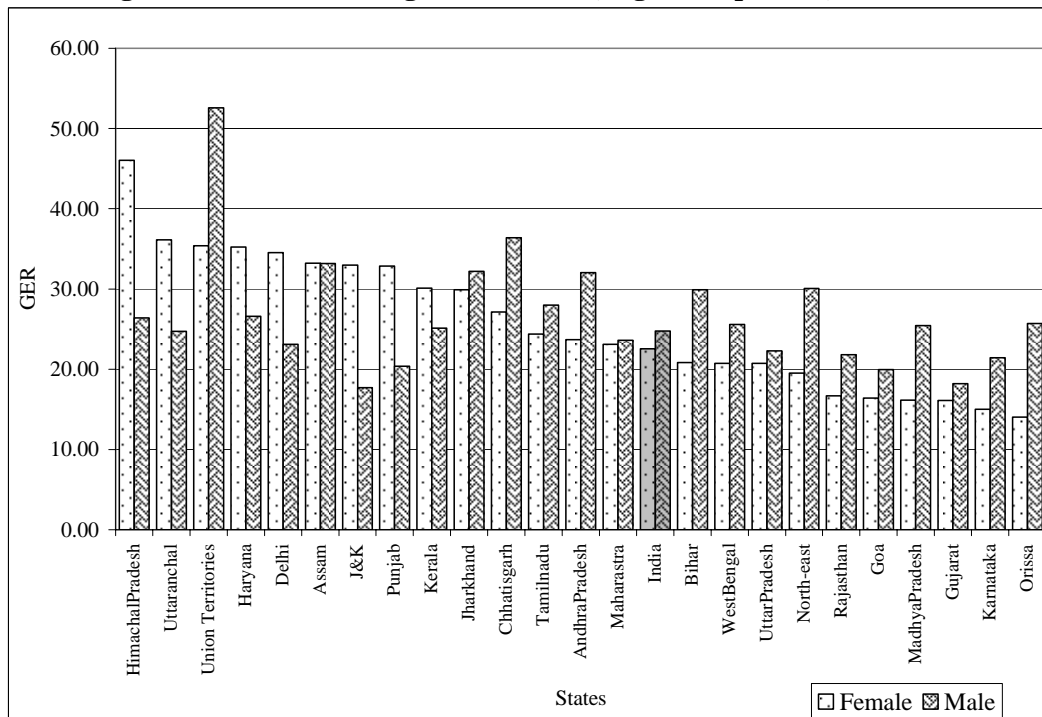
Table 15: GER of Women in Higher Education, Age Group 18-23, 1999-2000
(in descending order)

State	Total	State	Rural	State	Urban
Union Territories	21.93	Kerala	17.36	Himachal Pradesh	56.20
Kerala	20.21	Goa	14.64	J.K	33.34
Goa	17.83	Himachal Pradesh	10.33	Kerala	28.02
Himachal Pradesh	14.09	Union Territories	7.95	Union Territories	25.04
Punjab	11.70	Assam	6.03	Bihar	24.04
Maharastra	11.05	Madhya Pradesh	6.00	Assam	23.98
Madhya Pradesh	9.78	Punjab	5.95	Punjab	21.94
Tamil Nadu	9.40	Tamil Nadu	5.50	North-east	21.84
Gujarat	8.93	Haryana	5.45	Maharastra	21.78
Haryana	8.70	Orissa	3.99	Goa	21.66
J.K	8.55	J.K	3.95	Madhya Pradesh	21.65
India	8.00	Maharastra	3.87	Rajasthan	20.62
Assam	7.90	India	3.61	Gujarat	20.18
Andhra Pradesh	7.26	North-east	3.21	India	19.99
Rajasthan	6.44	Gujarat	2.90	Andhra Pradesh	19.30
Uttar Pradesh	6.36	Uttar Pradesh	2.86	Uttar Pradesh	19.03
Karnataka	5.75	Andhra Pradesh	1.82	Tamil Nadu	16.64
Orissa	5.08	Rajasthan	1.77	Haryana	16.59
North-east	4.41	West Bengal	1.24	Karnataka	15.94
West Bengal	4.18	Karnataka	0.93	West Bengal	15.78
Bihar	3.50	Bihar	0.75	Orissa	10.60

Table 16: State-wise GER of Women in Higher Education,
Age Group 18-23, 2004-05 (In Decreasing Order)

State	Total	State	Rural	State	Urban
Delhi	34.54	Delhi	34.60	Himachal Pradesh	46.04
Union Territories	24.55	Kerala	22.57	Union Territories	35.38
Kerala	24.46	Himachal Pradesh	17.86	Haryana	35.24
Himachal Pradesh	20.46	Goa	13.23	Delhi	34.54
Punjab	19.16	Punjab	11.22	Assam	33.22
Haryana	16.12	Haryana	8.62	J&K	32.97
Goa	14.66	Gujarat	8.53	Punjab	32.85
Tamil Nadu	14.22	J&K	7.22	Kerala	30.11
J&K	13.98	Tamil Nadu	6.75	Bihar	25.07
Maharastra	13.42	Union Territories	6.22	Tamil Nadu	24.39
Gujarat	11.22	Uttar Pradesh	5.95	Andhra Pradesh	23.68
Andhra Pradesh	11.18	Karnataka	5.86	Maharastra	23.08
India	10.57	Andhra Pradesh	5.82	India	22.56
Uttar Pradesh	9.71	India	5.67	Uttar Pradesh	21.7
West Bengal	9.14	Maharastra	5.25	West Bengal	20.72
Karnataka	9.10	West Bengal	4.98	North-east	19.53
Assam	7.74	Assam	4.45	Madhya Pradesh	18.44
North-east	7.52	North-east	4.13	Rajasthan	16.69
Rajasthan	6.49	Orissa	3.28	Goa	16.41
Madhya Pradesh	6.40	Rajasthan	2.57	Gujarat	16.08
Orissa	4.71	Madhya Pradesh	2.51	Karnataka	14.99
Bihar	4.55	Bihar	1.54	Orissa	14.02

Table 17: State-wise Distribution and Growth Rate in Colleges, 2000/2001-2004/2005

State/Region	2000-01	2004-05	GR
North	1358	1865	8.3
Haryana	241	267	2.60
Himachal Pradesh	98	113	3.60
Jammu & Kashmir	101	168	13.6
Punjab	320	468	10.0
Rajasthan	420	636	10.9
Chandigarh	24	29	4.80
Delhi	154	184	4.60
Central	2492	3880	11.7
Chhattisgarh	241	338	8.80
Jharkhand	170	173	0.40
Madhya Pradesh	790	1116	9.00
Uttar Pradesh	1216	2037	13.8
Uttaranchal	75	216	30.3
East	1842	2034	2.5
Bihar	660	665	0.2
Orissa`	699	815	3.9
West Bengal	483	554	3.5
Northeast	574	649	3.1
Arunachal Pradesh	8	12	10.7
Assam	355	396	2.80
Manipur	68	81	4.50
Meghalaya	48	56	3.90
Mizoram	31	30	-0.80
Nagaland	36	42	3.90
Sikkim	7	10	9.30
Tripura	21	22	1.20
West	2467	3284	7.40
Goa	43	46	1.70
Gujarat	620	797	6.50
Maharashtra	1804	2441	7.90
South	4067	5903	9.80
Andhra Pradesh	1402	2096	10.6
Karnataka	1473	1865	6.10
Kerala	352	667	17.3
Tamil Nadu	816	1242	11.1
Pondicherry	24	33	8.30
Other UTs	6	7	3.90
Andaman & Nicobar	4	4	0.0
D&NH	0	0	0.0
Daman & Diu	2	2	0.0
Lakshdweep	0	1	0.0

State/Region	2000-01	2004-05	GR
Total	12806	17622	8.3

Source: Duraisamy 2007

Rural-urban pattern

Bihar, Madhya Pradesh, Orissa, Rajasthan and West Bengal continue to occupy low positions have a similar pattern. However, in case of rural India two more states join the rank of states that have low access to higher education. They are Chattisgarh and Jharkhand. Rural Maharashtra is another case, which in terms of enrolment in higher education lags behind as compared to its urban counterpart. Bihar seems to be unique in terms of urban-rural differentials in GER for women - the GER for rural women is 1.21 as compared to a high of 20.85 for their urban counterparts In terms of urban GER, Orissa is worst followed by Gujarat and Karnataka.

Policy Considerations6

The main exclusionary divide as far as access to higher education is concerned remains the rural urban divide. Rural women, almost without exception, have the lowest access to higher education. Amongst the rural women, it is essentially those from the lower rungs of socio-religious communities who have the lowest access in particular. While providing more colleges in the rural areas is necessary, it is crucial that rural women's access has to be considerably enhanced through their physical reach to already existing urban facilities.

There are indications of daily commuting of rural women to nearby urban areas for educational purposes in states that have better transport infrastructure. There are regions where women's participation in higher education is low, but which have relatively better environment in terms of gender sensitivity – particularly in tribal and some southern states. In such regions, possibility of increasing physical accessibility has to be thought through carefully.

Safety and secure environment matters the most as far as women's mobility is concerned. Along with enhanced physical access, it is absolutely imperative that suitable measures will have to be in place in this regard.

There are several other systemic problems, but two of them are cited to highlight some of them - one is the inadequate funds per se and second, more importantly is the gross under-utilization of even available funds- that too in backward states. It is seen that out of the 8% of total UGC budget that is spent on women's scheme, as high as 95% is spent on hostels. However, the budgetary allocation is grossly inadequate and yet the Plan-wise data for the years 1995-96 to 2005-06 show that although about 70% of allocated money for hostel construction is sought by educational institutes, about 40% is actually utilized as can be inferred from the utilization certificate.

Moreover, there is regional variation, i.e., Bihar has utilized only 17% of allocated money whereas West Bengal and Orissa have utilized about 47% of allocation. This calls for regular monitoring of defaulters and also easing of procedural requirements needed for financial support.

There cannot obviously be 'one glove fits all size' policy. There are pockets where despite having the requisite years of schooling, women find it difficult to enter into higher education. Specific cases and the underlying causes need to be carefully identified and studied and steps taken to address the stumbling blocks.

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[6] This section draws almost entirely from the deliberations of the UGC Sub-Group for the XI Five Year Plan on Gender Concerns in Higher Education under the chairpersonship of Armaity Desai.

Government has introduced several policies, but in the absence of systematic data-base on how these policies actually work, been utilized/not utilized, barriers by the end-users etc., it becomes somewhat difficult to suggest effective interventions. It is therefore suggested that various commissioned evaluation studies on the utilization of various grants to women be conducted.

A Gender Budgeting Cell is needed for gender responsive budgeting initiatives such as to review expenditure and conduct gender based impact analysis, undertake collection of sex disaggregated data and beneficiary incidence analysis.

In addition to enrolment, retention and completion is an issue for women. There has to be avenues for continuing education for women who had interrupted educational trajectory.

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Chapter 5

Inter-Social Groups Disparities in Access to Higher Education

Ravi S. Srivastava and S.Sinha

The relevant data indicate that at aggregate level the access to higher education in terms of gross enrolment ratio is about 11 percent. However at disaggregate level we observed significant disparities between male-female, low and high caste, between religious groups, occupation groups and between poor and non-poor. We use the National sample survey data for 2000 to capture the inter-social groups disparities in the enrolment ratio.

Inter – caste Disparities

In 2000, the GER was about 10 % at over all level. However there are significant disparities across social groups. The GER in rural area is much lower for ST, SC, and OBC as compared with others, it's being 6.43%, 5.0%, 7.0% and 16.74% respectively. Thus GER of SC and ST of were about one-third compared with other. The GER of OBC was about half compared with others (Table 1).

Table: 1 Access to Higher Education by Caste Group – 2000

Socio-Religious Group	Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 2000					
	Total					
	Total Graduates			Total Higher		
	Male	Female	Total	Male	Female	Total
ST	6.04	5.07	5.55	7.19	5.71	6.43
SC	5.08	2.62	3.88	6.63	3.48	5.09
OBC	7.06	3.92	5.53	8.99	4.91	7.00
General	14.22	11.09	12.71	19.20	14.11	16.74
Total	9.21	6.34	7.81	12.12	8.00	10.10
Rural						
ST	4.93	4.39	4.65	5.74	4.53	5.11
SC	3.85	1.27	2.57	5.07	1.70	3.40
OBC	4.62	1.82	3.24	5.88	2.27	4.10
General	8.82	5.01	6.93	11.79	6.19	9.01
Total	5.79	2.97	4.39	7.53	3.61	5.58
Urban						
ST	13.68	10.22	11.97	17.08	14.56	15.83
SC	9.48	8.16	8.87	12.19	10.75	11.53
OBC	14.01	10.34	12.26	17.82	12.96	15.51
General	22.44	21.65	22.07	30.50	27.87	29.28
Total	17.53	15.55	16.60	23.28	19.99	21.74

In urban area the GER for SC, ST, OBC and Other was 11.53 %, 15.83%, 15.31% and 29.28% respectively. Thus the GER for SC in urban area was one third compared with other. The GER of ST and OBC were half compared with others.

Inter- Religion differences

Disparities are also evident in enrolment ratio between religious groups in 2000. In general the GER is higher for the persons belonging to Jainism followed by Christians, Sikh, Hindus and Muslims. The GER for Christians, Sikhs, Hindu and Muslim is 18.56%, 11.29%, 10.44% and 5.23% respectively. The GER was the lowest for the Muslim followed by Hindu (Table 2).

Table 2: Access to Higher Education by Religious Group - 2000

Religious Group	Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 2000					
	Total					
	Total Graduates			Total Higher		
	Male	Female	Total	Male	Female	Total
Hindu	9.71	6.48	8.13	12.73	8.05	10.44
Muslim	4.99	2.87	3.95	6.67	3.74	5.23
Christian	13.14	14.50	13.84	16.68	20.32	18.56
Sikh	8.69	7.83	8.29	11.13	11.46	11.29
Others	12.11	12.69	12.38	18.82	16.35	17.68
Total	9.21	6.34	7.81	12.12	8.00	10.10
	Rural					
Hindu	6.04	2.98	4.53	7.83	3.56	5.72
Muslim	3.29	1.22	2.22	4.03	1.46	2.70
Christian	7.76	9.98	8.91	9.35	13.54	11.51
Sikh	6.03	4.21	5.18	7.40	6.71	7.08
Others	6.42	3.51	5.05	13.97	3.54	9.06
Total	5.79	2.97	4.39	7.53	3.61	5.58
	Urban					
Hindu	19.65	16.90	18.35	26.00	21.42	23.84
Muslim	7.43	6.03	6.80	10.46	8.10	9.41
Christian	23.15	22.75	22.94	30.32	32.71	31.56
Sikh	16.96	18.29	17.60	22.69	25.20	23.90
Others	19.98	26.40	22.88	25.55	35.48	30.03
Total	17.53	15.55	16.60	23.28	19.99	21.74

Source: Employment/Unemployment Survey - NSS - 55th Round

Caste - Religion - Interface

It is evident that SC/ST/OBC persons belonging to Hindu religion lag far behind the higher caste Hindu population in term of access to higher education.

It is also necessary to mention that SC/ST/OBC from other religious back ground namely Muslim, Christian and Sikh religion also suffered from lower access to higher education as compared with their higher caste counter part from these religion.

For instance, in 2003-04 the GER of OBC Muslim was 7 % as compared with 9% for other Muslim. Similar disparities prevail in the case SC Christians and non-SC/ST Christian. In the case of Sikh SC the GER was only 7% compared with 21% for non-SC Sikh population. Similarly the GER of tribal christian was 21.73 % compared to 37.28% for non-tribal Christian (Table 3).

Table 3 Caste Group by Religious Background - 2000 - Total

Socio-Religious Group	Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 2000					
	Total					
	Total Grad			Total Higher		
	Male	Female	Total	Male	Female	Total
ST Hindu	5.77	5.05	5.40	6.79	5.57	6.16
SC Hindu	5.21	2.39	3.83	6.53	3.16	4.88
OBC Hindu	7.32	3.76	5.58	9.33	4.70	7.06
General Hindu	16.69	13.27	15.05	22.63	16.52	19.71
Hindu Total	9.71	6.48	8.13	12.73	8.05	10.44
ST Muslim	3.41	1.54	2.60	6.58	1.54	4.41
SC Muslim	3.92	0.00	1.83	3.92	0.00	1.83
OBC Muslim	3.57	2.59	3.10	4.80	3.01	3.94
General Muslim	5.70	3.06	4.40	7.61	4.17	5.91
Muslim Total	5.09	2.92	4.03	6.80	3.82	5.34
ST Christians	6.50	5.85	6.17	7.04	7.69	7.37
SC Christian	6.68	6.84	6.76	8.97	10.13	9.57
Other Christians	18.89	21.37	20.19	24.64	30.14	27.52
Christian Total	13.14	14.50	13.84	16.68	20.32	18.56
SC Sikh	1.74	1.13	1.46	2.16	2.53	2.33
OBC Sikh	11.07	10.92	11.01	14.36	16.22	15.21
Other Sikhs	12.63	11.10	11.89	16.17	15.70	15.94
Sikhs Total	8.69	7.83	8.29	11.13	11.46	11.28
Total	9.22	6.30	7.79	12.13	7.94	10.08

Table 4 Caste Group by Religious Background - 2000, Rural

Socio-Religious Group	Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 2000					
	Total					
	Total Grad			Total Higher		
	Male	Female	Total	Male	Female	Total
ST Hindu	4.94	4.61	4.77	5.58	4.75	5.15
SC Hindu	3.97	1.18	2.58	4.95	1.64	3.30
OBC Hindu	4.75	1.68	3.24	6.08	2.08	4.11
General Hindu	10.22	5.93	8.14	13.87	7.10	10.58
Hindu Total	6.04	2.98	4.53	7.83	3.56	5.72
ST Muslim	0.00	0.00	0.00	0.00	0.00	0.00
SC Muslim	7.70	0.00	2.90	7.70	0.00	2.90
OBC Muslim	1.91	1.48	1.69	2.48	1.72	2.10
General Muslim	3.90	1.13	2.45	4.74	1.39	2.98
Muslim Total	3.33	1.24	2.25	4.08	1.49	2.74
ST Christians	2.50	3.17	2.84	2.88	3.41	3.15
SC Christian	6.24	3.93	5.03	6.24	3.93	5.03
Other Christians	12.97	17.73	15.43	16.10	25.23	20.83
Christian Total	7.76	9.98	8.91	9.35	13.54	11.51
SC Sikh	1.66	0.63	1.21	2.15	0.87	1.59
OBC Sikh	13.00	7.84	10.52	17.95	11.39	14.81
Other Sikhs	8.23	5.90	7.11	9.68	9.69	9.68
Sikhs Total	6.03	4.21	5.18	7.40	6.71	7.08
Total	5.79	2.97	4.39	7.53	3.61	5.58

Table 5 Caste Group by Religious Background - 2000 - Urban

Socio-Religious Group	Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 2000					
	Total					
	Total Grad			Total Higher		
	Male	Female	Total	Male	Female	Total
ST Hindu	12.81	9.27	11.05	16.74	13.02	14.88
SC Hindu	9.42	7.11	8.35	11.88	9.14	10.62
OBC Hindu	14.81	10.12	12.56	18.78	12.71	15.87
General Hindu	25.21	23.91	24.60	34.15	30.20	32.30
Hindu Total	18.58	15.84	17.28	24.57	20.05	22.43
ST Muslim	5.00	2.71	4.12	9.67	2.71	6.98
SC Muslim	1.19	0.00	0.67	1.19	0.00	0.67
OBC Muslim	5.57	4.23	4.97	7.62	4.91	6.40
General Muslim	7.84	6.49	7.24	11.09	9.12	10.21
Muslim Total	7.18	5.77	6.55	10.09	7.74	9.04
ST Christians	20.41	15.43	17.92	21.50	22.97	22.24
SC Christian	7.79	15.66	11.56	15.86	28.95	22.13
Other Christians	26.24	25.69	25.95	35.25	35.95	35.62
Christians Total	21.75	21.48	21.61	28.45	30.84	29.69
SC Sikh	2.22	3.24	2.78	2.22	9.58	6.29
OBC Sikh	8.64	15.79	11.68	9.83	23.83	15.78
Other Sikhs	24.26	25.15	24.68	33.28	31.96	32.65
Sikhs Total	16.15	17.20	16.65	21.56	23.76	22.62
Total	16.55	14.56	15.62	21.98	18.71	20.44

It is thus evident from these results that the SC from all religion suffered from a lower access to higher education as compared with their high caste counterpart. However between the various religious groups, SC from some religious groups suffers more in access to higher education than other. For instance the GER of SC Christian (9.97%) is relatively higher, followed by SC Hindu (4.88%) and SC Sikh (2.33%). The SC Christian seems to perform better with respect to access to higher education as compared with their counter part from Hindu and Sikh religion. However the limitation of sample size in case of SC Christian needs to be kept in mind.

Gender Disparities

The access to higher education is also low for girls as compared with boys - The GER being 12.12% for male and 8% for female.

It needs to be recognized that although the enrolment ratio are generally lower for the female compared to the male, the female belonging to the lower caste and some religious groups suffer more in access to higher education than others (Table 5 & Table 6).

For instance in 2000, as against the overall average of 8% for the female, the GER was 5.71% for ST female followed by 3.48% for SC female, 5% for OBC female and 14.1% for other female. Thus the GER for SC female was five times less compare to the higher caste female. Similarly, the GER of the ST female was lower by about three times compared with higher caste female.

In the case of religious group, the Muslim women suffer the most. The GER of Muslim female was 3.82% compared to 5.57% for Hindu female, 11.0% for Sikh female, 20% for Christian and 48% for Jain female.

Poor –non-poor Differential

There are also significant differences in enrolment rate among the poor and non-poor. In 2000 the GER for the poor was 2.4 % as against 12.91 % for non-poor, the average being 10.10%. The GER for the poor is almost one twelvth compared with non poor (Table 7).

Similar disparities are evident in rural and urban area. In rural and urban area the GER for poor was 1.30 % and 5.51%, quite low compared with 7.12% and 27.15% for non –poor respectively for rural and urban area.

Within the poor however the GER was the lowest among the poor belonging to ST and SC, followed by OBC and others. The GER for poor belonging to ST, SC, OBC and Other is 1.55%, 1.89%, 2.30%, and 3.58 respectively.

Similar pattern is observed for poor in rural and urban area. In rural area the GER is the lowest for ST with only 1.11% followed by 1.35% for SC, 1.13% for OBC and 1.66% for Others – the overall GER being 1.30%.

Table 6 Poor and Enrolment Status: All India GER and Estimated Number of Enrolled Persons by Social Groups (1999-2000, Sector)

Gross Enrollment Ratio			
Poor			
Social Group	Rural	Urban	Total
ST	1.11	4.78	1.55
SC	1.35	3.86	1.89
OBC	1.13	5.16	2.30
OTHERS	1.66	7.00	3.58
All	1.30	5.51	2.43
Non Poor			
ST	7.81	23.19	9.70
SC	4.38	15.71	6.68
OBC	5.10	19.98	8.69
OTHERS	10.74	34.01	19.73
All	7.12	27.15	12.81
Entire Population			
ST	5.12	15.87	6.43
SC	3.38	11.55	5.08
OBC	4.10	15.53	7.00
OTHERS	9.00	29.28	16.74
All	5.58	21.75	10.10

Note: Gross Enrollment Ratios have been calculated 18-23 year olds who have completed higher secondary.

In urban area the GER for the urban poor is 3.86%, 4.78% 5.16% and 7% respectively for SC, ST, OBC and Others – the average being 5.51%.

Even among the non-poor the GER for the ST, SC and OBC is lower as compared with others. For instance the GER is 6.68%, 9.70%, 8.69%, and 19.73% for SC, ST, OBC and Other respectively – while all India average is 12.81%.

Occupation and Enrolment

Self Employed and Wage Labor

Differences in gross enrolment rate are also evident across occupation groups in rural and urban area. In rural area the GER is generally higher for self employed household engaged in farm and non farm economic activity as compared with those who worked as wage labour in farm and non farm activities. For instance the GER for those engaged in farm and non farm activities as self employed was about 5% as compared with 1.41% for farm wage labour and 3% for non farm wage labour (Table 7).

Table 7 GER for 18-23 age Group by Household Type in Rural and Urban Sectors (1999-2000)

Household Type	ST	SC	OBC	OTH	All
			Rural		
Self Employed in Non Agriculture	2.53	3.77	3.97	7.73	5.17
Agricultural Labour	0.67	1.63	1.16	1.93	1.41
Other Labour	0.91	1.52	4.26	4.02	2.99
Self Employed in Agriculture	3.04	3.95	4.21	8.33	5.64
Others	35.39	14.15	11.54	22.08	18.55
All	5.12	3.38	4.10	9.00	5.58
			Urban		
Household Type	ST	SC	OBC	OTH	All
Self Employed	6.15	7.37	10.05	22.09	15.74
Regular wage and Salary	27.33	18.04	22.19	33.72	28.10
Casual Labour	1.53	2.61	3.34	4.30	3.26
Others	40.38	29.52	41.57	59.60	50.15
All	15.87	11.55	15.53	29.28	21.75

Similarly, in urban area the GER is much higher for those engaged in business, regular salaried and other activities as compared with casual labour. The GER was 50%, 28%, 15.74% and only 3.26% respectively for other, self employed, regular salaried and casual wage labor. The GER is particularly low for casual wage labor.

Thus both in rural and urban area the enrolment rate for the wage (casual) labour is the lowest as compared with self employed and regular wage earner and salaried. The GER is particularly low for Farm Wage Labour.

Caste – Occupation interface

It is to be noted that among the occupation group the enrolment is particularly low for ST, SC, and OBC as compared with higher caste. Thus although GER is generally lower for wage labour, it particularly low for SC/ST compared with others group. For instance as against 1.41% at over all level for wage labor in rural area, the ratio is 0.67%, 1.63%, 1.16% and 1.93% for ST, SC, OBC and other wage labour respectively. (Table 7)

Similarly in urban area the GER for casual labor is 3.26% at over all level as against 1.53%, 2.61%, 3.34 and 4.30% for ST, SC, OBC and other wage labor respectively.

Similar inter-caste differences are observed in case of self – employed cultivator in rural area - the GER for SC/ST/OBC being much lower compared with others. For instance in rural area as against the GER of 5.64% at over all level for self employed in agriculture in rural area, the ratio is 3.%, 3.95%, 4.21 and 8.33% for ST, SC, OBC and other respectively.

In the case of self-employed in non-farm activities or business in rural and urban area also the GER is lower for the SC/ST compared with other group. In rural area the GER for self employed (or business groups) is 2.53%, 3.77%, 3.97% and 7.73% for ST, SC, OBC and Other. In urban area the GER for self employed group among the ST, SC, OBC and Other work out to 6.15%, 7.37%, 10. % and 22% respectively, indicating much lower rate for SC/ST.

Occupation, caste and poverty interface

Among the self employed and wage labor the enrolment is particularly low for the poor household among them. For instance the enrolment rate at over all level for self employed cultivator, self employed in non-farm sector, agriculture labour, other labour, other household in rural area is 5.17%, 1.41%, 2.99%, 5.64%, 18.55% respectively compared with 1.43%, 0.86%, 0.37%, 1.78%, 2.98%, 1.30% for poor self employed cultivator, self employed in non-farm sector, agriculture labour, other labour, other household in that order (Table 8).

**Table 8 GER for 18-23 age Group by Household Type in Rural and
Urban Sectors for the Poor households (1999-2000)**

Household Type	ST	SC	OBC	OTH	All
			Rural		
Self Employed in Non Agriculture	2.38	0.02	1.08	1.64	1.43
Agricultural Labour	0.91	0.01	0.47	0.93	0.86
Other Labour	0.00	0.00	0.52	1.08	0.37
Self Employed in Agriculture	1.31	0.02	1.56	2.11	1.78
Others	2.06	0.02	3.46	3.27	2.98
All	1.11	0.01	1.13	1.66	1.30
			Urban		
Household Type	**ST**	**SC**	**OBC**	**OTH**	**All**
Self Employed	2.45	3.75	4.46	5.35	4.59
Regular wage and Salary	14.38	5.57	7.83	10.17	8.60
Casual Labour	1.93	2.61	2.70	1.80	2.38
Others	14.23	8.46	10.54	20.15	14.39
All	4.78	3.86	5.16	7.00	5.51

**Table 9 GER for 18-23 age Group by Household Type in Rural and
Urban Sectors for the Non-poor households (1999-2000)**

Household Type	ST	SC	OBC	OTH	All
			Rural		
Self Employed in Non Agriculture	2.61	4.47	4.95	9.31	6.34
Agricultural Labour	0.41	1.96	1.54	2.56	1.77
Other Labour	1.39	2.14	5.37	4.86	3.90
Self Employed in Agriculture	4.06	4.63	4.94	9.36	6.68
Others	42.21	17.10	12.96	24.24	21.09
All	7.81	4.38	5.10	10.74	7.12
			Urban		
Household Type	**ST**	**SC**	**OBC**	**OTH**	**All**
Self Employed	9.25	9.58	12.69	26.19	19.82
Regular wage and Salary	30.21	21.54	26.13	36.99	31.91
Casual Labour	0.66	2.61	3.92	6.43	4.17
Others	47.40	34.03	49.83	64.59	56.63
All	23.19	15.71	19.98	34.01	27.15

Similarly in urban area while the enrolment rate at over all level is 15.74%, 28.10%, 3.26%, 50.15% for self employed, regular salaried, casual labour and other household respectively, the same for the poor household belonging to self employed, regular salaried, casual labour and other household is 4.59%, 8.60%, 2.38% and 14.39% respectively.

In other word although the enrolment is lowest among the poor casual wage labour household in rural and urban area (agriculture labour, other labour in rural and urban area –. 86%,. 37% and 2.38 respectively), it is particularly low among the same poor group from the ST/ST/OBC. The enrolment rate being 0.9%,. 01% and. 93% for agriculatural labour for ST, SC and OBC respectively. Similarly it is nil for ST and SC. 52 % for OBC Casual non-farm wage labour in rural area.

In Urban area the enrolment rate for poor casual labour is. 66% for ST 2.61 % for SC and 3.92% for OBC.

Summary

The results based on the National Sample survey data for 2000 provide insights on the disparities on the inter-social varations in access to higher education. We summarize the results

The results clearly indicate that GER of SC, ST and OBC is lower as compared with the general Hindu population. Between them however the GER is lowest for ST, followed by SC and OBC.

There area also significant differences in the enrlement rate between various religious groups. The GER is the lower for the muslim followed by Hindus.

It is also necessary to mention that SC/ST/OBC from other religion such as Muslim, Christian and Sikh religion also suffered from lower access to higher education as compared with their higher caste counter part from these religions.

The enrolement rate is generally very low for casual wage labour households in rural and urban area, as compared with self employed households engagaed in farm and non farm business activities and those engagaed in regular salaried jobs.

Further the enrolment rates are particularly low for the poor as compared with the non-poor persons.

The enrolement rates are also comparatively low for the women as compared with men.

Thus the access to higher education is comparatively less to the SC, ST, followed by OBC which ever religion they belong to, Hindu, Muslim, Sikh, Christan and Buddhist. Among them, the enrolment is particularly low for female. The enrolemnt rate is also particularly low for wage labourhousehold and amomng them it is very low for the poor persons. For all these groups the enrolment rate is particularly low inrural area.

Chapter 6

Inclusiveness and Access of Social Groups
to Higher Education

Sachidanand Sinha
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Introduction

The centrality of education in the process of social and economic development needs no emphasis. Education is a means to realization of a variety of ends: employment opportunities, higher productivity and income, better health, greater social and political participation for creation of a just and equitable social and political order and above all enhancing individual's personal and social endowments and capabilities for a more intensive, socially enriching and sustained well being. At the same time, it is ends by itself as acquisition of knowledge is intellectually stimulating and culturally satisfying. In sum, education generates a host of positive externalities, which directly or indirectly influences almost all facets of social life, and therefore must be viewed as a non-negotiable public good and by far the most potent social investment.

As access to knowledge and means of livelihood form the two most important constituents of social, economic and political power, they tend to become scarce in a stratified social order. The structures of power and dominance, in fact, thrive on the basis of assigning restricted access to sources of knowledge and productive assets to a select privileged few. Lack of access to productive assets and knowledge together causes multiple deprivations and accentuates the degree of poverty and destitution among the deprived sections.

The structure of caste-based social stratification in India presents a unique example of structural and systemic exclusion and deprivation of a very large section of hereditary based low castes. *Dalits* (oppressed), as a majority of the *Sudra* and erstwhile untouchable castes are generally referred to, in the official parlance are called the Scheduled Castes (SCs). The SCs constitute 16.2 per cent (Census, 2001), are economically and educationally the most deprived and vulnerable sections of India's population. The Scheduled Tribes (STs) form yet another segment that has remained dispossessed and marginalized for centuries, which together with the SCs constitute nearly a quarter of India's population.

Acknowledging their centuries-old and accumulated social, economic, political and educational deprivations the Constitution of India makes specific provisions to protect SCs, STs and other weaker sections including the physically challenged from any form of discrimination. Further taking a proactive stance, the Constitution through the Directive Principles of State Policy lays down that the State shall promote with special care the educational and economic interests of the Scheduled Castes and Tribes. Thanks to the policy of positive and protective discrimination and reservations in educational institutions for the socially and economically marginalized segments that the literacy rates and enrolment among the SCs and STs in various stages of school and higher education has increased manifold during the last five decades or so. As a consequence, inequities in

educational attainments across social groups, castes, gender, income levels and states including rural-urban disparities have begun to narrow down.

Ensuring equality of access to sources of social and economic opportunities is the fundamental principle on which a socially just and democratic society evolves. Equitable access to social, religious, occupational and economic groups living both in rural and urban areas to educational opportunities in general and higher education in particular has remained a major challenge before the policy makers for nearly six decades since the independence. It needs no emphasis that the caste-based stratification of Indian society and the variety of ways in which it historically permits (or prohibits) distribution of social goods, services and opportunities has posed a major area of concern in the process of educational development in India. No less significant is the fact that certain religious groups have also been unfavourably placed as has also been the case with agricultural and non-agricultural populations living in the rural areas of India. It needs also to be mentioned that gender inequality has remained pronounced as women in each category of population continue to be trailing behind significantly in comparison to their male counterparts.

The task therefore before the planners and policy makers is to create enabling conditions so that historically deprived social groups, religious and linguistic minorities, the landless and poor wage earners could be brought within the ambit of education in general and higher education in particular, which singularly may create strong and sound bases for socio-economic change and upward mobility. Inclusiveness, in this context, refers to application of the principles and instruments of equity, which could benefit groups that have so far either remained untouched or excluded from the processes of socio-economic and political development.

Objectives:

This study primarily addresses the issue of equity and access to educational opportunities by examining the patterns of enrolment in higher education both at the aggregate and disaggregated levels by socio-economic categories of population as well as inter-state and inter-district levels. The current enrolment scenario in higher education reveals wide regional disparities both with reference to enrolment rates and availability of educational facilities across the states and districts. Disparities are equally large between rural and urban areas as well as among different class sizes of towns and cities. The pattern of disparities by class sizes of urban areas could not be attempted here due to lack of relevant data.

It is expected that this analysis carried out on the basis of gross enrolment rates, (GER) will provide immense insights into the problems confronting enrolment patterns in higher education in the country.

Sources and Methodology

It is fairly well known that the current status of enrolment tends in higher education lacks a firm empirical and analytical basis. As a result, the estimates of current enrolment and the targets for expansion of higher education are not well grounded.

There are varying estimates of enrolment in higher education, based on total enrolment, gross enrolment ratio (GER) and net enrolment ratio (NER). The UNESCO World Education Indicators puts the Gross Enrolment Ratio (GER) in higher education at 6.9 % in 1996. The Tenth Plan had fixed a target for the university and higher education sector to increase the access parameter for the eligible age-group (18-23) from 6 per cent in 2002 to 10 per cent by 2007. This was to be achieved through increasing the enrolment in the university/colleges from 7.5 million in the beginning of the Plan period (2002) to 12.5 million in 2007. The Draft Approach paper for the Eleventh Plan (2006) states that in India about 8.0 percent of the population in the relevant age group is enrolled

in universities and colleges, compared to 20-25% in developed countries. The Plan estimates appear to be based on official data on enrolment collated by the Ministry of Human Resource Development (MHRD) and disseminated through the Selected Educational Statistics (SES). This data source has certain important limitations. Being the most important source of official enrolment statistics, this needs to be considerably strengthened. The National Sample Survey Organization and the population census also periodically collect data on enrolment in higher education. Unlike the SES, which is based on institutional returns, the latter two sources are based on household information.

Following are the three main sources of enrolment statistics on higher education in India:

   a.   Selected Educational Statistics, MHRD, GoI.

   b.   National Sample Survey Organisation, and

   c.   Social & Cultural Tables, C-series, Registrar General of India or the Population Census.

The official statistics of the Department of Education is published annually for various stages of school and higher education in Selected Educational Statistics (SES. SES provides detailed annual enrolment figures by levels (Doctorate, PG, UG, Diploma/Certificate) and stream wise (Arts, Science, Commerce, Engineering & Technology, Medicine, teaching and others in colleges and universities) and enrolment in diploma/certificate courses in polytechnics, teacher training schools and institutes such as Arts and Crafts including industrial trades for boys and girls. These figures are based on the information obtained from the state departments of education. However since 1986-87 enrolment figures for higher education are reported to be provisional because of inadequate coverage and irregular reporting by the constituent states. Some of the major states have not been sending the required information regularly to their respective departments of education for onward transmission to the MHRD. It has also been reported that main reason for inadequate coverage is due to lack of sustained response from institutions of higher education such as the colleges and universities. As a consequence, the figures published in SES are at best estimates arrived at by using the interpolation method and therefore are provisional in nature. Given the format of this source that provides several advantages attempts need to taken in order to strengthen the data information and management system for higher education.

The Census provides data on total enrolment in higher education. For 2001, this figure is available separately for college education and vocational education. The latter includes degree, diploma and certificate courses which is in the higher education segment but also vocational/certificate courses which are not. However, the latter form a small part of total enrolment in higher education. The relevant tables pertaining to population attending educational institutions by type are published in C-series: Social and Cultural Statistics. Census 2001 uses the following definition in order to arrive at the relevant figures:

"A person attending college or university education or any such private (recognised or unrecognised) institution that ultimately result in awarding a Graduate Degree or Post Graduate Degree as recognised by government or university or any other agency authorised by government will be considered as attending college. This will include the study of Arts, Science, Commerce, Home Science, Modern Indian/European languages, Theology, Public Administration, Statistics and other similar subjects." Persons attending distance education find the same probability of getting reported in the census figures.

> "Persons receiving vocational training or attending vocational and professional courses will come under the category of vocational institutions. It includes the study of courses which prepare students for various vocations/ professions such as Agriculture, Teacher Training, Physical Education, Engineering and Technology, Architecture, Fine Arts (Music, Dancing, Sculpture,

etc.), Journalism, Library Science, Law, Medicines, Business Management, etc. Therefore all persons attending vocational or professional courses such as electrician, plumber, carpenter, motor mechanic, fitter, stenography, typing, architecture, engineering, computers, nursing, midwifery, pathology, courses of ayurvedic, unani & other system of medicines; agriculture, dairying, forestry, black smithy, dyeing, tanning, textile, teaching (JBT, B.Ed, M.Ed., etc.); physical education, journalism, library science, art, fine art, dress making, visual communication, etc. will be considered as attending Vocational Institutes. Persons attending computer and similar courses offered by different private institutions will also be covered under this category. Engineering Colleges, Medical colleges, IIT's, Institutes of Business Management, professional courses such as Company Secretary, Chartered Accountant, Law Colleges, etc. are also included under this category."

It is therefore clear that the figures reported by the census under vocational included degree, diploma and certificate courses. It is not possible to disaggregate this category into courses equal and not equal to degree. The census also does not provide stream wise distribution of population attending various levels of education.

The National Sample Survey's (NSS) provides data on higher education for various rounds, including the decennial utilization of education (Rounds 42 and 52) and Employment and Unemployment rounds. The latter give detailed person wise information on the educational attainment and enrolment. The employment and unemployment data for the 38th ꞌ1983), 43rd (1987-88), 50th (1993-94), 55th (1999-00) and 61st (2003-04) rounds have been used in this study to get the educational and enrolment profiles in higher education. It may be noted that the earlier two rounds (38 and 43) only provide data on educational attainment at secondary level. Hence for these years, we have taken secondary education level as a prerequisite for participation in degree, diploma or certificate in higher education. This may have led to an overestimation of total diploma/certificate higher education.

The National Sample Survey's (NSS), Employment and Unemployment rounds give detailed person wise information on the educational attainment and enrollment. We have used the employment and unemployment for the 38th (1983), 43rd (1987-88), 50th (1993-94), 55th (1999-00) and 61st (2004-05), rounds to get the educational profile and enrollment in higher education across states, gender and sectors for the social and religious groups.

Estimates have been done using NSS population weights. Wherever absolute figures are presented the NSS estimates are corrected for census population by using multipliers (ratio of Census/NSS population). By interpolation, using implicit exponential growth rate, the census estimates of population as on January 1, 2000 and 1994 for NSS Employment Unemployment Survey 1999-00 and 1993-94 respectively has been derived.

Discrepancy in NSS age group wise population distribution from the NSS and the Census makes the two results differ. The estimates have done as given below.

a. **Estimated number of those enrolled in Higher Education:** Enrollment in higher education includes those who are currently attending graduate and diploma certificate courses (codes 27 to 35 in current attendance). A condition has been set to get the actual figures of higher education enrollment by putting a qualifier whereby only those who have attained higher secondary education and above (>= code 09 in general education) and are enrolled in higher education (codes 27 to 35 in current attendance) are included. The absolute figures are corrected for the census population and are given stream wise (codes 27 to 35 individually)

b. **Educational Attainment:** This is level of educational accomplishment for the specific age group (18-22/23) that is the percentage of persons with the specific educational level in the age group. Derived for five categories viz. illiterates, primary, middle, secondary + higher secondary and graduates and above (codes as described above).

Enrolments in Higher Education: A Comparative Profile

Table 1 presents gross enrolment rates with reference to population aged 18-23 years from the three sources mentioned above. Thus the GER refers to total enrolment in various categories of higher education divided by population in the 18-23 year age, the relevant age group that is expected to be attending higher education. It is not possible to work out Net Enrolment Rates from the SES data, as the published enrolment figures are not disaggregated by age.

According to the official statistics (SES) GER in higher education in 1983 was 4.04 percent, which increased to 9.01 in 2003-04. It stood at 0.26 percent for vocational courses not equal to degree, while for all technical and vocational courses leading to degree, diploma or certificate the GER was 0.62 percent. The NSSO reports a much higher GER for total higher education at 7.67 percent in 1983, which increases to 10.08 in 1999-00 and 13.22 percent in 2003-04.   On the other hand, census reports GER that is even higher than that of the NSSO. According to the census GER for higher education was nearly 11.00 percent in 1991, which increased to 13.82 in 2001. The figures reported by the census and NSSO though at variance do not differ much because the reason for higher GER from census may largely be due to a significant proportion of students attending non-collegiate pre-higher secondary vocational courses. It may also be noted that the age composition of NSS PSU's could also be responsible for introducing certain degree of variation. It is very well known that the age profile reported by the census and NSS do vary significantly.

Table 1: Gross Enrolment Rates (18-23 years) for Higher Education from various sources

Years	Graduate & Above			Technical/Vocational			Total Higher Education		
Sources	SES	NSSO	Census	SES	NSSO	Census	SES	NSSO	Census
1	2	3	4	5	6	7	8	9	10
1983	3.77	6.66	na	0.26 (0.62)	na	na	4.04	7.67	na
1987-88	4.28	7.51	na	0.41 (0.87)	na	na	4.69	8.57	na
1991	4.22	na	na	0.40 (0.83)	na	na	4.63	na	10.95
1993-94	4.35	6.45	na	0.45 (0.90)	na	na	4.80	8.85	11.74*
1999-00	6.77	7.71	na	0.45 (1.00)	na	na	7.22	10.08	13.19*
2001	7.41		12.4	0.44 (1.03)	2.33 (3.54)*	1.4	7.85	9.91	13.82
2004-05	8.14#	10.84	na	0.39# (1.29)	1.8	na	9.01#	12.6	14.48*

Notes: 1. Figures in parentheses pertains to all technical & vocational both degree, diploma & certificate courses. 2. na= not available or estimated. 3. * denotes estimated figures. 4. SES figures are provisional for years 1991 onwards. 4. # 2003-04

If we compare the enrolment figures obtained from SES with other sources such as the NSSO and Census we observe the magnitude of difference whereby the estimated figures reported by the comparable rounds of NSSO and Census invariably reported higher enrolment. According to the SES the total number of enrolled persons in 1983 was 30.7 lakhs, which increased to 104.9 lakhs in 2003-04 (the estimated figure using the regression model for projection yields 112 lakhs). NSSO figures for the comparable years stood at 58.9 and 161.1 lakhs, while the census put the figure at 106 and 161 lakhs for 1991 and 2001 respectively. The difference in the size of enrolment between the three sources is undoubtedly large.

The difference in the size of enrolled population between the SES and NSSO in the 1980s appears to have been largely on account of under reporting of persons attending UG, PG and above courses. This appears to have narrowed down considerably in the 1990s. However, the difference in the size of population attending technical and vocational courses not equal to degree has however enlarged from 5.8 lakhs in 1883 to 21.8 lakhs in 2003-04. On the whole the difference between the two sources for the 1999-00 and 2003-04 ranges between 29 and 56 lakhs. On the other hand, that between the SES and Census for the 1990s and after is placed in the region of about 60 to 80 lakhs. Similarly, the difference between the census and NSSO for 2001 was observed to be about 45 lakhs, which appears to have narrowed down a little at 21 lakhs in 2003-04.

It is necessary to dwell on the question of why the estimates based on the three sources vary so much. The empirical results presented above makes it amply clear that the SES data tends to underestimate enrolment in various streams especially during the last one-decade or so. As already mentioned that the SES data has been estimated by using interpolation method and is therefore provisional in nature. Attempts at reconciliation based on actual enrolments have been rather few and far between.   One may identify below a few reasons for underestimation in SES data:

1) That public universities and recognized / unrecognized colleges are the source of information on the basis of which enrolment data is compiled by the respective states and UTs.   While the coverage of recognized public institutions has gradually declined over the years, that of the unaided and unrecognized private institutions that have grown phenomenally during the last one decade get hardly represented in the official statistics.

2) This problem is more severe with respect to enrolment in technical and professional (including vocational) education. As is well known that the technical and professional education is managed and funded by various ministries and organizations and are affiliated with the various councils/boards, such as AICTE and MCI. These Councils do not have any mechanism in place to collect enrolment figures for the respective institutions. Moreover, the participation of private aided and unaided institutions in technical and professional education in management and computer sciences, to name a few, has increased significantly. Our considered opinion is that enrolments in such institutions are not getting adequately reported in the official statistics. The tables above suggests that SES reported enrolment of 11.9 lakhs in technical/vocational education during 2003-04 while the census 2001 reported a comparable figure of 16 lakhs, while as per the NSSO estimates using CAGR for the 1983/1999-00 for technical degree alone the figure stood at 14.2 lakhs. Similarly according to the SES figures GER (18-23) in 2003-04 was 9.1 % while the NSSO estimates pegged the same at 13.22%, close to the figure reported by the census. The magnitude of under reporting of vocational / technical education in SES data is well noticed as the difference between the figures reported from SES and NSSO have become larger over the years.

3) There is large number of institutions providing a variety of vocational training leading to diploma and certificate courses both in public and private segments, which also get unreported in SES data.

4) The distance education segment has also grown significantly over the years is yet to find adequate space in the aggregate official statistics. SES 2001-02 reported enrolment of 17 lakhs in distance education. SES in its publications for the later years has removed the section on distance education. It is not clear whether enrolment in distance education has been included in the stream wise statistics.

5) The magnitude of under reporting with respect to general degree education is no less significant. Between the SES and census the difference in enrolment was observed to be as high as 58 lakhs for 2001.

6) There is a very significant difference between the estimated enrolment based on the NSS thick rounds for 2000-01 (1.15 crores) and the Census figures (1.60 crores). Only a very small part of this definition is attributable to the Census definition

Thus, there are reasonable bases to believe that the SES figures are grossly under estimated.

Nonetheless, the SES is the only source, which provides annual (time series) information on state level enrolment in various streams. Thus, the SES data can be subjected to detailed disaggregate analysis. The effort is to assess the trend in projected enrolment and to compare this with other sources (NSS and Census). Duraiswamy's paper included in this volume presents various estimates and projection of enrolments by streams on the basis of the main three sources mentioned above.

Access to Higher Education: general scenario of enrolments at aggregated and disaggregated levels

The Education Commission, 1964-65 using the SES data estimated that in 1950-51 the GER for higher education was 0.7%, which increased to 1.4% in 1960-61. For the recent years 2004-05, GER works out to 9.01% as per SES. As per the estimates using the census data the GER in higher education had risen to 14.48% in 2004-05 while the NSS figures stood at 12.6 for all higher education (i.e., including degree, diploma and certificate courses in technical and vocational streams) and 10.8 for graduation level general education. In 2004-05, GER in all higher education for the rural areas was 7.5 while the comparable figure for the urban areas stood at 23.8. The influence of technical and vocational courses both equal and not equal to degree is discernable as the GER for general education degree courses in urban areas dropped significantly to 19.9, while it was marginal in the rural areas. The level of GER for males was 14.4 while it was 4 points lower for the females with respect to all higher education. The gender difference for general education was a little higher than 3 points. According to the census 15.3% males as against 9.2% females in the age-group 18-23 years were enrolled in general college education in 2001. The magnitude of gender gap in rural areas was over 5 points with GER for females being 4.7. GER for urban females was 19.6%, which was just three points below that of the males. Higher level of access to higher education for urban population is not surprising as it has largely been an urban phenomenon, both socially as well as economically.

Table 2: GER (%) for Higher Education by Areas and Gender (18-23 yrs), NSSO

Year	M/F/T	Graduation & above			All Higher Education		
		Total	Rural	Urban	Total	Rural	Urban
1983		9.47	5.57	19.04	10.87	6.19	22.36
1987-88		10.40	6.60	20.95	11.82	7.35	24.22
1993-94	Male	8.47	5.47	16.16	11.66	7.22	23.05
1999-00		9.22	5.79	16.55	12.13	7.53	21.98
2004-05		12.42	8.32	20.68	14.42	9.28	24.77
1983		3.86	1.50	10.81	4.49	1.84	12.35
1987-88		4.66	1.93	13.53	5.37	2.34	15.23
1993-94	Female	4.31	1.48	12.35	5.88	2.01	16.89
1999-00		6.30	2.97	14.56	7.94	3.61	18.71
2004-05		9.11	5.12	18.87	10.57	5.67	22.56
1983		6.66	3.48	15.19	7.67	3.95	17.68
1987-88		7.51	4.20	17.43	8.57	4.77	19.96
1993-94	Total	6.45	3.50	14.38	8.85	4.66	20.17
1999-00		7.79	4.39	15.62	10.08	5.58	20.44
2004-05		10.84	6.74	19.88	12.59	7.51	23.79

Source: Estimates based on NSS various rounds

The NSS estimates as presented in table 1 also provide temporal profile of enrolments in higher education during the last two decades. Enrolments in higher education has risen by about 4 to 5 percentage points during 1983 and 2004-05 for all segments as presented in the table above. Barring GER for all higher education in urban areas during 1990s all other segments of population registered secular growth during the 1980s and 1990s, while growth in the vocational /technical courses experienced relatively rapid increase in enrolment during the first half of 2000s (Fig.1).

Fig1. Trends of enrolment in higher education
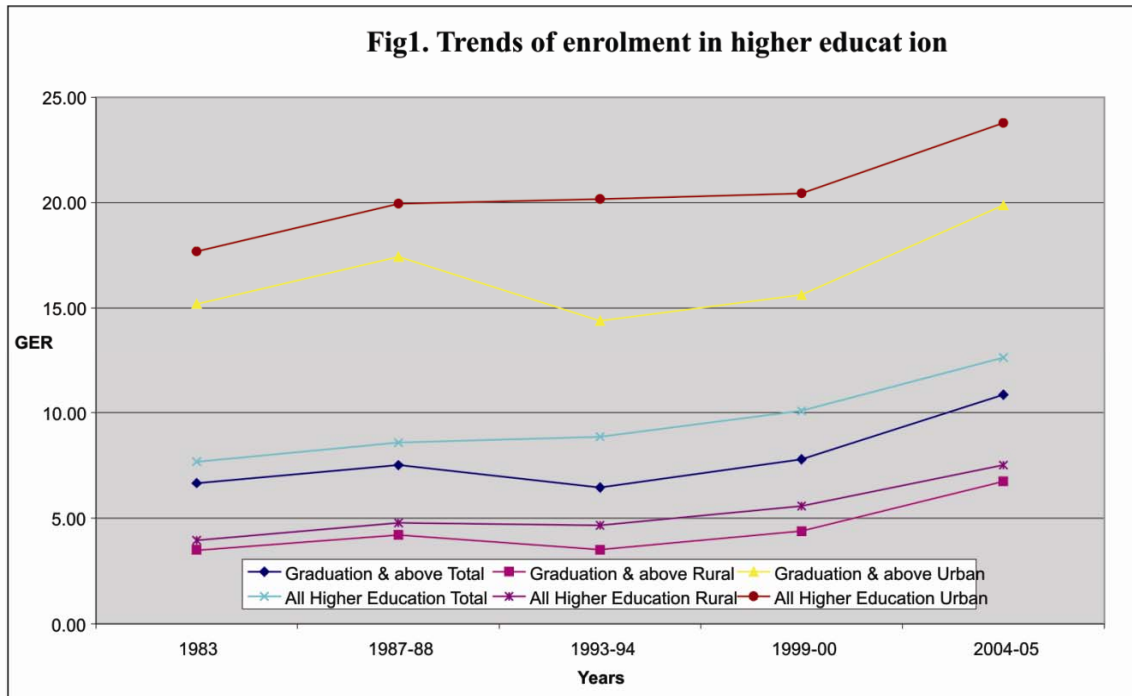
Access by socio-religious groups:

It is an imperative that empirical knowledge of socio-religious disparities in the levels of access to higher education informs the objectives of inclusive policy. India is indeed a land of diversities. The country is a home to almost all religious persuasions in the world that has evolved over the rigid system of caste-based social stratification. Although caste is predominantly a Hindu phenomena it has not left followers of non-Hindu religions untouched. Sociologists inform that the Muslims and Christians communities in India are not organized on egalitarian principles, which forms the cornerstone of the religious and social principles of the two. In spite of having begun as social reform movements within the larger Hindu society Buddhism, Jainism and Sikkhism too have not succeeded in eradicating the caste-based system of social organization among its followers, although they have an autonomous identity of their own. Similarly the tribal populations of India have historically remained outside the ambit of the Hindu caste system and as such may be designated as relatively egalitarian than any other socio-religious segments of the country. However, wherever the tribes have come in contact with agrarian Hindu populations they have gradually found themselves being assimilated within the framework of caste. But the extent of social and economic deprivation to which the tribes have suffered has largely been due to their relative geographical isolation.

Caste has been so deeply entrenched in Indian society that it not only embraces but also affects almost every aspect of social and economic life. Educational disparities among the socio-religious groups in the levels of attainments and enrolments are as significantly pronounced as the patterns of land ownership. The profile of

enrolments by socio-religious groups with reference to higher education in India is adequately captured by tables 2 & 3, both arrived at using the NSSO data of the 61st round (2004-05).

The aggregated picture of religious groups shows that the GER for the Christian population in India was the highest at about 20% with Hindus following way behind at 13%. GER for the Sikhs; a majority of whom lived in the relatively prosperous Punjab and adjoining areas of Haryana, Delhi, Himachal and north-western Himalayan foothills of Uttaranchal, was not observed to be very bright as they were barely 2.5 percentage points above the Muslims (7.7%). Other religious groups comprising those not included in the table, did fairly well with 17.7%, though this figure by no means is representative of any particular religion, or groups of religions as it may include those who could be atheists as also those not included under the framework of more institutionalized and structured religions.   The 61st round data provided little scope to decipher GER for the Buddhists. However, one may note that in 1999-00 round GER for the Buddhists was higher than that of all Hindus, but significantly behind the Christians. Both the tribal component within the Buddhist population as well as the Scheduled Castes reported higher GER than the Hindus. It may also be noted that tribal component within Buddhism is largely concentrated in the hilly districts of the north and north-east India, while the scheduled castes among them is confined mostly in Maharashtra, who embraced the religion, thanks to the initiatives of Babasaheb Bhimrao Ambedkar in forging liberal philosophy and radical actions towards emancipation of the 'untouchables' within the Hindu caste strucutre.

The religious profile of enrolment remains relatively the same both in rural and urban areas. It is however important to note that while urban Hindus register a three-and-a half-fold rise in GER in comparison to their rural counterparts as did the Christians, in case of the urban Muslim the GER was 10.5: just about 3 points higher than their counterparts in rural areas.

A gender differential within the urban and rural segments of the Christians was conspicuous by its absence while for all others it was significantly high. Saraswati Raju deals with the patterns of gender disparities at great lengths in her paper included in this volume.

As already noted religious identities may be monolithic but it is far from homogeneous as various forms of social and economic stratifications, sect-based and linguistic ethnicities may simultaneously co-exist as subsets; on occasions some of these may acquire autonomous entities due to reconfiguration of socio-political and cultural processes.   But the fundamental difference due largely to caste-based and occupation-based segmentation predominantly in rural areas cutting across religion is not hard to decipher. Besides the largest proportion of the Scheduled Castes among the Hindus, Sikhs and Buddhists; tribes among the Christians, one may also find a significant chunk of other backward classes (OBCs) among all religious groups and particularly among the Muslims.

In other words, while castes and educationally and economically backward classes cut across religious identities, religion and backwardness are subsets of social groups for whom various forms of affirmative policy instruments have been placed under the statutory provisions of the Constitution of India. It needs no labour to emphasize that education in India, both in the past as well as in the contemporary times has largely remained the prerogative of the high castes, both in rural and urban areas. Therefore the magnitude of social disparities governing the profile of enrolment in higher education makes it imperative that the effects of backwardness either on account of economic or social exclusion, imbedded in the theory and practice of caste or both implicit in the framework of the OBCs, as well as the effect of religion is isolated in order to arrive at the real differentials in higher education in India. In table 3 the social groups listed in the column include religion: STs would include not only the various religions they follow in different areas, but also those who are so categorized because they lived in scheduled areas. Similar is the case with the SCs, OBCs and 'other', the later two may have a significant proportion of all religions. This picture is revealed by table 2.

Table 3a: Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 2004-05 (TOTAL)

Socio-Religious Group	Total Graduates			Total Higher		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
ST Hindu	7.87	4.76	6.30	8.83	5.10	6.95
SC Hindu	7.73	4.43	6.17	9.00	5.55	7.37
OBC Hindu	11.21	6.60	9.00	12.89	7.78	10.45
Other Hindus	22.04	19.53	20.87	25.90	22.44	24.28
All Hindus	13.07	9.32	11.29	15.19	10.86	13.13
OBC Muslims	7.17	4.73	5.98	8.22	5.16	6.73
Other Muslims	8.10	6.47	7.34	9.57	6.77	8.27
All Muslims	7.77	5.81	6.84	9.09	6.16	7.70
ST Christians	7.18	5.92	6.48	8.67	13.11	11.14
SC Christian	11.26	32.59	23.25	11.89	32.59	23.53
OBC+Other Christians	24.17	20.15	22.29	27.61	22.44	25.19
All Christians	17.21	16.02	16.60	19.72	19.98	19.85
SC Sikhs	2.14	1.83	2.00	3.00	2.32	2.68
OBC Sikhs	NA	NA	NA	NA	NA	NA
Other Sikhs	12.44	18.20	15.03	14.65	21.68	17.81
All Sikhs	7.29	10.01	8.51	8.82	12.00	10.25
ST Buddhist	NA	NA	NA	NA	NA	NA
SC Budhhist	NA	NA	NA	NA	NA	NA
OBC+Other Buddhist	NA	NA	NA	NA	NA	NA
All Buddhists	NA	NA	NA	NA	NA	NA
Others	18.09	12.25	15.40	20.26	14.77	17.74
Total	12.42	9.11	10.84	14.42	10.57	12.59

Table 3b:Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 2004-05 (RURAL)

ST Hindu	6.03	3.89	4.93	6.32	3.97	5.11
SC Hindu	5.68	3.26	4.50	6.39	3.94	5.19
OBC Hindu	8.35	4.30	6.35	9.36	4.77	7.10
Other Hindus	13.74	9.70	11.82	15.14	10.44	12.91
All Hindus	8.63	5.09	6.90	9.58	5.62	7.64
OBC Muslims	6.41	5.00	5.69	7.03	5.25	6.12
Other Muslims	6.57	3.04	4.88	7.89	3.08	5.59
All Muslims	6.52	3.78	5.17	7.60	3.90	5.78
ST Christians	3.36	3.86	3.64	3.62	6.69	5.33
SC Christian	3.68	33.80	21.47	4.81	33.80	21.93
OBC+Other Christians	20.26	14.08	17.21	23.03	16.86	19.99
All Christians	11.47	11.37	11.42	13.01	13.86	13.46
SC Sikhs	2.54	1.18	1.88	3.19	1.71	2.47
OBC Sikhs	NA	NA	NA	NA	NA	NA
Other Sikhs	8.03	11.53	9.67	9.29	14.23	11.60
All Sikhs						
ST Buddhist	NA	NA	NA	NA	NA	NA
SC Budhhist	NA	NA	NA	NA	NA	NA
OBC+Other Buddhist	NA	NA	NA	NA	NA	NA
All Buddhists	NA	NA	NA	NA	NA	NA
Others	4.15	4.87	4.51	4.73	5.19	4.95
Total	8.32	5.12	6.74	9.28	5.67	7.51

Table 3c:Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs: 2004-05 (URBAN)

ST Hindu	20.49	13.17	17.35	26.08	15.96	21.74
SC Hindu	13.06	8.17	10.94	15.80	10.72	13.59
OBC Hindu	18.61	14.30	16.76	22.04	17.86	20.24
Other Hindus	31.91	32.03	31.97	38.71	37.69	38.24
All Hindus	22.80	20.52	21.79	27.48	24.74	26.27
OBC Muslims	8.11	4.30	6.40	9.68	5.02	7.59
Other Muslims	10.23	11.88	10.97	11.91	12.60	12.22
All Muslims	9.44	9.04	9.26	11.08	9.76	10.49
ST Christians	25.95	16.69	20.91	33.52	46.70	40.69
SC Christian	20.81	30.57	25.89	20.81	30.57	25.89
OBC+Other Christians	28.73	29.04	28.87	32.97	30.62	31.94
All Christians	27.32	26.67	27.02	31.55	34.00	32.69
SC Sikhs	0.00	9.93	2.86	1.96	9.93	4.26
OBC Sikhs	NA	NA	NA	NA	NA	NA
Other Sikhs	20.78	34.16	26.27	24.81	39.53	30.85
All Sikhs	10.39	22.04	14.57	13.38	24.73	17.56
ST Buddhist	NA	NA	NA	NA	NA	NA
SC Budhhist	NA	NA	NA	NA	NA	NA
OBC+Other Buddhist	NA	NA	NA	NA	NA	NA
All Buddhists	NA	NA	NA	NA	NA	NA
Others	34.96	24.17	30.44	39.06	30.26	35.37
Total	20.68	18.87	19.88	24.77	22.56	23.79

Source: Estimates based on NSSO unit level data for the 61st Round.

At the aggregate levels the picture of differentials in access to higher education by social groups is presented in table 3. It shows that the non-scheduled-non-OBC 'others' have the highest GER both in rural and urban areas, while the Scheduled Tribes and Scheduled castes have the least. It is rather revealing that the SCs among the Sikhs were the most deprived lots with just 2.7% among them enrolled in higher education. SC Christians and the OBC as well as non-scheduled Christians did very well with almost a quarter among them currently enrolled in higher education, though ST Christians remained far behind fellow Christians, but well ahead of the Hindu tribes. Once the effect of statutory caste, OBC and religion is isolated from the all Hindu component the rank profile of GER in higher education undergoes a significant change with high caste Hindus, christened 'other Hindus' (table 2) emerging way ahead of all socio-religious categories of India's population. One does not notice any significant difference between the OBCs and non-scheduled, non-OBC 'other Muslims' as both remained at the bottom of the table, next only to the SCs and STs. As a matter of fact, the plight of the Muslims altogether is not very different from that of the SCs and STs in general.

Fig 2: Social Pyramid of Educational Deprivation
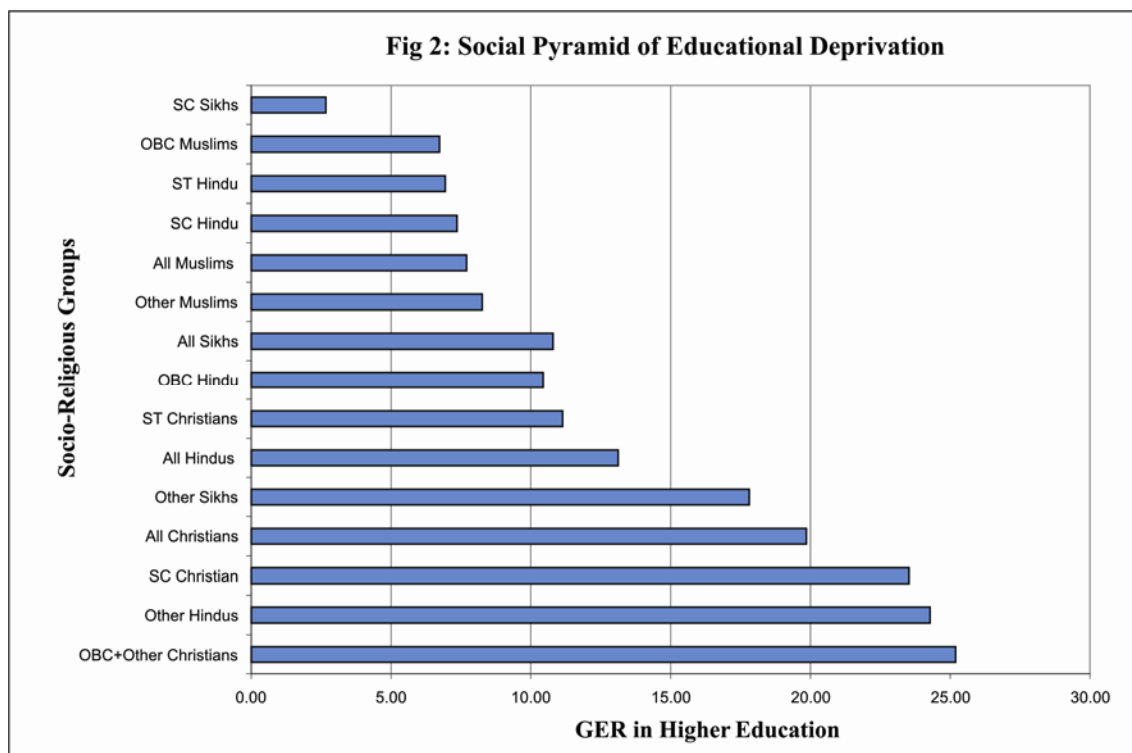
The pyramid of socio-religious differential is captured by fig. 2. It may also be noted that GER for social groups obtained from the census of 2001 largely corresponds with the picture presented above. The census does not allow to disaggregate the data into as many socio-religious categories as has been possible with the NSSO data, however three social groups can be clearly discerned, namely the non-scheduled, scheduled castes and scheduled tribes. Here again the GER for the scheduled tribes was the lowest with 6.8 % while it was 7.5 for the SCs and over two-and-a-half times higher for the non-scheduled (hereinafter NSD). That which emerges as significant from the census data is the fact that while GER for the STs in urban areas was not significantly different from the NSDs with the former obtaining 21.3% as against 23 % by the latter, the SCs did woefully poor in the urban areas, as did rural females with just 2.6% enrolment in the age-group 18-23 years. ST males did better in the urban areas than the NSDs (Table 4).

Table 4: Gross Enrollment Ratio (GER %) in Age Group 18-23 yrs By Social Groups : All India

Social Group	Total Graduates								
	Male			**Female**			**Total**		
	1993-94	**1999-00**	**2004-05**	**1993-94**	**1999-00**	**2004-05**	**1993-94**	**1999-00**	**2004-05**
				Total					
ST	3.42	6.04	7.80	1.62	5.07	5.40	2.48	5.55	6.57
SC	4.35	5.08	7.81	1.22	2.62	5.08	2.83	3.88	6.52
OBC	N.A	7.06	10.85	N.A	3.92	6.51	N.A	5.53	8.77
Others	N.A	14.22	18.23	N.A	11.09	16.06	N.A	12.71	17.22
All	8.47	9.21	12.42	4.31	6.34	9.11	6.45	7.81	10.84
				Rural					
ST	2.69	4.93	5.72	0.68	4.39	3.78	1.63	4.65	4.72
SC	3.19	3.85	5.56	0.39	1.27	3.67	1.83	2.57	4.64

Social Group	Male 1993-94	1999-00	2004-05	Female 1993-94	1999-00	2004-05	Total 1993-94	1999-00	2004-05
OBC	N.A	4.62	8.28	N.A	1.82	4.51	N.A	3.24	6.41
Others	N.A	8.82	11.55	N.A	5.01	7.96	N.A	6.93	9.84
All	5.47	5.79	8.32	1.48	2.97	5.12	3.50	4.39	6.74
				Urban					
ST	9.48	13.68	20.64	10.81	10.22	17.87	10.13	11.97	19.36
SC	9.04	9.48	13.62	4.88	8.16	9.58	7.07	8.87	11.87
OBC	N.A	14.01	16.83	N.A	10.34	12.47	N.A	12.26	14.94
Others	N.A	22.44	26.45	N.A	21.65	26.99	N.A	22.07	26.69
All	16.16	17.53	20.68	12.35	15.55	18.87	14.38	16.60	19.88

Total Higher Education

Social Group	Male 1993-94	1999-00	2004-05	Female 1993-94	1999-00	2004-05	Total 1993-94	1999-00	2004-05
				Total					
ST	4.92	7.19	8.77	2.07	5.71	6.42	3.44	6.43	7.57
SC	5.94	6.63	9.18	1.59	3.48	6.28	3.82	5.09	7.81
OBC	N.A	8.99	12.48	N.A	4.91	7.60	N.A	6.99	10.14
Others	N.A	19.20	21.35	N.A	14.11	18.29	N.A	16.74	19.93
All	11.66	12.12	14.42	5.88	8.00	10.57	8.85	10.10	12.59
				Rural					
ST	3.93	5.74	6.00	1.06	4.53	4.13	2.42	5.11	5.03
SC	4.25	5.07	6.35	0.58	1.70	4.33	2.46	3.40	5.37
OBC	N.A	5.88	9.26	N.A	2.27	4.98	N.A	4.10	7.14
Others	N.A	11.79	12.90	N.A	6.19	8.65	N.A	9.01	10.88
All	7.22	7.53	9.28	2.01	3.61	5.67	4.66	5.58	7.51
				Urban					
ST	13.08	17.08	25.89	11.99	14.56	24.06	12.57	15.83	25.04
SC	12.76	12.19	16.46	6.04	10.75	12.56	9.58	11.53	14.77
OBC	N.A	17.82	19.97	N.A	12.96	15.43	N.A	15.51	18.00
Others	N.A	30.50	31.74	N.A	27.87	31.31	N.A	29.28	31.55
All	23.05	23.28	24.77	16.89	19.99	22.56	20.17	21.74	23.79

Inter-state patterns of access and disparities by social groups

It would be useful to dwell a little on the outcomes of educational processes by taking a look at the social patterns of educational attainments in India. Educational attainment by age and completed levels of education culled from the 2001 census for the SCs, STs and non-scheduled population is presented in Table 5 and Fig. 2 & 3. The figures show the stock of educated and skilled population by social groups, which is on the whole, irrepressibly very poor. The SCs, however, significantly lag behind their non-scheduled counterparts: an indication of the fact that education has generally remained the prerogative of the non-scheduled segment in India and opportunities for educational mobility have been rather few for the traditionally deprived segments of India.

Relatively higher attainment rates for the SCs up to primary education and gradual drop thereafter shows that a majority of SC children have to terminate their school education on or before primary classes, while the non-scheduled children go on to subsequent stages of education. Of all literate SCs only 16.3 percent attained education up to middle or upper primary classes and another 15 per cent received education till secondary and higher secondary levels. Only 3.1 per cent were fortunate enough to graduate from college education.

On the other hand, over 22 per cent among the non-scheduled communities could attain high school education and another 7.64 had graduate and post-graduate degrees. The latest census figures also reveal that in the initial stages of school education corresponding to age group 7-9 there is little difference observed between the two communities. The disparity widens in subsequent age groups and stages of education. A very sharp decline in literacy rates from 68 per cent for the age group 7-9 to 39.6 per cent in 25 and above age group for the SCs as opposed to 73.2 to 62.7 for the non-scheduled speaks of limited educational opportunities for the former even after 50 years of planned interventions in the area of educational development.

The current stock of educated manpower among the SCs is not only characterized by low attainments but also by but also by poor diversification into skill or job oriented technical and professional courses. The table below shows the distribution of population by social groups having attained various levels of education by age. As it is evident that only 0.2 % of SCs in 15-19 years of age have attained undergraduate college education and about 3.6 % had attained graduation and above in the age group 20-24 years. It was 2.5 % for SC population aged 25 and above. On the other hand, nearly 8.9 % of the NSDs were reported to have attained graduation and above degrees. For all ages above 7 years 5.3 % of the NSDs had attained graduation and above degrees, while it was 1.7 for the SCs and 1.1 for the STs. The stark gap in attainment of higher education is significantly visible.

Table 4 presents the distribution of population in the age above 15 years by sex and social groups for those having attained graduate degrees and above. Those holding technical degrees in engineering and technology among the male SCs in 2001 were a little above 5.0 per cent, while it was 3.6 per cent for the females. The corresponding figures for the non-scheduled population stood at 8.6 and 4.0 respectively. Although the inter-community difference for graduates in medicine was not as glaring, the non-scheduled population had a definite edge. Teaching has emerged as an attractive course where the attainment level of the SCs is a little better than that of the non-scheduled population. These figures must be seen in relation to the fact that a much smaller number of SCs are able to enroll themselves in higher education.

Fig.3: Distribution of Non-Scheduled, Scheduled Castes & Scheduled Tribes by Levels of Educational Attainment, 2001
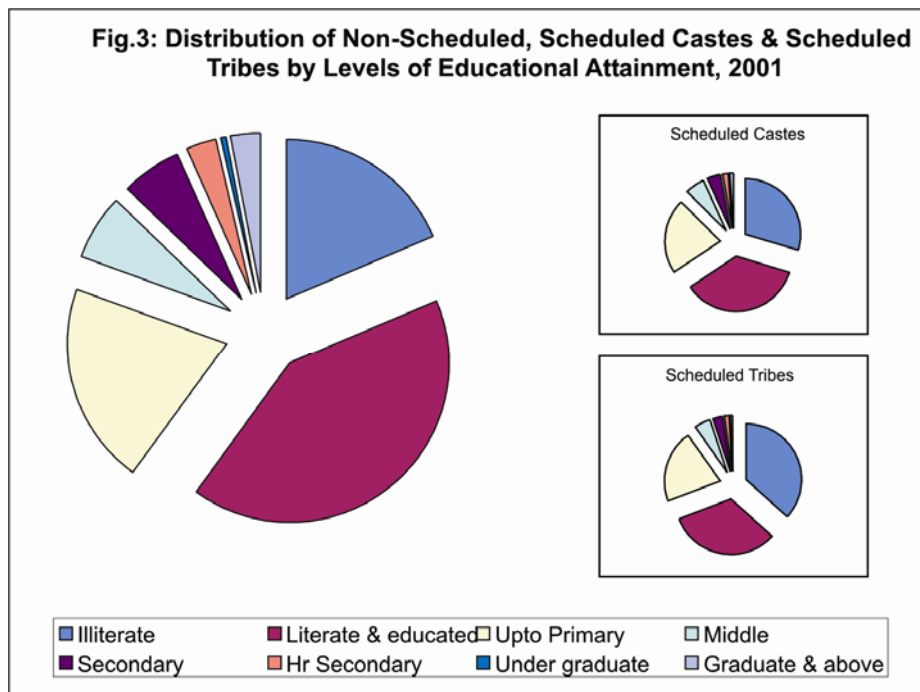
Table 5: Educational Attainment by Age (7+) and Levels for Social Groups, 2001

Educational Level	7 to 9	10 to 14	15 to 19	20-24	25+	All ages
Scheduled Castes						
Illiterate	32.0	21.5	26.8	37.0	60.4	45.3
Literate & educated	68.0	78.5	73.2	63.0	39.6	54.7
Upto Primary (% of literate)	67.3	69.5	30.1	23.5	19.6	33.4
Middle	0.0	8.1	22.1	14.1	6.8	8.9
Secondary	0.0	0.0	15.2	10.7	5.3	5.7
Hr Secondary	0.0	0.0	3.8	7.9	2.3	2.5
Under graduate	0.0	0.0	0.2	0.6	0.2	0.2
Graduate & above	0.0	0.0	0.0	3.6	2.5	1.7
Scheduled Tribes						
Illiterate	41.0	30.4	36.3	46.1	66.6	52.9
Literate & educated	59.0	69.6	63.7	53.9	33.4	47.1
Upto Primary (% of literate)	50.2	62.5	29.2	22.3	17.9	30.7
Middle	0.0	6.0	18.3	11.2	4.7	6.6
Secondary	0.0	0.0	11.4	8.6	3.9	4.2
Hr Secondary	0.0	0.0	2.5	6.2	1.7	1.8
Under graduate	0.0	0.0	0.1	0.4	0.2	0.2
Graduate & above	0.0	0.0	0.0	2.3	1.7	1.1
Non-Scheduled Population						
Illiterate	26.8	16.1	17.8	22.8	37.3	31.2
Literate & educated	73.2	83.9	82.2	77.2	62.7	68.8
Upto Primary (% of literate)	72.4	70.5	24.6	21.0	23.2	34.1
Middle	0.0	12.4	23.7	14.4	10.1	11.2
Secondary	0.0	0.0	23.9	15.5	11.6	10.4
Hr Secondary	0.0	0.0	7.9	13.8	6.3	5.0
Under graduate	0.0	0.0	0.3	1.1	0.8	0.6
Graduate & above	0.0	0.0	0.0	8.9	8.0	5.3

Source: Census of India, 2001

Table 6: Educational Attainment for 15+ Population by Social Groups and Sex, 2001

Educational level	Non-Scheduled		Scheduled Castes		Scheduled Tribes	
	Male	Female	Male	Female	Male	Female
1 Graduate & above	8.8	4.6	3.4	1.0	2.2	0.8
2 Graduate degree other than technical	68.2	67.5	69.6	70.0	71.4	72.2
3 PG degree other than technical	17.3	21.0	18.6	18.9	16.9	16.1
4 Technical degrees						
a) Engineering & technology	8.6	4.0	5.1	3.6	4.4	2.3
b) Medicine	2.2	1.9	1.4	2.1	1.6	2.0
c) Agriculture & dairying	0.4	0.1	0.3	0.1	0.5	0.2
d) Veterinary	0.1	0.1	0.1	0.0	0.1	0.1
5 Teaching	3.3	5.5	4.4	7.1	6.2	7.2
6 Others	0.1	0.1	0.1	0.2	0.1	0.1

Source: Census of India, 2001

The educational scenario in India is characterised by wide inter state and inter-district variations in levels of enrolment in higher education. The magnitude of variation is even wider for the rural females who also suffer from very low levels of enrolment. Inter-state variation by social groups in the levels of enrolment as revealed below (table 7a-c) shows that some of the states in the North-eastern India such as Manipur had the highest GER followed by Nagaland, while another minor state (in terms of population size) Uttaranchal followed closely by Maharashtra, Kerala, Delhi, Pondicherry, Himachal Pradesh had GER above the national average. Sikkim had the lowest GER in the country, the rank which she shared with Tripura. Among the major states Rajasthan shared the space with West Bengal, Madhya Pradesh, Gujarat, Tamil Nadu and Karnataka with lower than the all-India GER. These states had lesser proportion of population in the 18-23 years age enrolled in higher education and it is interesting to note that Gujarat and Tamil Nadu had much lower GER than Bihar, UP and Orissa. It is instructive to note that some of the economically and educationally (with respect to literacy rate and school enrolment) backward States such as Orissa, Assam, Jharkhand and Andhra Pradesh have shown significantly higher enrolments in higher education in comparison with relatively better-off States such as Tamil Nadu and Karnataka. There could be a number of factors responsible for this pattern. The foremost factor is the grossness of enrolment ratio, which includes those enrolled in higher education irrespective of the age. Since GER is a gross and not a net measure it could be safely assumed that the extent of grossness on account of over aged persons attending colleges in the relatively backward areas (as is generally observed in rural areas), may be responsible for inflating the enrolment ratio. Besides, one may not ignore the fact that Assam and Orissa in spite of their relative backwardness have been doing fairly well especially in the context of higher education. One may also observe that Tamil Nadu and Karnataka, among several other States, reported lower college level enrolment among persons having completed higher secondary education. It was around 52 per cent for the country as a whole, the relevant figure for Tamil Nadu was about 40 per cent, while Bihar, Orissa, and Assam reported higher figures. It needs to be understood that higher education has essentially been the prerogative of the relatively better-off sections: salaried and self-employed in urban areas and landed upper classes (as well as castes) in rural areas. These sections irrespective of their place of residence have always found means to access opportunities in higher education. This coupled with the overall scenario of educated unemployment in India may have different implications for different sections of population. While the better-offs may still continue to wait and carry on education until such a time they found employment of their choice, for others poverty may force them to join the workforce in any capacity without waiting for further education or better job prospects. Enrolment in higher education thus is significantly influenced by class dynamics, which varies significantly across the States and districts.

Table 7a:Gross Enrolment Rates for all areas in Higher Education by Social Groups & States, Census 2001

States/Uts	Areas	All	ST	SC	NSD
INDIA	Total	12.40	6.83	7.52	13.95
State - ANDHRA PRADESH	Total	14.19	5.95	10.52	15.55
State - ARUNACHAL PRADESH	Total	7.01	7.88	4.59	5.59
State - ASSAM	Total	15.28	16.39	11.31	15.44
State - BIHAR	Total	11.95	6.14	4.82	13.27
State - CHHATTISGARH	Total	8.91	4.13	8.13	11.46
State - GOA	Total	14.96	2.63	9.96	15.07
State - GUJARAT	Total	8.94	5.02	8.20	9.63
State - HARYANA	Total	12.83	nst	5.92	14.47
State - HIMACHAL PRADESH	Total	16.12	11.57	9.66	18.55
State - JAMMU & KASHMIR	Total	12.58	4.28	5.19	14.29
State - JHARKHAND	Total	14.76	8.60	7.15	18.44
State - KARNATAKA	Total	12.04	6.47	9.03	13.06
State - KERALA	Total	17.60	5.28	10.80	18.58

State - MADHYA PRADESH	Total	8.92	2.28	5.40	11.42
State - MAHARASHTRA	Total	17.33	7.82	16.75	18.32
State - MANIPUR	Total	33.37	27.12	33.77	37.10
State - MEGHALAYA	Total	14.97	13.52	12.06	23.50
State - MIZORAM	Total	9.00	9.30	12.12	4.78
State - NAGALAND	Total	24.55	25.16	nsc	18.66
State - ORISSA	Total	13.66	4.70	8.37	17.64
State - PUNJAB	Total	11.12	nst	4.44	13.77
State - RAJASTHAN	Total	8.23	5.64	4.77	9.47
State - SIKKIM	Total	6.24	7.11	4.13	6.15
State - TAMIL NADU	Total	9.50	2.63	5.92	10.44
State - TRIPURA	Total	6.24	2.33	5.20	8.80
State - UTTAR PRADESH	Total	12.57	5.95	7.29	13.90
State - UTTARANCHAL	Total	17.81	14.74	9.51	19.70
State - WEST BENGAL	Total	8.63	2.51	5.02	10.26
State - ANDAMAN & NICOBAR ISLANDS	Total	7.42	3.21	nsc	7.75
State - CHANDIGARH	Total	26.67	nst	10.37	30.00
State - DADRA & NAGAR HAVELI	Total	3.30	1.84	8.92	4.41
State - DAMAN & DIU	Total	3.91	2.31	10.34	3.86
State - DELHI	Total	18.21	nst	7.86	20.44
State - LAKSHADWEEP	Total	2.67	2.73	nsc	1.70
State - PONDICHERRY	Total	18.15	nst	12.31	19.32

Inter-state profile of enrolment in higher education for rural areas suggests that Manipur had the highest GER followed by Nagaland. Kerala acquired the third rank followed by Himachal, Assam, Uttaranchal, Maharashtra, Goa and Delhi. For all these states the GER varied between 10 and 16 per cent. Daman and Diu, Dadar & Nagar Haveli and Lakshadweep among the Union Territories and Mizoram and MP among the states had very low GER i.e. below 3.5%. Here again the relatively developed states scored much lower GER than the national average (8.13). The pattern for urban areas remain more or less the same, but for the fact that Meghalaya, Himachal, Bihar and Jharkhand improved their ranks significantly to acquire the 3rd, 4th, 5th and 6th position respectively. It is interesting to note that Bihar and Jharkhand were about 15 points above the national average (21.84), while Gujarat and Tamil Nadu had one of the lowest GER for the urban areas.

As against the national average of 15.3 % for the males Manipur (37.8), followed 10 points behind by Nagaland at 27.3; Maharashtra was the only major state to obtain over 20% enrolment in higher education for her male population. Assam, Bihar, Goa, Himachal, Jharkhand, Kerala, Orissa and Uttaranchal were some of states that had higher GER than the national average. Andhra Pradesh and UP remained close to the average figure.

Bihar and Orissa that had shown better than average enrolment for all parameters mentioned above seems to be doing rather poorly insofar as enrolment of females in higher education was concerned. On the contrary, Haryana and Punjab attained higher enrolments in excess of the national average. This appears somewhat incongruous especially as the intensity of patriarchal values in these two states has earned them a bad reputation as the most gender intolerant areas of the country. The role of large scale recruitment in armed forces and rapid urbanization and overseas migration has certainly created favourable conditions for females' continuation in higher education.

Kerala lives up to her reputation as the most gender friendly state in the country with negligible gender disparity both in urban and rural areas. Gender disparity has been measured here in terms of male-female ratio of GER. If the value of m/f was unity (1.0) it showed no disparity between the two sexes. Lower than unity conveyed that female GER was higher than that of the males, while if the value was more than 1.0 then the males were better-off. One could hardly expect a situation of perfect equality in the context of GER for higher education.

Therefore, for this exercise it is suggested that m/f value in the region of 0.9 to 1.2 be considered as 'no disparity'.

Table 7b:Gross Enrolment Rates for rural areas in Higher Education by Social Groups & States, Census 2001

States/Uts	Areas	All	ST	SC	NSD
INDIA	Rural	8.13	5.18	5.64	9.13
State - ANDHRA PRADESH	Rural	8.52	4.85	7.49	9.16
State - ARUNACHAL PRADESH	Rural	4.40	4.99	3.77	3.19
State - ASSAM	Rural	12.59	14.88	9.79	12.41
State - BIHAR	Rural	8.55	4.18	3.62	9.52
State - CHHATTISGARH	Rural	4.56	2.72	5.84	5.56
State - GOA	Rural	11.36	4.00	6.67	11.44
State - GUJARAT	Rural	5.10	4.41	6.03	5.19
State - HARYANA	Rural	8.68	nst	4.88	9.71
State - HIMACHAL PRADESH	Rural	13.52	9.29	8.55	15.56
State - JAMMU & KASHMIR	Rural	7.43	3.38	3.86	8.48
State - JHARKHAND	Rural	7.17	5.38	3.86	8.76
State - KARNATAKA	Rural	6.95	4.68	5.90	7.44
State - KERALA	Rural	15.89	4.85	9.62	16.93
State - MADHYA PRADESH	Rural	3.64	1.31	2.82	4.72
State - MAHARASHTRA	Rural	12.02	5.54	13.55	12.87
State - MANIPUR	Rural	28.22	25.99	28.91	30.22
State - MEGHALAYA	Rural	7.63	7.18	10.53	11.64
State - MIZORAM	Rural	3.36	3.50	16.67	0.66
State - NAGALAND	Rural	20.32	20.69	nsc	13.91
State - ORISSA	Rural	10.24	3.80	7.32	13.32
State - PUNJAB	Rural	6.57	nst	3.26	8.18
State - RAJASTHAN	Rural	4.62	4.67	3.50	4.90
State - SIKKIM	Rural	4.93	5.63	3.13	4.86
State - TAMIL NADU	Rural	5.60	1.85	4.44	6.05
State - TRIPURA	Rural	4.08	1.74	4.19	5.72
State - UTTAR PRADESH	Rural	9.00	3.96	5.96	9.89
State - UTTARANCHAL	Rural	12.26	12.30	7.03	13.53
State - WEST BENGAL	Rural	5.11	1.98	4.13	5.84
State - ANDAMAN & NICOBAR ISLANDS	Rural	4.23	1.18	nsc	4.59
State - CHANDIGARH	Rural	6.21	nst	5.07	6.40
State - DADRA & NAGAR HAVELI	Rural	2.16	1.43	10.55	2.85
State - DAMAN & DIU	Rural	2.06	1.77	9.09	1.94
State - DELHI	Rural	10.86	nst	5.76	12.19
State - LAKSHADWEEP	Rural	3.20	3.29	nsc	1.54
State - PONDICHERRY	Rural	10.43	nst	8.53	11.12

Among the states, Kerala, Meghalaya, Uttaranchal and Goa showed no gender disparity. The highest level of disparity in favour of males was observed in Bihar, Rajasthan and Andhra Pradesh where the value of m/f stood in excess of 2. Maharashtra, Assam, Tamilnadu, Gujarat and some of the north-eastern states showed low levels of gender disparity with males having higher GER than the females, while Punjab presented the case of low disparity in favour of females.   M/F ratio for the rural population was more-or-less similar, but the profile of gender disparity in urban areas of the states showed remarkable decline in the magnitude as urbanization could be seen to have played a positive role in bringing down gender differences in access to higher education. In as many as 13 major states no gender disparity was observed with Punjab inching towards high m/f ratio in favour of females

while Bihar, which had the highest value for the total (rural + urban), doing much better in urban areas with ratio of 1.6.

Table 7c: Gross Enrolment Rates for urban areas in Higher Education by Social Groups & States, Census 2001

States/Uts	Areas	All	ST	SC	NSD
INDIA	Urban	21.84	21.25	13.69	22.99
State - ANDHRA PRADESH	Urban	27.05	17.42	22.37	27.80
State - ARUNACHAL PRADESH	Urban	15.40	21.24	5.40	10.40
State - ASSAM	Urban	31.52	43.45	18.78	32.05
State - BIHAR	Urban	36.28	33.74	19.46	38.02
State - CHHATTISGARH	Urban	22.62	23.02	14.83	23.78
State - GOA	Urban	18.72	1.96	12.59	18.86
State - GUJARAT	Urban	14.58	10.48	11.17	15.02
State - HARYANA	Urban	22.37	nst	9.40	24.57
State - HIMACHAL PRADESH	Urban	36.64	58.69	23.22	38.86
State - JAMMU & KASHMIR	Urban	26.93	18.22	11.23	28.07
State - JHARKHAND	Urban	35.48	34.94	18.38	37.60
State - KARNATAKA	Urban	20.45	14.63	16.49	21.21
State - KERALA	Urban	22.61	17.74	16.25	23.12
State - MADHYA PRADESH	Urban	21.29	13.38	12.07	23.32
State - MAHARASHTRA	Urban	23.26	20.03	20.96	23.60
State - MANIPUR	Urban	48.04	48.53	36.64	48.81
State - MEGHALAYA	Urban	38.40	39.62	14.29	36.18
State - MIZORAM	Urban	13.87	14.49	11.11	6.95
State - NAGALAND	Urban	45.38	54.50	nsc	23.08
State - ORISSA	Urban	30.02	17.39	15.19	33.43
State - PUNJAB	Urban	19.35	nst	7.83	22.31
State - RAJASTHAN	Urban	18.11	19.15	8.94	19.72
State - SIKKIM	Urban	15.29	21.09	10.42	14.52
State - TAMIL NADU	Urban	14.22	6.52	9.04	15.08
State - TRIPURA	Urban	16.33	18.41	9.53	17.99
State - UTTAR PRADESH	Urban	23.54	19.79	14.85	24.74
State - UTTARANCHAL	Urban	31.60	45.23	18.92	33.29
State - WEST BENGAL	Urban	17.07	9.46	9.14	18.50
State - ANDAMAN & NICOBAR ISLANDS	Urban	13.43	38.42	nsc	13.15
State - CHANDIGARH	Urban	29.41	nst	10.96	33.27
State - DADRA & NAGAR HAVELI	Urban	6.47	5.74	6.05	6.64
State - DAMAN & DIU	Urban	9.15	4.19	12.10	9.33
State - DELHI	Urban	18.73	nst	8.04	21.00
State - LAKSHADWEEP	Urban	1.98	2.00	nsc	1.84
State - PONDICHERRY	Urban	22.06	nst	16.64	22.78

The social differentials in GER for higher education could be very instructive for policy perspectives on reducing educational gaps. It is important to note that much of India's achievements in the area of higher education are underlined by proportionately higher representation of the non-scheduled sections. The policy of reservations for the socially deprived groups such as the scheduled castes and tribes has undoubtedly opened the doors of higher education for them, although their level of access to institutions of professional, vocational and technical education has remained poor. According to the Census 2001 persons attending college education for all populations in 18-23 years of age stood at 12.4%; it was about 14.0 for the non-scheduled populations while for the SCs and STs it remained far less at 7.5 and 6.83.   The SCs and STs fared far too poorly in the rural areas.

It is rather well known that fewer men and women from the ranks of the SCs are fortunate to seek higher education in India. However, the participation of SCs in higher education has registered significant improvements since 1991 largely owing to implementation of reservation policy in institutions of higher and professional education. It can be illuminating to examine the participation rates of social groups as a ratio of the share of each group in population vis-à-vis the share of respective groups in total enrolment, which J.P.Naik termed as the index of equality.

The participation rate of SCs males in 2001 was up by over 2 percentage points as it stood at 11.1 percent of total enrolment in higher education. The increase for the females was even more spectacular, registering over two-fold growth from 4.5 per cent in 1991 to 8.8 percent in 2001. Increase in participation rate can be seen to have taken place in all streams, courses and stages of higher education for the SCs, but more significantly in graduation, both arts and sciences, and B.Ed. Their participation in technical and professional courses such as engineering and medicine, though improved remains much smaller than their share in population. There has been a marginal improvement in their participation in post-matric technical diploma courses as they continue to be under represented in polytechnic and technical & industrial crafts.

Table 8: India: Participation of Scheduled Castes & Scheduled Tribes in Higher Education, 1991 & 2001

Stages of Hr. Education	Scheduled Castes				Scheduled Tribes			
	1991		2001		1991		2001	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Total Hr. Education	9.0	4.5	11.1	8.8	2.4	1.5	3.8	3.2
Research & Post-Graduate	8.9	2.2	13.4	9.3	2.6	0.6	3.3	2.3
Graduate General / Non-technicalDegree	9.4	4.9	14.0	8.2	2.5	1.7	4.2	2.8
BA/BA Hons.	13.6	5.6	16.6	9.4	4.1	2.5	6.1	3.9
BSc/BSc Hons.	6.6	4.6	11.0	8.6	1.1	0.6	2.2	1.7
B.Con/B.Com Hons.	5.8	3.6	11.5	4.9	1.4	0.8	2.1	1.2
B.Ed/B.T.	11.0	5.0	15.2	11.0	2.8	1.6	5.5	3.8
Graduate Technical./ ProfessionalDegree	6.4	6.9	7.4	13.6	1.5	1.4	4.8	4.6
B.E./BSc Engg./B.Arch.	5.7	5.5	7.4	7.5	1.1	0.6	4.2	1.6
M.B.B.S	8.9	8.1	11.0	10.8	2.9	2.1	11.6	11.4
Others	na	na	16.1	16.1	na	na	8.7	7.8
Post-Matric Diploma	10.9	3.8	10.6	12.2	4.2	1.6	4.2	4.5
Polytechnic	8.7	8.5	10.2	11.4	2.1	1.5	3.6	3.8
Teachers Training Schools	14.3	1.4	17.0	14.2	2.5	10.5	8.8	6.2
Technical &Industrial Crafts	12.0	12.5	10.2	11.7	4.1	5.1	4.1	4.6

Source: Selected Educational Statistics, 1991 & 2001

The traditional divide between the high-caste Hindus and the SCs insofar as choice of educational courses is concerned has begun to wilt. There used to be fewer SCs students enrolled in sciences and commerce courses of the three-year bachelor programme in the past. Now SCs have improved their presence in BSc courses from 6.6 to 11 percent. Commerce has emerged as an attractive proposition too for the SCs. It must however be noted that much of this increase could be due to the overwhelming presence of SCs men and women in pass courses as fewer get admitted to the honours course because of the criteria of marks cut-offs. Their significant growth in short term job-oriented professional degree courses such as B.Ed is a pointer to the possibility of attracting more SCs to higher education if the current graduation courses are further diversified and made more job-oriented.

Table 9: Participation and Coefficient of Equality in Higher Education for Scheduled Castes

States	Participation in				Coefficient of Equality			
	Higher Education		Tech. Education*		All Hr. Education		Tech. Education	
	1991	2001	1991	2001	1991	2001	1991	2001
India	7.43	10.29	6.47	7.23	0.45	0.64	0.40	0.45
Andhra Pradesh	11.29	13.90	10.08	12.13	0.71	0.86	0.63	0.75
Assam	7.45	8.80	5.46	10.72	1.01	1.28	0.74	1.55
Bihar	na	5.58	na	3.42	na	0.36	na	0.22
Gujarat	7.24	15.23	5.26	5.38	0.98	2.14	0.71	0.76
Haryana	5.65	9.45	16.95	3.93	0.29	0.48	0.86	0.20
Himachal	7.33	12.55	13.32	8.96	0.29	0.51	0.53	0.36
J&K	na	0.00	na	0.00	na	0.00	na	0.00
Karnataka	na	12.74	3.96	5.89	na	0.79	0.24	0.36
Kerala	6.41	9.63	6.75	6.52	0.65	0.98	0.68	0.66
MP	7.27	8.99	10.20	6.34	0.50	0.59	0.70	0.42
Maharashtra	8.25	9.85	5.73	1.72	0.74	0.97	0.52	0.17
Orissa	6.36	9.34	9.22	8.53	0.39	0.57	0.57	0.52
Punjab	11.75	12.07	18.55	7.80	0.42	0.42	0.66	0.27
Rajasthan	na	10.34	na	19.17	na	0.60	na	1.11
Tamil Nadu	12.93	18.62	10.01	10.98	0.67	0.98	0.52	0.58
Tripura	11.45	15.79	15.80	16.97	0.70	0.91	0.97	0.98
UP	11.61	14.08	4.80	22.03	0.55	0.67	0.23	1.04
West Bengal	7.49	11.70	5.94	8.04	0.32	0.51	0.25	0.35
Delhi	5.76	10.28	11.27	8.74	0.30	0.61	0.59	0.52

* Degree courses only.

Table 10: Participation and Coefficient of Equality in Hr. Education for Scheduled Tribes

States	All Higher Education		Technical Education*		Coefficient of Equality			
					All Higher Education		Technical Education	
Year	1991	2001	1991	2001	1991	2001	1991	2001
India	2.05	3.57	1.48	5.29	0.25	0.44	0.18	0.65
Andhra Pradesh	1.51	3.64	2.04	4.24	0.23	0.55	0.31	0.64
Assam	8.24	12.67	9.07	10.89	0.66	1.02	0.73	0.88
Bihar	na	3.14	na	4.84	na	0.44	na	0.68
Gujarat	7.41	7.27	2.64	6.03	0.50	0.49	0.18	0.41
Haryana	na	na	na	na	na	na	na	na
Himachal	2.83	4.07	6.39	5.38	0.70	1.01	1.59	1.34
J&K	na	0.00	na	0.00	na	0.00	na	0.00
Karnataka	na	3.59	0.94	1.56	na	0.55	0.14	0.24
Kerala	0.33	0.82	0.59	0.84	0.29	0.72	0.52	0.74
MP	4.80	11.84	5.70	8.53	0.21	0.51	0.25	0.37
Maharashtra	1.69	3.00	1.20	0.77	0.19	0.34	0.14	0.09
Orissa	5.15	8.17	10.46	11.57	0.23	0.37	0.47	0.52
Punjab	0.00	0.00	0.00	0.00	na	na	na	na
Rajasthan	na	7.18	na	2.30	na	0.57	na	0.18
Tamil Nadu	0.25	1.67	0.72	11.61	0.24	1.60	0.69	11.12
Tripura	4.25	9.64	15.20	25.98	0.14	0.31	0.49	0.84
UP	0.35	0.27	0.50	1.18	1.74	1.37	2.49	5.89
West Bengal	0.32	1.47	0.59	0.17	0.06	0.27	0.11	0.03
Delhi	0.51	1.95	1.45	3.56	na	na	na	na

* Degree courses only

The pattern of participation in higher education varies enormously across the states. As shown in Table 8 above, highest participation of SCs was observed in Tamilnadu for the year 2001 followed by Tripura, Gujarat and UP. Tamilnadu, Tripura, Kerala and Maharashtra have nearly achieved equality between the two segments insofar as enrolment to higher education is concerned. Gujarat stands out as the only state where the coefficient of equality for SCs is over two-times their population in the state. It means that SCs have made significant inroads into college education in Gujarat. It may be noted that higher education has not been a priority among the propertied classes in the state for very long. After attaining school education the non-scheduled communities ventured into business, be it on farm or off-farm activity either within the family enterprise or outside. While this has certainly provided greater access to SCs in higher education, entry into professional and technical education for them has remained relatively inaccessible, though much better than elsewhere in the county barring Assam and Rajasthan and UP. Coefficient of equality for technical education in Gujarat was 0.76, a shade better than that in 1991. Higher participation of SCs in technical education in Rajasthan and UP, especially as these states are far behind the equality mark, presents an interesting picture that needs further examination. One of the probable reasons may be high repetition rate for SCs in technical courses that may have increased their enrolment over an above the reserved seats in the quota system. States such as Bihar, Haryana, Punjab, Orissa, MP and West Bengal have performed poorly in providing greater access to higher education to their SC populations. As a matter of fact, the participation rate of SCs in technical education has registered a significant decline in 2001, in comparison to 1991 in Punjab, Haryana and Himachal Pradesh. Himachal Pradesh has, however, done well in the area of school education.

It is opportune to now examine the enrolment patterns and disparities therein at the district level.

Spatial patterns of access and disparities by social groups: district level analysis

The profile of GER has shown that there existing wide disparities both regionally as well as socially in the levels of enrolment in higher education. However the inter-state patterns at best capture macro-level variations only. The real-time variations in levels of enrolments and social disparities emerge from the study of district-level scenario. Table 11 and 12 shows that out of 585 (excluding 9 districts of Delhi) out of 593 districts as of 2001, in 88 districts the GER for all populations was less than 6.0. Another 270 districts were located in the region of 6.0 to 12.0%. This suggests that in about 358 districts the enrolment ratio was below 12.0 (or 374 if the national average is taken to two places after the decimal i.e. 12.4; this value was taken into consideration for identifying EBDs for higher education, which has been included in this volume). Only 30 districts were above the 24% mark, while for another 48 GER stood between 18-24%. Imphal West in Manipur topped the districts with over 47% of its population in the college-attending age were found to be enrolled in degree-level graduation courses. Imphal East the sister district in the state followed next. Among the districts located in the populous regions of India, Hyderabad (32.7%) obtained the highest rank followed by Kottayam (27.3%). Kamrup (Assam), Patna (Bihar), Ranchi (Jharkhand), Nagpur and Bid (both Maharashtra) followed with 23 others to attain over 24% GER in higher education. On the other hand, besides 8 districts located in the less densely populated parts of the North East, Jalor (Rajasthan), Dindori (MP), Dantewada (Chhattisgarh), Nabarangapur and Malkangiri (Orissa), and Banas Kantha (Gujarat) scored the lowest GER in the country with each below the 4.0% mark. It was rather intriguing to observe that nearly 20 districts of Gujarat had GER below the national average, along with 26 in Tamilnadu, 20 in Karnataka, 12 in Punjab, 29 in Rajasthan and 22 in Bihar placed in the same category. Some of these districts, as is obvious are located in the relatively developed states of India. One may also observe that while the low GER districts (i.e. below 6.0%) were generally located in districts which had low population density or suffered from certain characteristics of remoteness, as is the case with most of the districts in the North East (barring Manipur and Assam), others were invariably predominantly tribal districts. On the other hand, districts where the state capitals, or the major urban-industrial complexes were located, as also the traditional

educational centres such as Dehradun, Allahabad, Ernakulam, and Bokaro have shown two-times greater enrolment than the national average.

Table 11 :State-wise Distribution of Districts by GER (2001)

States/UTs	GER	Total Districts	2.99 & below	3.0- 5.99	6.0- 11.99	12.0- 17.99	18.0- 23.99	24.0 and above
India	12.4	585	10	78	270	149	48	30
Andhra Pradesh	14.2	23	0	0	9	12	1	1
Arunachal Pradesh	7.0	13	4	6	1	2	0	0
Assam	15.3	23	0	0	10	6	4	3
Bihar	12.0	37	0	2	20	12	2	1
Chhattisgarh	8.9	16	0	3	10	3	0	0
Goa	15.0	2	0	0	0	2	0	0
Gujarat	8.9	25	0	8	12	5	0	0
Haryana	12.8	19	0	0	7	10	2	0
Himachal Pradesh	16.1	12	0	0	4	5	2	1
Jammu & Kashmir	12.6	14	0	2	8	3	0	1
Jharkhand	14.8	18	0	2	11	2	2	1
Karnataka	12.0	27	0	0	20	6	1	0
Kerala	17.6	14	0	0	4	3	4	3
Madhya Pradesh	8.9	45	0	16	23	5	1	0
Maharashtra	17.3	35	0	0	6	16	11	2
Manipur	33.4	9	0	0	0	0	3	6
Meghalaya	15.0	7	0	0	5	1	1	0
Mizoram	9.0	8	0	5	2	1	0	0
Nagaland	24.6	8	0	1	0	1	1	5
Orissa	13.7	30	0	2	16	9	3	0
Punjab	11.1	17	0	0	12	5	0	0
Rajasthan	8.2	32	1	11	18	2	0	0
Sikkim	6.2	4	2	1	1	0	0	0
Tamil nadu	9.5	30	0	4	22	3	1	0
Tripura	6.2	4	1	2	1	0	0	0
Uttar Pradesh	12.6	70	0	5	33	27	3	2
Uttaranchal	17.8	13	0	1	1	7	3	1
West Bengal	8.6	18	0	5	11	1	1	0
Union Territories								
Andaman & Nicobar Islands	7.4	2	1	0	1	0	0	0
Chandigarh	26.7	1	0	0	0	0	0	1
Dadr & Nagar Haveli	3.3	1	0	1	0	0	0	0
Daman & Diu	3.9	2	0	1	1	0	0	0
Delhi	18.2	1	0	0	0	0	1	0
Lakshadweep	2.7	1	1	0	0	0	0	0
Pondicherry	18.2	4	0	1	0	1	2	0

This profile sums up the nature of development dynamics in India, which unfortunately has found to difficult to break away the shackles of the colonial experiences. At the same time, districts that have been homes to some of the major metropolitan centres such as Delhi, Mumbai, Chennai and Kolkata have been submerged by low

enrolments in their rural hinterlands, which also present the tale of weak rural-urban linkages besides high concentration and inter-location disparities in developmental expenditures. This has resulted in huge influx of uneducated or non-college graduates to these centres that come in order to earn a living for themselves.

Table 12: Distribution of districts by GER categories for Social Groups, 2001

Total/ Rural/ Urban	Total/ Male/ Female	Levels of Enrolment in Higher education (GER)							Percentage distribution					
		Less than 3	3-6	6-12	12-18	18-24	More than 24	Total	Less than 3	3-6	6-12	12-18	18-24	More than 24	Total
		All Population													
Total	Total	10	78	270	149	48	30	585	1.7	13.3	46.2	25.5	8.2	5.1	100.0
	Male	4	32	222	172	102	53	585	0.7	5.5	37.9	29.4	17.4	9.1	100.0
	Female	64	178	223	69	33	18	585	10.9	30.4	38.1	11.8	5.6	3.1	100.0
Rural	Total	67	170	252	65	17	14	585	11.5	29.1	43.1	11.1	2.9	2.4	100.0
	Male	18	114	247	138	47	21	585	3.1	19.5	42.2	23.6	8.0	3.6	100.0
	Female	243	192	108	19	15	8	585	41.5	32.8	18.5	3.2	2.6	1.4	100.0
Urban	Total	12	6	41	137	163	226	585	2.1	1.0	7.0	23.4	27.9	38.6	100.0
	Male	13	1	37	117	140	277	585	2.2	0.2	6.3	20.0	23.9	47.4	100.0
	Female	12	15	69	163	181	145	585	2.1	2.6	11.8	27.9	30.9	24.8	100.0
		Non Scheduled Population													
Total	Total	16	47	238	186	64	34	585	2.7	8.0	40.7	31.8	10.9	5.8	100.0
	Male	14	22	174	182	120	73	585	2.4	3.8	29.7	31.1	20.5	12.5	100.0
	Female	35	143	248	95	40	24	585	6.0	24.4	42.4	16.2	6.8	4.1	100.0
Rural	Total	52	141	268	93	20	10	584	8.9	24.1	45.9	15.9	3.4	1.7	100.0
	Male	28	75	251	142	64	24	584	4.8	12.8	43.0	24.3	11.0	4.1	100.0
	Female	185	207	139	31	14	8	584	31.7	35.4	23.8	5.3	2.4	1.4	100.0
Urban	Total	16	7	45	93	176	248	585	2.7	1.2	7.7	15.9	30.1	42.4	100.0
	Male	18	6	37	86	136	302	585	3.1	1.0	6.3	14.7	23.2	51.6	100.0
	Female	13	12	60	142	175	183	585	2.2	2.1	10.3	24.3	29.9	31.3	100.0
		Scheduled Castes													
Total	Total	82	180	233	64	14	12	585	14.0	30.8	39.8	10.9	2.4	2.1	100.0
	Male	38	114	232	147	33	21	585	6.5	19.5	39.7	25.1	5.6	3.6	100.0
	Female	257	162	123	29	8	6	585	43.9	27.7	21.0	5.0	1.4	1.0	100.0
Rural	Total	158	202	176	33	9	7	585	27.0	34.5	30.1	5.6	1.5	1.2	100.0
	Male	82	150	234	84	20	15	585	14.0	25.6	40.0	14.4	3.4	2.6	100.0
	Female	384	124	53	15	4	5	585	65.6	21.2	9.1	2.6	0.7	0.9	100.0
Urban	Total	50	39	181	166	86	63	585	8.5	6.7	30.9	28.4	14.7	10.8	100.0
	Male	51	15	129	166	103	121	585	8.7	2.6	22.1	28.4	17.6	20.7	100.0
	Female	64	178	223	69	33	18	585	10.9	30.4	38.1	11.8	5.6	3.1	100.0
		Scheduled Tribes													
Total	Total	242	134	116	43	21	29	585	41.4	22.9	19.8	7.4	3.6	5.0	100.0
	Male	192	102	150	66	29	46	585	32.8	17.4	25.6	11.3	5.0	7.9	100.0
	Female	381	84	67	16	16	21	585	65.1	14.4	11.5	2.7	2.7	3.6	100.0
Rural	Total	308	133	90	23	10	21	585	52.6	22.7	15.4	3.9	1.7	3.6	100.0
	Male	242	122	129	44	16	32	585	41.4	20.9	22.1	7.5	2.7	5.5	100.0
	Female	454	58	40	6	11	16	585	77.6	9.9	6.8	1.0	1.9	2.7	100.0
Urban	Total	149	47	92	80	73	144	585	25.5	8.0	15.7	13.7	12.5	24.6	100.0
	Male	145	30	78	68	67	197	585	24.8	5.1	13.3	11.6	11.5	33.7	100.0
	Female	187	59	121	76	46	96	585	32.0	10.1	20.7	13.0	7.9	16.4	100.0

The magnitude of district-level disparities in access of social groups to higher education acquires enormous proportion if on took a look at table 12. In about 82 districts as against 16 for the non-scheduled populations the GER was found to be below 3%. In case of the female SC this number swells to over 250. There were 12 districts where the SCs could register GER of 24% or more as against 34 for the NSDs. There were only 90 out of 585 districts or say 12 percent of all where the SCs were better-off than the national average as against 284 districts for the NSDs. While a majority of such districts where SCs were better off than their counterparts in the rest of India are found to be located in the high tribal concentrated areas which have not been the traditional homes to the SCs and are there as migrants in such low numbers that raises their level of current enrolments in higher education. If one discounted for these districts the number would come down to a half. Similarly the 16 districts where NSDs had very low enrolments were located in the desert and mountainous tracts as also in the North East.

The story of spatial and social disparities becomes even starker for the Scheduled tribes. In as many as 242 districts STs are found to be having GER below 3%. This number takes a quantum jump for the ST females as also for ST females in rural areas.

Intra and inter-group disparities in access to higher education:

Since the process of economic and social development in general, and education in particular, varies widely across the states and districts of India it would be illuminating to observe as to whether there is any indication of association between the levels of GER for the SCs and their population distribution. At the outset it must be appreciated that the degree of association between the SCs or the low castes (or Dalits) and the high castes who comprise a significant proportion of the non-scheduled population besides the OBCs in the traditional structure of caste based social organisation have been found to be very high. In other words, the SCs and high caste Hindus are linked in a variety of ways with one another and therefore the two supplements each other in the pattern of population distribution. However, the percentage of the SCs can be observed to be very high in a number of districts of India.

It may be observed from table 13 that out of 284 districts where the percentage of SC population was higher than the national level 233 registered lower than 12% enrolment in higher education. Out of these in 180 their GER was below 6%. This pattern was more deeply entrenched in rural areas, i.e. districts with high concentration of SC population generally had lower levels of GER. It was only in the urban areas that this pattern underwent only a slight change.

Table 13: Distribution of districts by levels of GER for SCs by Percentage of SC population

GER for Scheduled Castes	Percentage of SC population to the total population						
	Less than 1	**1-5**	**5-15**	**15-30**	**30-50**	**More than 50**	**Total**
				Total			
Less than 3	27	3	18	27	7		82
3-6	7	7	50	106	9	1	180
6-12	9	29	59	131	5		233
12-18	4	10	34	16			64
18-24	2	2	8	2			14
More than 24	5	1	4	2			12
				Rural Total			
Less than 3	39	8	39	63	9		158
3-6	4	10	56	121	10	1	202

6-12	4	27	55	88	2		176
12-18	2	3	17	11			33
18-24		3	5	1			9
More than 24	5	1	1				7
Urban Total							
Less than 3	44	3	3				50
3-6	2	2	8	22	5		39
6-12	4	11	49	107	10		181
12-18	2	22	54	83	4	1	166
18-24		7	33	44	2		86
More than 24	2	7	26	28			63
Total Districts	54	52	173	284	21	1	585

The degree of association between the percentage of ST population in the district and GER for the STs was even stronger. Table 14 below showed the distribution of districts cross tabulated by GER and share of ST in the total population of the district. There were 242 districts in which the GER for STs was found to be below 3%. While in 143 out of these their population share was below 1%, i.e. these districts are predominantly non-tribal. But out of 58 districts where tribes constituted 15-30 percent of the population in 19 the tribal GER was below 3%; in another 27 it was lower than 6%. Higher levels of tribal population is concentrated in the north east parts and the mid-Indian belt along the Vindhyas. In the north eastern because of the historical and social processes the levels of educational enrolments have been remarkably higher while in the mid-Indian tribal belt the story is just the opposite. Here again the picture indicates ample support to the fact that areas of high tribal concentration have fared much poorly than the rest of the county with the exception of some states in the north east parts such as Manipur, Nagaland and to some extent Meghalaya.

Table 14: Distribution of Districts by levels of GER for STs by Percentage of ST Population

GER for STs	Percentage of ST population to the total population							Total
	Less than 1	1-5	5-15	15-30	30-50	50-75	More than 75	
Total								
Less than 3	134	25	33	19	12	14	5	242
3-6	32	23	27	25	10	7	10	134
6-12	33	24	24	10	7	7	11	116
12-18	14	11	9	3	1	2	3	43
18-24	10	3			2	2	4	21
More than 24	8	10	2	1		1	7	29
Rural Total								
	Less than 1	1-5	5-15	15-30	30-50	50-75	More than 75	
Less than 3	159	39	42	28	15	15	10	308
3-6	31	24	28	19	12	7	12	133
6-12	25	18	19	7	4	9	8	90
12-18	11	4	4	3		1		23
18-24	1	4			1		4	10
More than 24	4	7	2	1		1	6	21
Urban Total								
	Less than 1	1-5	5-15	15-30	30-50	50-75	More than 75	
Less than 3	122	8	5	2	1	3	8	149
3-6	13	7	13	5	3	3	3	47
6-12	21	19	20	13	7	7	5	92
12-18	18	17	15	12	6	3	9	80

18-24	16	13	14	18	4	3	5	73
More than 24	41	32	28	8	11	14	10	144
Total Districts	231	96	95	58	32	33	40	585

The next question one may ask is whether there is any indication of an association between social disparities namely between the NSDs and SCs on the one hand, and NSDs and STs on the other. The disparity index here has been defined as ratio of NSD and SC/ST gross enrolment ratio. This measure has been preferred due to the fact that the ratio of enrolment between the two social groups will prove simple and informative for policy perspectives. If the ratio was 1 then there was a situation of equality between the two groups. Lower than 1.0 showed that the non-scheduled were poorer than the SCs or STs in term of enrolment to higher education courses. And the opposite was true if the value was above 1. In the classification below disparity index value .9to 1.2 is taken as representative of near equality as perfect equality between social groups was hard to obtain in all circumstances.   As many as 448 out of 585 districts showed that the index of disparity was way above 1.2 in favour of the non-scheduled populations in comparison to the SCs. In 67 districts the situation between the two social groups was near equality. In the remaining 70 districts the SCs did relatively better than the non-scheduled populations. But it would also be important to point out that out of these in 42 districts the SC comprised lower than 5 percent of the total population.

**Table 15: Distribution of Districts by Levels of Disparities in GER
between the Non Scheduled and SC Populations**

	Less than 1	1-5	5-15	15-30	30-50	More than 50	Total
Disparity Index				Total			
Less than 0.3	30		1				31
0.3-0.6	6	3		1			10
0.60-0.90	2	7	17	3			29
0.90-1.20	5	13	27	20	2		67
More than 1.20	11	29	128	260	19	1	448
				Rural			
Less than 0.3	41	3	4	1			49
0.3-0.6	3	3	4	2			12
0.60-0.90	3	8	26	10	1		48
0.90-1.20	1	15	30	37	2	1	86
More than 1.20	6	23	108	234	18		389
				Urban			
Less than 0.3	45	3	2				50
0.3-0.6	3			1			4
0.60-0.90	1	5	7	6			19
0.90-1.20		14	35	40	2	1	92
More than 1.20	5	30	129	237	19		420
Total Districts	54	52	173	284	21	1	585

The story for the STs is almost the same as is represented by table 15.

**Table 16: Distribution of Districts by Levels of Disparities in
GER between the Non Scheduled and ST Populations**

	Percentage of ST to Total Population							
	Less than 1	**1-5**	**5-15**	**15-30**	**30-50**	**50-75**	**More than 75**	**Total**
Disparity Index					Total			
Less than 0.3	113	2				2	6	123
0.3-0.6	11	6		2	4	3	7	33
0.60-0.90	8	10	4	2		2	9	35
0.90-1.20	12	6	4	4	1	1	3	31
More than 1.20	87	72	87	50	27	25	15	363
				Rural				
Less than 0.3	126	2			1	2	10	141
0.3-0.6	3	9	1	3	3	2	6	27
0.60-0.90	11	7	7	2		1	7	35
0.90-1.20	17	7	5	4	1	3	4	41
More than 1.20	73	71	82	49	27	25	13	340
				Urban				
Less than 0.3	118	3	1	1		5	12	140
0.3-0.6	13	10	3	4	6	4	7	47
0.60-0.90	18	12	15	8	2	7	11	73
0.90-1.20	19	21	16	8	6	6	7	83
More than 1.20	63	50	60	37	18	11	3	242
	231	96	95	58	32	33	40	585

Conclusions:

It is well noted from the above exercise that the magnitude of spatial and social variations and disparities therein are wide and a matter of concern and immediate attention of the policy makers in India. It is not that one did not know that enrolment levels varied regionally and spatially and that within the spatial sets they also varied across socio-religious groups, but the magnitude of variations and disparities had never been empirically examined earlier than this exercise. The relevance of this study is situated in the context of empirically verifiable and responsive policy intervention, which has been eluding the policy-makers of India, especially in areas of social planning.

It has already been noted that among the social and religious groups Muslims fared poorly among all others and were only a shade better than the scheduled castes and scheduled tribes in the country. There is enough indication to suggest that in spite of regional or locational backwardness that is implicit in this exercise the non-scheduled populations and mostly the high caste Hindus have done very well when it came to enrolments in higher education. The pattern of their enrolment varies and are diversified and that they have had near-monopoly in professional and technical education. Reservation policy for the SCs and STs has certainly altered the situation in the last two decades, although much needs to be done in order to make higher education truly inclusive.

Chapter 7

Determinants of Post-Higher Secondary Enrolment in India

Amaresh Dubey

The objective of this study is to prepare a detailed profile of enrolment of students in the post-higher secondary levels and identify the factors that affect the likelihood of the enrolment. Using the National Sample Survey Organization's $50^{th,}$ 55th and 61st round Employment and Unemployment survey data, we find out what is the status of post-higher secondary enrolment in India and how does it vary across different states, social castes, religious groups and economic classes. Further, we analyse to what extent the identified factors affect the likelihood of enrolment.

The role of education in pulling the households out of poverty in developing countries is very forcefully articulated. It is also suggested that poverty also constraints schooling investments (Glewwe and Jacoby, 2004). However, the emphasis in these discourses is typically providing access to basic education that, it is argued, improves labor productivity, lowers income inequality and promotes growth and development. Consequently, virtually all governments allocate a considerable share of their budgets to public expenditure on elementary education, more so in developing countries.

A similar pattern is observed in India also. Through various government-sponsored schemes, there have been attempts to universalize the school enrolment at the primary levels in India. As a consequence, we observe a secular increase in the literacy levels and access to primary schooling has improved considerably in recent times.

However, many, if not most, primary school students drop out before they are able to complete their schooling. The underprivileged in India, such as females, those belonging to lower social castes and lower economic classes tend to be less likely to be enrolled in school, and this tendency increases as schooling levels increase. By how much this likelihood differs across different demographic segments, therefore, is an important area for any study on school enrolment.

Unlike enrolment and access to basic schooling, post-higher secondary enrolment has not got the attention it deserves despite its favourable impacts on enhancing individual's ability to adapt and change and to engage in different types of work (Nelson and Phelps, 1966). Education outcomes are powerfully linked to individual as well community factors. Individual factors like aptitude, motivation, gender, household income, birth order and, very importantly, parents' and especially mothers' education are some of the factors that could affect enrolment in upper levels. Along with these, a range of community factors that impact all levels of education are the availability of roads, public transport, water, and electricity reaching all children with accessible schools (World Bank, 2002).

There are not many studies that have been able to systematically document the extent of this impact for recent years in upper level schooling in India. This paper investigates the patterns of enrolment and transition in upper levels in India across different social groups, economic classes, gender, and location.

As mentioned above, the objective of this study is to prepare a detailed profile of enrolment of students in the post-higher secondary levels and identify the factors that affect the likelihood of the enrolment. Specifically, the paper will examine the following inter-related issues:

a. What is the status of post-higher secondary enrolment in India and among the Indian States?

b. How does it vary across different social castes, religious groups and economic classes?

c. What are factors that affect likelihood of enrolment?

This will help in informed intervention in two important ways:

i. In the short run, it will help target policies directly towards providing right incentives to increase the enrolment within the exiting infrastructure and framework.

ii. In the long run, it will help the policymakers devise strategies to ensure that in the future we have adequate infrastructure as well as incentives to meet future demand for post-higher secondary education.

The rest of the paper is organised in the following way. Part 2 discusses the data and methodology used. We consider current attendance in graduate and post graduate courses as well as diploma or certificate courses below graduate level and also post graduate diploma/ certificate courses. The enrolment rates are calculated for persons who have completed at least higher secondary level. There are two important measures of enrolment, the gross enrolment rate (GER) and the net enrolment rate (NER). In this study, we have reported the GER and the NER for both the age groups 18 – 22 years (both inclusive) and 18 – 23 years (both inclusive). The discussion in the text, however, is confined to the GER of 18 – 22 years only. This is done in order to avoid repetition since the patterns of variation of GER and of NER are similar. The GER for the age group 18 – 23 years and the NER for both the age groups are reported in the statistical annexe.

In part 3 we discuss the status of enrolment in post-higher secondary levels at the aggregate level, i.e. at the all India level. We have discussed the status of enrolment in post-higher secondary education in India and its variation across sector, gender, economic classes, social groups and major religious groups. There are large disparities in the enrolment rate between the urban and rural sectors, between males and females and between the poor and the non-poor. Among the social groups, STs and SCs have lower enrolment rates than the forward castes. However, it seems that this is mainly because of higher poverty incidence among STs and SCs. Religion too plays a role in determining the educational status of a person. Christians have enrolment rates that are much higher than other religious groups and also exhibit the lowest gender disparity in enrolment in post-higher secondary education.

In part 4 we discuss the status of enrolment at the disaggregated level, i.e. at the state level. There are wide variations in post-higher secondary enrolment across states. The disparities among states in enrolment are more pronounced in the rural sector than in the urban sector. All the states have increased their enrolment rates over the years. However, the rate of increase is different across states, sector and gender. Varying degree of gender disparity is also observed in all states. Kerala stands out among all the states. It reports substantial enrolment rates even among the poor in the rural areas. Gender disparity also is much less in Kerala.

Part 5 discusses the determinants of post-higher secondary enrolment. We have identified certain factors as the determinants and examined to what extent they affect the likelihood of a person being enrolled in higher educational institutions. The most important factor appears to be the economic status of households. The educational level of the head of household also affects the enrolment of the household members. First generation learners seem to be at a disadvantage. This in turn will tend to perpetuate the lower educational status of the household since lower education generally leads to lower earnings and lower economic status again leads to lower educational status. Gender discrimination in enrolment is still prevalent due to the traditional attitudes towards gender roles and responsibilities. Therefore, females have lower enrolment rates than males irrespective of socio-economic classes.

Part 6 summarizes and concludes the paper. An important policy implication that emerges from this analysis is that 'protective discrimination' would be much more effective in upliftment of the backward social groups in general, and in increasing the enrolment in higher education in particular, if it is targeted at the poor sections of the society. Moreover, the poor people belonging to the so called 'forward castes' also need attention and help.

Data and Methodology

The objective of this study is to prepare a detailed profile of enrolment of students in the post-higher secondary levels and identify the factors that affect the likelihood of the enrolment. For carrying out a study of this nature, a consistent database is essential. In this section we discuss the data used as well as the concepts and methodology followed in measuring enrolment.

The rest of this section is organized in the following fashion. The next section outlines the details of the data used in this study and also highlights the caution needed in using these data sets. Section 2.3 delves into the methodological issues and section 2.4 provides an introduction to statistical and econometric techniques that have been used in this study.

The Data Used

In this study we use the data collected by the National Sample Survey Organisation (NSSO). The data that we use are for the most recent large sample surveys of three quinquennial rounds on Employment and Unemployment (Schedule 10). These are the 50th, 55th and 61st rounds. The three rounds correspond to the agricultural years (July to June) of 1993-94, 1999-00 and 2004-05 respectively.

The survey during all three rounds covers almost the entire territory of India except some inaccessible areas that are less than 0.01 percent of the Indian territory and even lower proportion of population. The sampling is stratified. Therefore, weights are an integral part of the datasets.

The analysis is carried out at the aggregate level as well as at the disaggregated (state) level. Separate analysis is carried out for the rural and urban sectors. In this study, we have used the raw data, rather than the published tables brought out by the NSSO. The availability of raw data has allowed us to identify gender, religion and social groups. This also allowed us to calculate the exact (as reported in the data) enrolment rates, as well as other characteristics, at each level of aggregation.

The reliability of estimates depends crucially on the sample size. The sample size or number of households surveyed across states and sectors in the three rounds of survey that are used in this study is reported in Tables 5.1. For administrative purposes, there are 35 states and Union Territories in India. We are treating all states

and Union Territories as states. Three states of Chhattishgarh, Jharkhand and Uttaranchal (renamed as Uttarakhand) were created in 2000. We could identify the districts of Madhya Pradesh, Bihar and Uttar Pradesh respectively that fall under the three new states. Therefore the estimates for these six states are as per the political boundaries in 2001 for all the three rounds of survey that we present in this study.

While at the aggregate level the sample size is fairly large, it is not so for all the states. We have used sample survey data collected by the NSSO. The sampling design of the NSSO is called PPS (probability proportional to size). This means that the households are selected based on population size in states. The population in the states ranges from less than a million in smaller states like Mizoram and union territories like Lakshadweep to over 130 million in bigger states like Uttar Pradesh.

The population size of the states has a bearing on the number of households selected for survey by the NSSO. For example, in Uttar Pradesh the number of households selected for survey is over 10,000 whereas in Lakshadweep and smaller states, it is just about 250. Clearly, the smaller sample size is a constraint in getting reliable estimates of any characteristics. The second constraint is constant reorganization of states and union territories. Thirdly, the distribution of ST and SC population as well as the distribution of various religious groups is not uniform over the states. Yet another problem related to working with NSS data at the disaggregated level is inability of NSSO to collect data from troubled states like Jammu and Kashmir. The security concerns prevent collection of desired information from the selected households. For example, one rural and one urban region in the Jhelum Valley in Jammu and Kashmir, were not surveyed during 1993-94.

In order to carry out analysis at the state level, therefore, one has to take into account these factors before getting down to looking at the enrolment rate across various categories. Out of 35 states there are 17 states which have reasonably large sample size. These are Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Kerela, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. We report results for these states individually. We have grouped three hilly states of the Himalayan region together. These are, Himachal Pradesh, Jammu & Kashmir and Uttarakhand. North Eastern states are clubbed together. These are Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. In other words, North eastern states include Sikkim and exclude Assam for the purpose of this analysis. All other small states and Union Territories form the last group of states.

The problem of sample size at the state level is especially felt while comparing the GER across social groups in different states since certain social groups are concentrated in some states and are hardly found in other states. The number of households surveyed by social group and state is reported in Table 2 for the year 2004-05. The sample size distribution in the other two rounds is very similar to the 61st round distribution. For the sake of completeness we have reported the GERs for all the three social groups in all the states. However, the sample size has to be kept in mind for meaningful comparison and the results are to be interpreted with caution.

As mentioned above, each round of survey covers about 1,20,000 households and about 6,00,000 persons. For the purpose of measuring the enrolment rate in post-higher secondary levels, we have considered the age group of 18 – 22 years. The rates are also calculated for the age group of 18 – 23 years. Therefore, in Table 3 and Table 1 we report the number of persons in these two age groups respectively who are surveyed in the three rounds that we use in the study.

Table 1: Distribution of Households Surveyed by Sector and State (Sample Size)

State/Sector/Year	1993-94		1999-00		2004-05	
	Rural	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**
Andhra Pradesh	4,906	3,645	5,180	3,816	5,550	2,878
Arunachal Pradesh	1,063	240	813	228	1,502	540
Assam	3,197	880	3,462	852	3,349	900
Bihar	5,463	1,195	5,387	1,344	4,354	1,400
Chhattisgarh	1,486	636	1,620	671	1,999	799
Goa	145	213	192	284	160	240
Gujarat	2,223	2,372	2,478	2,766	2,318	1,956
Haryana	1,040	697	1,133	760	1,679	1,038
Himachal Pradesh	1,874	400	1,637	955	2,145	400
Jammu & Kashmir	819	526	1,471	1,006	1,887	885
Jharkhand	1,512	959	1,929	936	2,378	1,039
Kerela	2,557	1,830	2,603	2,016	3,298	1,950
Madhya Pradesh	3,822	2,596	3,519	2,478	3,838	2,076
Maharashtra	4,434	5,525	4,122	5,235	5,023	5,008
Manipur	1,000	700	738	665	2,177	1,000
Meghalaya	1,116	476	935	384	1,159	437
Mizoram	470	960	429	859	800	1,113
Nagaland	460	240	480	264	960	320
Orissa	3,336	1,037	3,501	1,052	3,835	1,187
Punjab	2,045	1,946	2,155	1,883	2,433	1,856
Rajasthan	3,095	1,801	3,237	1,987	3,543	1,623
Sikkim	480	160	1,056	288	920	200
Tamil Nadu	3,899	4,044	4,175	4,210	4,160	4,138
Tripura	1,530	560	1,030	569	1,760	560
Uttarakhand	398	200	506	189	1,464	750
Uttar Pradesh	8,610	4,247	8,929	4,450	7,872	3,340
West Bengal	4,480	3,337	4,551	3,436	4,988	2,889
Andaman & Nicobar Islands	500	399	274	191	269	354
Chandigarh	80	150	179	761	80	300
Dadra & Nagar Haveli	240	78	192	96	160	80
Daman & Diu	80	80	180	192	80	80
Delhi	61	986	189	1,100	57	1,119
Pondicherry	70	320	288	384	160	560
All India	69,176	46,143	71,417	49,161	79,306	45,374

Source: *Special tabulation by the authors using unit record data on Employment and Unemployment collected by the NSSO during 50th, 55th and 61st rounds of survey.*

Table 2: Distribution of Households Surveyed by Social Group and State (Sample Size) in 2004-05

State	ST	SC	Others	Total
Andhra Pradesh	510	1,309	6,609	8,428
Assam	785	445	3,009	4,239
Bihar	49	1,123	4,570	5,742
Chhattisgarh	750	377	1,670	2,797
Gujarat	588	411	3,275	4,274
Haryana	8	602	2,107	2,717
Jharkhand	771	457	2,187	3,415
Karnataka	286	815	4,008	5,109
Kerela	66	508	4,674	5,248
Madhya Pradesh	956	1,004	3,954	5,914
Maharashtra	743	1,543	7,745	10,031
Orissa	1,025	943	3,053	5,021
Punjab	20	1,281	2,988	4,289
Rajasthan	624	1,000	3,542	5,166
Tamil Nadu	39	1,573	6,686	8,298
Uttar Pradesh	72	2,362	8,764	11,198
West Bengal	415	1,857	5,598	7,870
HP, J&K & Uttarakhand	248	1,433	5,850	7,531
North Eastern States	7,866	735	4,809	13,410
Other States & UTs	382	506	3,009	3,897
All India	16,203	20,284	88,107	124,594

Source: *Special tabulation by the authors using unit record data on Employment and Unemployment collected by the NSSO during 61st round of survey.*

Table 3: Distribution of Persons aged 18 – 22 years Surveyed (Sample Size) by Sector and State

State	1993-94		1999-00		2004-05	
	Rural	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**
Andhra Pradesh	2,237	1,793	2,254	1,795	2,314	1,269
Assam	1,686	451	1,956	323	1,613	341
Bihar	2,760	625	2,553	717	2,005	675
Chhattisgarh	796	318	802	379	981	423
Gujarat	1,238	1,181	1,262	1,350	1,225	926
Haryana	628	325	737	422	1,042	512
Jharkhand	791	484	936	483	1,234	561
Karnataka	1,572	1,295	1,504	1,270	1,438	1,067
Kerela	1,179	889	1,239	892	1,284	754
Madhya Pradesh	2,111	1,392	1,869	1,366	2,084	1,103
Maharashtra	2,187	2,751	1,855	2,662	2,454	2,389
Orissa	1,712	503	1,585	497	1,920	550
Punjab	1,239	957	1,172	934	1,383	932
Rajasthan	1,633	843	1,794	1,155	1,992	965
Tamil Nadu	1,680	1,793	1,718	1,688	1,462	1,398
Uttar Pradesh	4,853	2,295	5,061	2,679	4,374	1,899
West Bengal	2,320	1,377	2,302	1,447	2,546	1,241
HP, J&K & Uttarakhand	1,712	547	1,881	971	2,977	995
North Eastern States	3,165	1,501	2,771	1,540	4,767	2,007
Other States & UTs	695	1,166	827	1,642	485	1,231
All India	36,194	22,486	36,078	24,212	39,580	21,238

Source: *As in Table 1*

Table 1: Distribution of Persons aged 18 – 23 years Surveyed (Sample Size) by Sector and State

State	1993-94		1999-00		2004-05	
	Rural	**Urban**	**Rural**	**Rural**	**Urban**	**Rural**
Andhra Pradesh	2,511	2,056	2,525	2,068	2,634	1,454
Assam	1,882	494	2,191	373	1,778	375
Bihar	3,028	672	2,808	782	2,186	736
Chhattisgarh	880	380	901	429	1,127	485
Gujarat	1,396	1,360	1,441	1,535	1,409	1,088
Haryana	710	370	814	470	1,169	586
Jharkhand	855	544	1,028	520	1,350	611
Karnataka	1,744	1,473	1,680	1,444	1,625	1,238
Kerela	1,381	1,067	1,426	1,052	1,525	879
Madhya Pradesh	2,365	1,556	2,118	1,530	2,352	1,244
Maharashtra	2,459	3,177	2,117	3,030	2,774	2,754
Orissa	1,942	578	1,774	570	2,166	644
Punjab	1,407	1,112	1,343	1,086	1,593	1,074
Rajasthan	1,830	958	2,024	1,296	2,219	1,064
Tamil Nadu	1,910	2,106	1,983	2,003	1,713	1,649
Uttar Pradesh	5,435	2,538	5,661	2,981	4,873	2,112
West Bengal	2,636	1,560	2,597	1,626	2,844	1,430
HP, J&K & Uttarakhand	1,948	615	2,107	1,123	3,364	1,139
North Eastern States	3,563	1,701	3,119	1,761	5,387	2,244
Other States & UTs	795	1,361	938	1,915	569	1,431
All India	40,677	25,678	40,595	27,594	44,657	24,237

Source: *As in Table 1*

5.2.3 Concepts and Methodological Issues

The NSSO collects information on current attendance in educational institutions for persons of age below 30 years. It is first ascertained if the person is currently attending any educational institutions (government or private) or not. Persons who are registered for any regular correspondence courses or distance education courses for a stipulated period at the end of which, are allowed to appear in the examination for the course, are considered as 'currently attending'. Persons who are awaiting results are considered as 'currently attending' and the appropriate code for the level for which they have appeared in the examinations is recorded. For persons who are not currently attending any educational institutions, reason for not attending is ascertained. However, the information on reasons for not attending is not available in the 50th round.

For those who are found 'currently attending', the course of study pursued by them is further ascertained and codes are assigned depending on the course of study pursued by them. For persons attending more than one course, the one which is of full time will be considered for recording current attendance, in case only one of the courses is full time. In case more than one of the courses are full time, the one, which is of higher level will be considered for current attendance. If the full time courses are of same level, the one with longer duration will be considered. If the person is pursuing only part time courses, the course to be considered for current attendance is determined in the similar way as is done for full time course.

The code structure for status of current attendance in the 61st round is as follows:

Status of current attendance	Code	Status of current attendance	Code
currently not attending			
never attended:		ever attended but currently not attending:	
school too far……………………………	01	school too far………………………	11
To supplement hh. income.... …………	02	to supplement hh. income…………..	12
education not considered necessary…..	03	education not considered necessary...	13
To attend domestic chores……………..	04	to attend domestic chores…………..	14
others ………............. ....………	05	others….……………………………..	15
currently attending			
EGS/NFEC/AEC ………………………	21	diploma or certificate (below graduate level) in:	
TLC............. ......………………….…..	22	agriculture………………………	31
pre-primary (nursery/Kinder garten, etc.)..	23	engineering/technology …………	32
primary (class I to IV/V)......................…	24	medicine ………………………..	33
middle...….	25	crafts ……………………………	34
secondary and higher secondary………	26	other subjects…………………...	35
graduate and above in:		diploma or certificate (graduate and above level) in:	
agriculture………………………	27	agriculture …………………….	36
engineering/technology ………..	28	engineering/technology ……….	37
medicine ………………………..	29	medicine ………………………	38
other subjects ……………………	30	crafts.. …………………………	39
		other subjects………………….	40

A similar structure is followed in the 50th and 55th rounds with the exception that the reasons for not attending are not coded in the 50th round. And in the 55th round, reasons are classified into (a) to support household income and (b) others only.

For determining the enrolment in post-higher secondary levels, we have taken into consideration codes 27 to 30 and codes 36 to 40 in the 61st round (and corresponding codes in the other two rounds). That is, we consider current attendance in graduate and post graduate courses as well as in diploma or certificate courses which are of graduate or post graduate level.

There are two important measures of enrolment, the gross enrolment rate and the net enrolment rate. The ***Gross Enrolment Rate (GER)*** refers to the ratio of population (not taking into consideration the age factor) currently enrolled in educational institutions to the population of the relevant age group. ***Net Enrolment Ratio (NER),*** on the other hand, refers to the ratio of population of the expected age group at specified level of schooling to the population of the same age group. These ratios are expressed as percentages. Thus, the GER can be above 100 percent in cases where the enrolled population is more than the age group considered since in the numerator the enrolled persons from outside the age group are also counted.

In this study, we have reported the GER and the NER for both the age groups 18 – 22 years (both inclusive) and 18 – 23 years (both inclusive). The enrolment rates for the age group 18 – 22 years are higher than those for the age group 18 – 23 years for the obvious reason of smaller denominator in case of the former. The discussion in the text, however, is confined to the GER of 18 – 22 years only. This is done in order to avoid repetition since the patterns of variation of GER and of NER are similar. The GER for the age group 18 – 23 years and the NER for both the age groups are reported in the statistical annexe.

5.2.4 Econometric Exercise

The available evidence suggests that a youth is enrolled in post-higher secondary education as a result of household specific factors like dependency burden in the household, household assets, education of the parents, location of the household and so on.

Several researchers (see for example Gaiha, 1988; Dubey et al, 2001; de Haan and Dubey, 2003; Datta-Gupta and Dubey, 2003; Dubey and Pala, 2004) in recent times have used these factors to determine the contribution of each factor to the probability of household poverty. Kingdon and Knight (2004) discuss race and the incidence of unemployment in South Africa. They estimated a probit model of unemployment which shows an important role for race, education, age, gender, home ownership, location and numerous other variables all of which have plausible explanations.

We follow these authors to determine the contribution of each factor to education enrolment. For calculation of contribution of different factors to enrolment outcome, it is assumed that a person's enrolment is a random phenomenon affected by a set of factors that could explain the outcome. Based on these considerations, we define a binary variable y that takes values

Y =1 if a youth is enrolled in post-higher secondary enrolment

= 0 otherwise

This binary variable is then regressed on to a set of explanatory variables that includes various individual as well as household characteristics. Such a specification of an econometric model has been extensively used in the literature. Since the dependent variable is binary, we cannot use least squares method to estimate the coefficients. Instead, one can use maximum likelihood estimation technique to calculate coefficients. The issues involved in specification and estimation of these models are discussed at length in Johnston (1984), Kmenta (1984), Amemia (1985).

The probit model (the word probit is a contraction of 'probability unit') is one statistical model that is used for discrete or binary models. In this study we have used probit model that allows us to calculate marginal contributions of different household characteristics on the enrolment status of the youth. A probit model is defined as

$$\Pr(y_j \neq 0 \mid x_j) = \Phi(x_j b)$$

where Φ is the standard cumulative normal distribution, and $x_j b$ is called the probit score or index.

The log-likelihood function for probit which is maximized is

$$\ln L = \sum_{j \in S} w_j \ \ln \Phi(x_j b) + \sum_{j \notin S} w_j \ \ln \{1 - \Phi(x_j b)\}$$

where w_j denotes the optional weights.

For purpose of estimation, we have used dprobit option from STATA.[1] The dprobit option fits maximum-likelihood probit models and rather than reporting coefficients b_i, where b_i is the *i*th element of b, it reports the change in the probability for an infinitesimal change in each independent, continuous variable and reports the discrete change in the probability for dummy variables. That is, it reports

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[1]   STATA is a statistical and econometric analysis package that is specially suited for large scale data analysis.

$$b_i^* = \left.\frac{\partial \Phi(xb)}{\partial x_i}\right|_{x=\bar{x}} = \phi(\bar{x}b)b_i \text{ for continuous variables and}$$

$b_i^* = \phi(\bar{x}_1 b) - \phi(\bar{x}_0 b)$ where $\bar{x}_0 = \bar{x}_1 = \bar{x}$ except that the *i*th elements of $\bar{x}_0$ and $\bar{x}_1$ are set to 0 and 1, respectively. dprobit also reports test statistics z_i based on the underlying coefficients b_i.

Status of Post-Higher Secondary Enrolment in India: Aggregate Level

Introduction

In this section we discuss the status of enrolment in post-higher secondary education at the aggregate level, i.e. the all India level. We examine how the enrolment ratios vary across gender, social castes, religious groups and economic classes. We also attempt to capture the trend in enrolment during the period 1993-94 to 2004-05 and find out the sectors or groups which have performed better in increasing the enrolment rates.

The NSSO collects information on current attendance in educational institutions. The current attendance particulars of the individuals are collected for persons aged below 30 years. It is first ascertained if the person is currently attending any educational institutions (government or private) or not. The persons who are registered for any regular correspondence courses or distance education courses for a stipulated period at the end of which are allowed to appear in the examination for the course, are considered as "currently attending educational institutions". Persons awaiting results are also considered as "currently attending" the level for which they have appeared in the examinations. Persons attending diploma or certificate courses which are of graduate or post graduate level are also considered as enrolled.

On the basis of this information we have reported the gross and net enrolment rates in post - higher secondary education for the years 1993-94, 1999-00 and 2004-05. We have taken the age group of 18 – 22 years as the relevant age group for post-higher secondary education. Gross Enrolment Ratio (GER) refers to the ratio of population (not taking into consideration the age factor) currently enrolled in educational institutions to the population of the relevant age group. Net Enrolment Ratio (NER), on the other hand, refers to the ratio of population of the expected age group at specified level of schooling to the population of the same age group. These ratios are expressed as percentages. We confine the discussion in this section to the GER only. This is to avoid repetitiveness since the pattern of variation of NER across different groups and its trend over the years are the same as the pattern and trend of GER. The NER figures are reported in the Statistical Annexe.

The rest of the section is organised as follows. The next section reports the status of enrolment in post-higher secondary education by gender and place of residence in the three time points under consideration. In section 3.3 we discuss the enrolment rate by means of livelihood. In section 3.4 we look at the enrolment rate by economic classes. Section 3.5 contains the analysis by social groups of Scheduled Tribes, Scheduled Castes and 'Others'. In section 3.6 we discuss the status of enrolment by main religious groups and section 3.7 concludes the section.

Status of Enrolment in Post – Higher Secondary Education and Change over the Years

The following Table 5 gives the GER by place of residence and gender for the three time points under consideration. The average GER for the entire country in 2004-05 stood at 13.59 percent. It increased from around 10 percent in 1993-94. Between 1993-94 and 1999-00, the increase was a little more than one

percentage point. It accelerated marginally between 1999-00 and 2004-05 by increasing by around 2.21 percentage points.

Table 5: Gross Enrolment Rates in Post-higher Secondary Education in India by Sector and Gender

Year/Sector/ Sex	Rural			Urban			Total		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
1993-94	8.05	2.26	5.22	26.35	19.45	23.14	13.09	6.66	9.99
1999-00	8.39	4.07	6.26	26.39	22.84	24.73	13.57	9.06	11.38
2004-05	10.35	6.39	8.40	28.12	25.83	27.08	15.56	11.46	13.59

Note: Age group considered is 18 – 22 years.

Source: *Special tabulation by the authors using the data on Employment and Unemployment collected by the NSSO during the 50th round (1993-94), 55th round (1999-00) and 61st round (2004-05).*

The aggregate figures mask the great divide between the rural and urban sectors. The GER in the rural sector was only one-third of the GER in the urban sector in 2004-05. Between 1993-94 and 1999-00 the GER increased by a little more than one percentage point in both the sectors. The rate of increase accelerated marginally between 1999-00 and 2004-05 as we observe that the increase is over 2 percentage points in both the sectors.

That the GER is higher in the urban sector is only expected. Colleges and other higher educational institutions are concentrated in the urban areas. The economies of scale of such institutions usually can be reaped where there is a high density of population. Hence, the rural youth face great difficulty. Only those who can afford to migrate to the towns and cities can go for higher studies. This in turn tends to perpetuate the adverse situation in the rural areas as far as enrolment is concerned. The poverty incidence is generally higher in the rural sector, therefore, relatively less rural youth will have access to higher education. Lower level of education leads to lower level of income, which would again lead to lower enrolment for the next generation.

Females have lower enrolment rates than males in both sectors and throughout the period under consideration. However, there is evidence that the gap between male and female enrolment is narrowing down. Without considering the sectoral break-up, from 6.4 percentage points in 1993-94 the gender disparity in GER of the age group 18 – 22 years declined marginally to 5.26 percentage points in 2004-05. Urban females are however much better placed than their rural counterparts. In the urban sector, the GER of females is substantially higher and the gender gap is significantly narrower. On the other hand, the GER of rural females is almost half of the GER of rural males.

Thus urbanization is associated with higher enrolment and less gender disparity in higher education.

Enrolment in Post – Higher Secondary Education by Means of Livelihood

The households are classified into several categories or household types based on the means of livelihood or the sources of the households' income during the 365 days preceding the date of survey. The type of a household is the source that contributes 50 percent or more of the household's income from economic activities. For the rural areas, the households are classified into five categories, namely, self-employed in non-agriculture, agricultural labour, other labour, self-employed in agriculture and others. For the urban areas, there are four types, namely, self-employed, regular wage or salary earning, casual labour and others. The group 'others' has income from several sources, none of which contributes 50 percent or more to the total income. Households that earn mainly from non-economic activities also are classified as 'others'.

Table 6: Gross Enrolment Rates in Post-higher Secondary Education in India by Sector, Gender and Household Type

Household Type/ Year/ Sex	1993-94			1999-00			2004-05		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
					RURAL				
Self-emp in non-agriculture	8.63	2.00	5.35	7.36	4.30	5.83	9.89	7.00	8.46
Agricultural labour	3.14	0.65	1.83	2.50	0.69	1.58	3.80	1.88	2.84
Other labour	4.80	0.89	2.77	3.97	2.82	3.39	5.73	3.44	4.59
Self-emp in agriculture	7.89	2.33	5.27	9.02	3.33	6.31	11.89	6.26	9.19
Others/ Mixed income	23.37	9.00	16.71	25.65	16.10	20.86	27.58	20.98	24.17
Total	8.05	2.26	5.21	8.39	4.06	6.25	10.35	6.39	8.40
					URBAN				
Self-employed	16.77	13.91	15.42	17.79	18.14	17.95	19.47	21.86	20.60
Regular wage/salary	31.57	25.80	28.87	33.05	30.86	32.00	33.07	32.06	32.61
Casual labour	4.35	1.96	3.17	3.34	4.04	3.68	3.33	2.17	2.80
Others/ Mixed income	73.92	50.45	65.05	67.84	39.99	57.03	75.36	63.97	71.71
Total	26.35	19.45	23.13	26.40	22.85	24.75	28.05	25.82	27.04

Note: Age group considered is 18 – 22 years.

Source: *As in Table 1.*

In Table 6 above we report the GER in post-higher secondary education by sector, gender and household type for the years 1993-94, 1999-00 and 2004-05. In the rural sector, the youth who come from households that earn their livelihood from agricultural labour have the least GER of 1.83 percent in 1993-94 which increased to 2.84 percent in 2004-05. On the other hand, households with mixed income show high GER of 16.71 percent in 1993-94 which went up to 24.17 percent in 2004-05.

In the urban areas, again the highest GER is observed among households with mixed income. The GER in this category of households is 65 percent in 1993-94 and 71.71 percent in 2004-05. This is in sharp contrast to the GER among casual labour households which is less than 4 percent in all the three years under consideration. Also, the GER among casual labour households has declined during the period under consideration. Households with self-employment as main source of livelihood have a GER lower than the other types of households except casual labour households. Households that have their own firms or businesses are more likely to absorb their own members as workforce. Hence lower GER among self-employed households could be partly due to the fact that most of the youth join the family business and may not consider further education necessary.

There is a significant gender gap in enrolment especially in the rural areas. However, there are certain exceptions. In the urban areas among the self employed households, the GER of females was higher than that of males in 1999-00 and in 2004-05. It is apparent that while the males join the family business, the females are sent for higher education. The disparity between males and females is also considerably less among the households with main source of income from regular wage/ salary.

However, it can be said that traditional perception of women as the homemakers is still prevalent in Indian households. We notice that even among Mixed Income households, which can afford to send their children for higher education (judged from the high GER), the gender gap is still significant. It is to the tune of 11.39 percentage points in the urban sector and 6.6 percentage points in the rural sector in 2004-05.

The tabulation of enrolment rates by household type brings out clearly that economic factors such as accessibility and affordability play a major role in enrolment in higher education. Youth from households with

vulnerable sources of income generally cannot afford to go for higher education firstly because higher education is expensive and secondly, they have to join the workforce to supplement their household income.

Enrolment in Post – Higher Secondary Education by Economic Classes

The economic status of a household is a crucial factor in determining whether its members will have access to higher education or not. Therefore, in this section we discuss the status of enrolment in post-higher secondary education by economic classes. Firstly, we divide the population into two categories – the poor and non-poor – based on the poverty line as defined by the Planning Commission, Government of India. Secondly, we divide the population in each sector into five quintiles based on the per capita monthly expenditure.

Table 7 reports the GER in post-higher secondary education of the poor and non-poor in the rural and urban sectors by gender for the three years under consideration. In the rural areas, the GER among the poor is very low at less than 2 percent. Moreover, it has been declining over the period 1993-94 to 2004-05. The declining trend of GER among the poor is observed in the urban sector too from 6.69 percent in 1993-94 to 4.92 percent in 2004-05.

On the other hand, the GER among the non-poor is several times the GER of the poor. Further, its increasing trend widens the gap between the poor and the non-poor. Without considering the sectoral break-up, the disparity in enrolment between the two broad economic groups was 9.72 percentage points in 1993-94. This disparity went up to 13.37 percentage points in 2004-05.

**Table 7: Gross Enrolment Rates in Post-higher Secondary Education in India
by Sector, Gender and Economic Groups**

Year/Economic Group/Sex	Poor			Non-poor			Total		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
					RURAL				
1993-94	3.46	0.54	1.97	9.95	3.06	6.63	8.05	2.26	5.22
1999-00	2.54	0.50	1.46	10.31	5.49	8.00	8.39	4.07	6.26
2004-05	2.46	1.28	1.82	11.91	7.68	9.87	10.35	6.39	8.40
					URBAN				
1993-94	8.75	4.53	6.69	33.11	25.96	29.84	26.35	19.45	23.14
1999-00	7.72	4.70	6.24	32.40	29.52	31.08	26.39	22.84	24.73
2004-05	5.41	4.41	4.92	33.89	32.55	33.30	28.12	25.83	27.08
					Total				
1993-94	4.86	1.53	3.18	16.43	9.01	12.90	13.09	6.66	9.99
1999-00	4.01	1.57	2.75	16.69	11.98	14.45	4.07	9.06	11.38
2004-05	3.46	2.21	2.80	18.15	13.94	16.17	15.56	11.46	13.59

Note: Age group considered is 18 – 22 years.
Source: *As in Table 1*.

Females have lower GER than males whether they belong to poor or non-poor households. Thus post-higher secondary enrolment decision of households does not depend solely on the affordability of education. Traditional perception of gender roles and responsibilities also still play a crucial part. That is, higher education for females is not considered as important as for males. To the extent that gender disparity is narrowing down, we can say that this attitude seems to be changing.

Classifying the population into the poor and the non-poor gives us a fairly clear idea about the role of economic status in determining the enrolment rate. However, it is reasonable to postulate that the characteristics of the non-poor whose per capita expenditure is close to the poverty line will not be very different from those of the poor. Therefore, we have divided the population in the rural and urban sectors separately into five quintiles based on the per capita monthly expenditure. We report the GER by sector, gender and quintiles in Table 8.

Table 8: Gross Enrolment Rates in Post-higher Secondary Education in India
by Sector, Gender and Quintile Groups

Quintile/ Year/Sex	1993-94			1999-00			2004-05		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
					RURAL				
0-20	2.92	0.29	1.50	1.72	0.36	0.99	2.56	1.06	1.75
20-40	3.80	0.68	2.26	4.26	0.94	2.54	4.68	1.77	3.16
40-60	5.91	1.37	3.62	5.42	1.58	3.52	7.13	2.12	4.65
60-80	7.70	2.12	5.03	7.19	3.55	5.44	9.83	6.62	8.33
80-100	15.86	5.99	11.31	18.18	12.09	15.36	20.96	17.63	19.43
Total	8.05	2.26	5.21	8.39	4.07	6.26	10.35	6.39	8.40
					URBAN				
0-20	8.32	3.59	6.00	6.23	3.82	5.07	4.66	3.41	4.03
20-40	9.48	6.60	8.12	11.34	7.63	9.54	9.96	8.08	9.08
40-60	19.73	15.09	17.51	18.18	17.16	17.69	19.52	17.30	18.51
60-80	28.85	24.88	26.99	30.07	29.15	29.65	32.74	35.40	33.91
80-100	55.99	44.67	51.14	58.09	55.08	56.78	62.44	64.89	63.45
Total	26.35	19.45	23.13	26.39	22.84	24.73	28.12	25.83	27.08
					TOTAL				
0-20	3.59	0.65	2.03	2.12	0.46	1.25	2.39	1.31	1.80
20-40	4.90	1.11	3.03	4.99	1.65	3.31	6.32	1.88	4.10
40-60	7.18	2.37	4.83	6.57	2.80	4.73	7.61	4.50	6.11
60-80	11.82	6.38	9.21	11.83	8.12	10.06	13.40	10.17	11.87
80-100	30.35	20.52	25.93	32.92	28.46	30.90	37.04	36.38	36.75
Total	13.09	6.66	9.97	13.57	9.06	11.38	15.56	11.46	13.59

Note: Age group considered is 18 – 22 years.

Source: *As in Table 1.*

Table 8 clearly shows that the increase in GER over the period 1993-94 to 2004-05 is mainly on account of the substantial increase among the richest sections of the society. For instance, in the rural areas the double digit GER is observed only for the top 20 percent of the population. Besides, there is a substantial increase from 11.36 percent in 1993-94 to 22.20 percent in 2004-05 for the top quintile. The top quintile in the urban sector too increased its GER by over 12 percentage points during the same period from 51.16 percent to 63.45 percent. At the other end of the spectrum, for the bottom 20 percent of the population, which corresponds to the population living below the poverty line, the GER has instead deteriorated.

The GER increases systematically as the economic status improves. As we go from the bottom quintile to the next, the difference in GER increases. For example in 2004-05 in the rural sector, the disparity between the bottom quintile and the second was 1.41 percentage points; between the second and the third quintiles the disparity was 1.49 percentage points; between the third and the fourth it was 3.68 percentage points and the disparity jumped to 11 percentage points between the fourth and the fifth quintiles. The corresponding figures

for disparity in the urban sector were 5.05, 9.43, 15.4 and 29.54 percentage points respectively. The disparities among the various economic classes also widen with time.

Enrolment in Post – Higher Secondary Education by Social Groups

Historically, the Indian society evolved around certain identities such as social origin, ethnicity or religion. It is now argued that ethnicity has resulted in the exclusion of groups, perceived as 'others' or 'different', by dominant groups. There are several such groups that have been identified in the literature. Out of these, two are identified on the basis of their caste, the untouchables or *scheduled castes* (SCs) and *scheduled tribes* (STs)[2]. These two groups possess several similarities as well as differences in terms of their exclusion. The former is said to have borne the brunt of the systematic discrimination of the Hindu *Varna* System. The latter group is with a distinct culture, language and social organization. Their deprivation is of a different nature altogether.

The SCs are the larger group between the two, accounting for 16.2 percent of the Indian population as per the 2001 Census. Their exclusion is a direct consequence of the Hindu social order. The caste system as a form of social structure is based on the division of people into a distinct social group, or caste with unequal rights. This has been institutionalized so deeply that these groups suffer from multiple exclusions that have severe consequences on their deprivation, poverty and educational status.

The other social group that is excluded is Scheduled Tribes (STs), called *adivasis* or tribals. Their share in the population as per the 2001 Census is 8.2 percent. Their exclusion is a consequence of geographical isolation and neglect as these groups are located in hills and forest areas that have been traditionally considered remote. However, unlike SCs, there are hundreds of such groups scattered across the length and breadth of India with a diverse socio-cultural and economic organization.[3]

The systematic deprivation that SCs and STs have suffered, albeit for different reasons, was recognized and provisions were made in the Indian Constitution to facilitate assimilation of these groups by promoting their educational and economic interests through a policy of 'protective discrimination' since 1951. For implementing the policy of protective discrimination, several measures and programmes were introduced. Among them, reservation for SCs and STs in Government jobs and educational institutions occupies a major place and has generated a lot of debate and controversy. The Constitution provided reservation in government jobs and admission in professional educational institutions to STs (7.5 percent) and to SCs (15 percent). The quantum of assistance and the limits to reservation for SCs and STs are proportionate to their population shares. These population shares are based on the decennial Indian censuses. Further, scholarships are also given to ST and SC students if they enroll themselves in post secondary educational institutions. Clearly, one needs to know how much these provisions have affected the educational status of these groups since positive discrimination was initially intended just for a decade.

We divide the entire population in the rural and urban sectors into three mutually exclusive social groups, namely, STs, SCs and 'Others'. The last group comprises of all other castes that are referred to as forward castes. It is to be noted that there is another caste group, Other Backward Classes (OBCs) which has been defined and positive discrimination provided by the Government of India on the lines of STs and SCs since

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[2]   The SC/ST nomenclature has grown out of Government policy.

[3]   Although the term ST is used here to denote implicitly a single population group but in reality there are thousands of scheduled tribes spread over the length and breadth of the country defined in the Indian Constitution. Each one of these tribes is different from the other in their customs and socio-cultural characteristics.

1992[4]. However, information on the OBCs is not available in 1993-94, the 50th round of NSS survey. Therefore to maintain comparability, we have merged the OBC group with the 'Others' in the 55th and 61st rounds.

In Table 9 we report the GER in post-higher secondary education in India by sector and social groups divided into poor and non-poor for the years 1993-94, 1999-00 and 2004-05.

Table 9: Gross Enrolment Rates in Post-higher Secondary Education in India
by Sector, Social Groups and Economic Groups

Year/ Economic/ Social Group	Poor			Non-Poor			Total		
	ST	SC	OTH	ST	SC	OTH	ST	SC	OTH
				Rural					
1993-94	1.33	1.67	2.28	3.71	3.43	7.70	2.70	2.72	6.28
1999-00	1.24	1.50	1.50	8.67	4.92	8.77	5.69	3.79	7.14
2004-05	2.07	2.05	1.63	7.38	7.12	10.97	5.62	5.96	9.60
				Urban					
1993-94	4.46	2.32	7.87	20.05	17.73	31.51	14.06	10.99	25.26
1999-00	5.19	4.29	6.87	26.01	17.64	33.33	17.56	12.93	27.22
2004-05	4.27	4.58	5.07	36.86	22.39	34.96	27.45	16.64	29.15
				Total					
1993-94	1.61	1.80	3.98	5.44	5.96	14.91	3.83	4.27	12.04
1999-00	1.73	2.11	3.22	10.78	7.48	16.46	7.15	5.68	13.46
2004-05	2.29	2.80	2.92	10.89	10.28	18.14	8.09	8.40	15.68

Note: Age group considered is 18 – 22 years.
Source: *As in Table 1.*

In general, there is a hierarchy in enrolment in higher education with the STs at the bottom and 'Others' at the top. For instance, in 2004-05 the GER was 8.09 percent for STs, 8.40 percent for SCs and 15.68 percent for 'Others'. However, it is intriguing to note that in 1999-00, the GER of STs was higher than that of SCs.

The picture is different when we look at the rural and urban sectors separately. In the rural sector, there is not much difference between the GER of SCs and STs but the disparity between 'Others' and either of the two groups is substantial. In the urban sector, the GER of SCs was lower than that of STs in all the three time points considered. 'Others' had the highest GER throughout. All the three social groups had improved their GER although at different rates. The STs exhibited the highest rate of growth in GER. and by 2004-05, their GER was almost comparable with that of 'Others'.

It may be pointed out here that the STs are mainly rural based. Their share in the urban population is only 2.44 percent as per the 2001 census. Therefore, the high GER of the STs in the urban sector could be firstly due to the high GER in the towns of tribal dominated states like Mizoram, Meghalaya and Nagaland. Secondly, most of the STs in the urban sector are migrants from the rural areas. Among other reasons, people migrate in search of education and employment. As some studies have found out there is an initial cost to migration which only

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[4]   The *Report of the Backward Classes Commission*, Government of India, popularly known as the Mandal Commission Report, was published in early 1981. It recommended that OBCs be granted employment reservations in central government services and public sector undertakings. In 1990, Prime Minister, V. P. Singh announced a plan to implement the recommendations of the Report. The plan was challenged in the Supreme Court, which ruled in November 1992 in favour of 27 percent employment reservations at the national level for OBCs.

the relatively better off can bear. Therefore, the better off among the STs can migrate to the urban areas. Perhaps the Government policy of reservation helped them to some extent to get access to higher education and to be employed in the towns and cities.

When we look at the GER of the social groups divided into the poor and the non-poor, we do not find a clear hierarchy as far as enrolment in post-higher secondary education is concerned. Among the poor in the rural sector, 'Others' had a GER which was slightly higher than that of SCs and STs in 1993-94. The GER of the poor STs and SCs improved marginally while that of 'Others' declined during the period 1993-94 to 2004-05. Among the poor in the urban sector, the GER of SCs improved from 2.32 percent in 1993-94 to 4.58 percent in 2004-05. On the other hand, the GER of poor 'Others' declined from 7.87 percent to 5.07 percent and that of poor STs declined from 4.46 percent to 4.27 percent during the same period.

Among the non-poor in the rural sector, 'Others' had the highest GER of 10.97 percent in 2004-05 followed by SCs (7.12 percent) and STs (7.38 percent). In the urban sector, the SCs are the worst-off group with the lowest GER in all the three time points under consideration. Initially in 1993-94, the STs had a GER of 20.05 percent and 'Others' a GER of 31.51 percent. There is a tremendous improvement in the GER of STs which almost doubled to 36.86 percent in 2004-05, surpassing the GER of 34.96 percent of 'Others'.

As noted in the previous sections, gender gap in enrolment exists in both sectors and all economic classes. We report the GER by social group and gender in Table 10 to find out whether there is any difference among the three social groups with regard to gender discrimination in education.

We find that the GER of females is lower than that of males in all social groups. However, the gender disparity is the lowest among STs. In the rural sector where the aggregate female GER was about half of the male GER, the GER among ST females in 2004-05 was 4.65 percent which is relatively nearer to the male GER of 6.66 percent. On the other hand, female GER among SCs was 4.85 percent while the male GER was 7.01 percent. 'Others' too exhibited a significant gender gap of 4.79 percentage points.

Table 10: Gross Enrolment Rates in Post-higher Secondary Education in India
by Sector, Social Groups and Gender

Year/Social Group/ Sex	ST			SC			Others			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Rural												
1993-94	4.35	1.19	2.70	4.68	0.65	2.71	9.48	2.88	6.26	8.05	2.26	5.21
1999-00	6.39	5.04	5.69	5.58	1.92	3.79	9.59	4.61	7.14	8.39	4.07	6.26
2004-05	6.66	4.65	5.62	7.01	4.85	5.96	11.95	7.16	9.60	10.35	6.39	8.40
Urban												
1993-94	14.51	13.54	14.05	14.69	6.89	11.00	28.46	21.55	25.25	26.35	19.45	23.13
1999-00	18.78	16.29	17.56	13.45	12.30	12.93	29.16	25.01	27.22	26.39	22.84	24.73
2004-05	28.19	26.61	27.45	18.43	14.37	16.64	30.10	28.00	29.15	28.06	25.76	27.02
Total												
1993-94	5.44	2.32	3.83	6.59	1.79	4.25	15.41	8.36	12.02	13.09	6.66	9.97
1999-00	7.99	6.36	7.15	7.31	3.93	5.68	15.94	10.82	13.46	13.57	9.06	11.38
2004-05	9.31	6.92	8.09	9.80	6.86	8.40	17.87	13.31	15.68	15.55	11.45	13.57

Note: Age group considered is 18 – 22 years.
Source: *As in Table 1.*

In the urban sector, the female GER was almost at the same level as the male GER among STs in 2004-05, whereas the gender gap among the SCs is significant. We have noted in section 3.2 that urbanization is associated with less gender disparity. The discussion in this section points out that this is not true for all social groups.

To sum up, economic factors dominate the education enrolment decisions of households. Social groups that are traditionally considered to be economically and educationally backward are found not to be lagging behind in enrolment in higher education when we decompose the population into economic classes. Among the poor, initially there was a gap in enrolment among the three social groups. By 2004-05, this gap was eliminated. Among the non-poor, the STs had the lowest GER in the rural sector and SCs had the lowest GER in the urban sector with huge disparities between the SCs and 'Others' and between the STs and SCs. In other words, SCs are the most deprived group. SC females in particular, are least likely to be enrolled in post-higher secondary education.

At the aggregate level, however, the disparity between the GER of 'Others' and that of STs is significant and the disparity between 'Others' and SCs is even more so. This is due to the fact that poverty incidence is much higher among the backward groups of STs and SCs than among 'Others' (see Dubey and Pala, 2004). A policy implication that emerges from this analysis is that 'protective discrimination' would be much more effective in upliftment of the backward social groups if it is targeted at the poor sections of the society. Moreover, the poor people belonging to the so-called 'forward castes' also need attention and help.

Enrolment in Post – Higher Secondary Education by Religious Groups

In this section we discuss the status of enrolment in post-higher secondary education by major religious groups to find out whether religion has any role in determining the enrolment in higher education. We divide the entire population into four religious groups, namely, Hindus, Muslims, Christians and all other religions considered together. Hindus, Muslims and Christians constitute 97 percent of the total population of the country.

In Table 11 we report the GER by sector, gender and religious groups. Among the three major religious groups, we observe that the GER is highest among the Christians in both the rural and urban sectors and in all the three years under consideration. Muslims have the least GER. The gap between the GER of Christians and that of Hindus is substantial. It is worth noting that even in the rural sector, Christians have a double digit GER throughout whereas all other religious groups exhibited a single digit GER.

Christians are mainly concentrated in the states of Kerela in the south, Goa in the west and Meghalaya, Mizoram and Nagaland in the north-east. Kerela is known for its highest achievement among the Indian states in the spheres of human development in general and education in particular. Mizoram is second only to Kerela in literacy rate. Goa is currently the state with the highest per capita income in India. Therefore, it is no surprising that Christians would have the highest GER among the religious groups in India. Christianity has played a great role in promoting literacy and education among the people of the country in general and of the tribals in the North Eastern Region in particular (see Dubey and Pala, 2006 for details in this issue). Promotion of secular education by Christian missionaries has helped a great deal in this regard. Further, the gender gap in post-higher secondary enrolment among Christians is the lowest compared to all other religious groups.

On the other hand, Muslims have the lowest GER among all religious groups in India. Besides lower economic status in general, there might be two important reasons for this observation. Firstly, Muslim women are usually not encouraged or allowed to go for higher education. Secondly, *madrassas* teach mostly Islamic faith and do not provide secular education.

**Table 11: Gross Enrolment Rates in Post-higher Secondary Education in India
by Sector, Gender and Religious Groups**

Religion/ Year/Sex	1993-94			1999-00			2004-05		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
				Rural					
Hindus	8.38	2.16	5.33	8.74	4.03	6.43	10.68	6.36	8.56
Muslims	4.50	0.92	2.71	4.41	1.60	2.96	8.32	4.30	6.33
Christians	13.31	10.13	11.69	10.73	14.93	12.94	15.10	16.04	15.61
Others	6.09	3.36	4.76	11.11	6.41	8.97	7.03	8.52	7.76
Total	8.05	2.26	5.21	8.39	4.07	6.26	10.35	6.39	8.40
				Urban					
Hindus	28.94	21.13	25.31	29.62	24.55	27.24	31.32	28.54	30.06
Muslims	10.68	6.87	8.92	11.67	8.91	10.43	12.37	10.71	11.60
Christians	42.48	34.14	38.34	33.93	40.28	37.08	35.67	41.17	38.21
Others	30.49	27.32	28.93	27.34	36.90	31.63	35.45	41.40	37.85
Total	26.35	19.45	23.13	26.39	22.84	24.73	28.12	25.83	27.08
				Total					
Hindus	7.48	5.07	6.31	14.28	9.15	11.79	16.36	11.79	14.17
Muslims	4.21	2.47	3.36	7.35	4.11	5.76	9.88	6.59	8.29
Christians	11.65	9.04	10.33	18.98	23.27	21.19	21.92	22.77	22.36
Others	9.16	8.30	8.74	16.34	16.04	16.20	16.08	16.55	16.30
Total	7.26	4.98	6.15	13.57	9.06	11.38	15.56	11.46	13.59

Note: Age group considered is 18 – 22 years.

Source: *As in Table 1.*

The above discussion clearly points out that religion does play a role in fostering (or hampering) education in India.

Conclusion

In this section we have discussed the status of enrolment in post-higher secondary education in India and its variation across sector, gender, economic classes, social groups and major religious groups. There are large disparities in the enrolment rate between the urban and rural sectors, between males and females and between the poor and the non-poor. Among the social groups, STs and SCs have lower enrolment rates than the forward castes. However, it seems that this is mainly because of higher poverty incidence among STs and SCs. Religion too plays a role in determining the educational status of a person. Christians have enrolment rates that are much higher than other religious groups and also exhibit the lowest gender disparity in enrolment in post-higher secondary education.

Status of Post-Higher Secondary Enrolment in India: State Level

In the last section we noted that the post-higher secondary enrolment rate in India has increased during the period 1993-94 to 2004-05. However, there are large disparities across sector, gender, economic, social and religious groups. The analysis at the all India level masks the diversity that is there in India. Therefore, in this section we look at the variation of post-higher secondary enrolment across states. As in the case of all India level, the analysis is confined to the gross enrolment rate (GER) for the age group 18-22 years. Net Enrolment Rates are reported in the statistical annexe.

In this section we have carried a similar (but not identical) analysis for the states and union territories. (We are treating all states and Union Territories as states). For the analysis at the disaggregated level, we have kept in mind the limitations of the data. We have used sample survey data collected by the NSSO. The sampling design of the NSSO is called PPS (probability proportional to size). This means that the households are selected based on population size in states. The population in the states ranges from less than a million in smaller states like Mizoram and union territories like Lakshadweep to over 130 million in bigger states like Uttar Pradesh.

The population size of the states has a bearing on the number of households selected for survey by the NSSO. For example, in Uttar Pradesh the number of households selected for survey is over 10,000 whereas in Lakshadweep and smaller states, it is just about 250. Clearly, the smaller sample size is a constraint in getting reliable estimates of any characteristics. The second constraint is constant reorganization of states and union territories. Thirdly, the distribution of ST and SC population as well as the distribution of various religious groups is not uniform over the states. Yet another problem related to working with NSS data at the disaggregated level is inability of NSSO to collect data from troubled states like Jammu and Kashmir. The security concerns prevent collection of desired information from the selected households.

In order to carry out analysis at the state level, therefore, one has to take into account these factors before getting down to looking at the enrolment rate across various categories. Out of 35 states there are 17 states which have reasonably large sample size. These are Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Kerela, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. We report results for these states individually. We have grouped three hilly states of the Himalayan region together. These are, Himachal Pradesh, Jammu & Kashmir and Uttarakhand. North Eastern states are clubbed together. These are Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. In other words, North eastern states include Sikkim and exclude Assam for the purpose of this analysis. All other small states and Union Territories form the last group of states.[5]

The rest of this section is organized in the following fashion. Section 4.2 discusses the temporal variation of enrolment in post-higher secondary levels across states, sector and gender. In section 4.3 we discuss enrolment by major means of livelihood. In section 4.4 we discuss the variation of enrolment across states and economic classes. Section 4.5 discusses the disparities across social groups and section 4.6 concludes the section.

Gross Enrolment in Post – Higher Secondary Education: Temporal Variation across States, Sector and Gender

Tables 5.12, 5.13 and 5.14 give the GER in post-higher secondary educational institutions in 1993-94, 1999-00 and 2004-2005 respectively, divided into place of residence, states and gender. At the aggregate level, i.e. all India level we see that enrolment rates have increased; in 1993-94 it was 9.99 percent, in 1999-00 it was 11.38 percent and in 2004-05 it increased to 13.59 percent. The urban population shows a higher enrolment rate than the rural population. We also see that enrolment rates among the males and females have increased in these three time points and enrolment rates among the male population is higher than that of the female population. Also the male population residing in urban areas reports a higher enrolment than those residing in rural areas. Similarly females residing in urban areas show a higher enrolment rate than those residing in rural areas.

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[5]   The states of Chhattishgarh, Jharkhand and Uttaranchal (renamed as Uttarakhand) were carved in 2000 out of Madhya Pradesh, Bihar and Uttar Pradesh respectively. We could identify the districts that form these new states in 1993-94 and 1999-00. Therefore, the results that are reported in this study for all the states in all the three rounds are as per the political boundary in 2001.

There are wide variations across the states. In 1993-94, enrolment rate among the rural population was the highest in Kerela with 15.23 percent, followed by Other States and Union Territories with 13.40 percent, which is much higher than the All India level of 5.22 percent. With the exception of these two states, other states show enrolment rates which was below 10 percent. Madhya Pradesh with 2.23 percent reports the lowest enrolment rate in 1993-94 in the rural sector.

Among those residing in urban areas, Himachal Pradesh, Jammu & Kashmir and Uttarakhand report the highest enrolment rate with 46.76 percent of the urban youth enrolled in post-higher secondary studies. It shows enrolment rate which is much higher than the All India level of 23.14 percent. Andhra Pradesh with 19.04 % shows the lowest enrolment rate.

Among the male youth, Other States and Union Territories show a very high enrolment rate with 26.90 percent. Punjab with 7.53 percent reports the lowest enrolment rate, which is lower than the All India level of 13.09 percent. Kerela with 17.33 percent shows the highest enrolment rate among the male population residing in rural areas. Punjab with 4.02 percent shows the lowest enrolment rate, which is lower than the All India level of 8.05 percent. However among the male residing in urban areas, Himachal Pradesh, Jammu & Kashmir and Uttarakhand with 46.34 percent report the highest enrolment rate, which is higher than the All India level of 26.35 percent. Punjab again with 15.91 percent reports the lowest enrolment rate.

Table 12: Gross Enrollment Rates in Post Higher Secondary Education by State, Sector and Gender: 1993-94

State	Male			Female			Total		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Andhra Pradesh	4.58	26.20	10.79	1.26	11.86	4.05	2.82	19.04	7.27
Assam	10.01	29.19	12.16	5.73	19.06	7.40	8.13	24.32	10.04
Bihar	13.34	47.01	17.46	1.19	25.42	3.22	7.24	38.44	10.47
Chhattisgarh	5.72	26.80	10.05	1.10	25.55	4.90	3.37	26.27	7.50
Gujarat	10.58	20.43	13.89	4.86	20.95	10.11	8.20	20.66	12.33
Haryana	10.10	25.88	14.06	3.03	15.60	6.28	7.06	21.37	10.70
Jharkhand	8.94	37.01	14.86	2.30	27.49	8.13	5.85	32.30	11.68
Karnataka	7.31	29.13	14.17	0.61	16.61	5.20	4.06	23.45	9.90
Kerela	17.33	18.53	17.66	13.37	22.53	15.85	15.23	20.64	16.70
Madhya Pradesh	4.34	26.69	10.90	0.08	14.56	3.88	2.23	21.15	7.50
Maharashtra	11.41	28.41	18.54	1.84	21.48	9.64	6.61	25.09	14.15
Orissa	7.39	32.86	11.35	3.14	17.58	4.79	5.11	26.05	7.92
Punjab	4.02	15.91	7.53	3.92	23.26	9.72	3.97	19.28	8.53
Rajasthan	4.73	24.57	9.92	0.64	20.15	4.83	2.80	22.77	7.60
Tamil Nadu	9.01	21.14	13.74	2.24	18.34	7.84	5.29	19.73	10.59
Uttar Pradesh	7.00	22.78	10.51	1.48	19.99	5.12	4.47	21.59	8.08
West Bengal	5.79	26.51	10.54	1.27	14.83	4.58	3.61	20.72	7.66
HP, J&K & Uttarakhand	6.80	46.34	14.58	2.44	47.42	8.32	4.58	46.76	11.51
North Eastern States	10.62	33.10	14.53	4.51	24.01	8.01	7.55	28.48	11.25
Other States & UTs	12.23	31.17	26.90	15.65	27.66	25.98	13.40	29.48	26.48
Total	8.05	26.35	13.09	2.26	19.45	6.66	5.22	23.14	9.99

Note: Age group considered is 18 – 22 years.

Source: *Special tabulation by the authors using the NSS unit record data on Employment and Unemployment collected during the 50th round.*

**Table 13: Gross Enrollment Rates in Post Higher Secondary Education
by State, Sector and Gender: 1999-00**

State	Male			Female			Total		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Andhra Pradesh	4.36	32.80	13.44	2.02	22.11	8.13	3.15	27.45	10.72
Assam	9.18	39.19	12.15	6.72	27.36	8.83	8.00	33.38	10.55
Bihar	4.70	33.22	8.82	0.81	28.46	3.54	2.69	31.28	6.16
Chhattisgarh	6.46	29.32	10.65	3.24	28.31	7.85	4.90	28.83	9.29
Gujarat	6.97	24.00	12.75	3.28	23.64	10.24	5.15	23.83	11.51
Haryana	10.95	14.43	12.01	5.83	18.59	9.43	8.49	16.30	10.80
Jharkhand	6.83	30.36	12.22	0.88	22.93	4.93	4.02	27.36	8.89
Karnataka	5.26	25.22	11.21	1.02	18.35	6.40	3.13	21.68	8.78
Kerela	12.97	32.01	17.96	19.98	33.08	23.42	16.61	32.57	20.80
Madhya Pradesh	7.58	26.20	12.77	8.11	23.22	12.09	7.83	24.82	12.44
Maharashtra	14.21	25.04	19.18	4.47	24.95	12.72	9.41	25.00	16.16
Orissa	10.28	23.13	12.91	4.43	11.58	5.61	7.27	17.94	9.24
Punjab	7.86	17.16	11.13	6.97	26.23	13.80	7.45	21.36	12.36
Rajasthan	6.01	28.53	12.20	2.07	23.96	7.54	4.16	26.53	10.04
Tamil Nadu	10.37	31.37	17.88	6.36	19.21	10.87	8.25	25.05	14.20
Uttar Pradesh	10.84	20.55	13.23	2.81	19.71	6.43	7.04	20.19	10.08
West Bengal	6.21	21.39	9.73	1.39	17.78	4.70	3.78	19.73	7.24
HP, J&K & Uttarakhand	12.24	53.96	20.38	9.88	44.03	16.59	11.04	48.88	18.45
North Eastern States	6.57	28.79	10.98	3.58	25.63	7.84	5.08	27.24	9.42
Other States & UTs	3.92	31.31	20.96	10.38	28.90	24.57	5.87	30.20	22.44
Total	8.39	26.39	13.57	4.07	22.84	9.06	6.26	24.73	11.38

Note: Age group considered is 18 – 22 years.

Source: *Special tabulation by the authors using the NSS unit record data on Employment and Unemployment collected during the 55th round.*

In case of females, Other States and Union Territories with 25.98 percent show a very impressive enrolment rate, this is in fact much higher than the All India level of 6.66 percent. Kerela with 15.85 percent and Gujarat with 10.11 percent also shows an impressive enrolment rate. Other states however report enrolment rates which are below 10 percent. Bihar with 3.22 percent shows the lowest enrolment rate among females. Among rural females, Other States and Union territories with 15.65 percent show a very high enrolment rate. Next to it is Kerela with 13.37 percent. These states shows enrolment rates much higher than the All India level of 2.26 percent. Other states show a much lower enrolment rate among females residing in rural areas. However among females residing in urban areas, Himachal Pradesh including Jammu & Kashmir and Uttarakhand with 47.42 percent shows a very high enrolment rate that is higher than the All India level of 19.45 percent. Andhra Pradesh with 11.86 percent reports the lowest enrolment rate.

In 1999-2000, we see from Table 12 that Other States and Union Territories report the highest GER with 22.44 percent followed by Kerela with 20.80 percent and Himachal Pradesh including Jammu and Kashmir and Uttarakhand with 18.45 percent which is much higher than the All India average of 11.38 percent. Maharashtra (16.16 percent), Tamil Nadu (14.20 percent), Madhya Pradesh (12.44 percent), Punjab (12.36 percent) and

Gujarat (11.51 percent) also report enrolment rates that are higher than the all India average. However Bihar with only 6.16 percent reports the lowest enrolment rate among all the states in India.

**Table 14: Gross Enrollment Rates in Post Higher Secondary Education
by State, Sector and Gender: 2004-2005**

State	Male			Female			Total		
	Rural	**Urban**	**Total**	**Rural**	**Urban**	**Total**	**Rural**	**Urban**	**Total**
Andhra Pradesh	12.77	37.09	19.54	6.51	26.62	11.98	9.53	31.76	15.65
Assam	9.19	35.41	11.36	5.06	35.97	8.33	7.30	35.71	9.95
Bihar	9.20	31.84	12.29	1.34	22.06	3.16	5.28	28.14	7.87
Chhattisgarh	8.15	41.94	15.33	4.63	31.12	9.47	6.51	37.40	12.66
Gujarat	10.44	20.50	14.04	9.74	20.44	12.99	10.11	20.47	13.56
Haryana	12.50	31.05	17.48	9.86	42.41	17.87	11.31	35.82	17.65
Jharkhand	7.11	34.80	12.88	2.75	34.07	8.46	4.88	34.46	10.65
Karnataka	8.11	25.20	14.02	6.61	16.84	9.95	7.36	21.20	12.01
Kerela	18.67	29.16	21.26	26.62	34.86	28.51	22.77	31.96	24.96
Madhya Pradesh	6.17	27.84	11.57	2.25	18.71	6.06	4.30	23.70	8.97
Maharashtra	13.20	27.09	19.33	5.89	26.16	14.46	9.80	26.67	17.11
Orissa	6.17	28.99	10.24	3.68	17.45	5.16	4.77	24.21	7.50
Punjab	7.87	23.39	13.08	12.78	38.46	21.28	10.14	30.30	16.86
Rajasthan	9.53	23.35	13.21	2.90	18.32	6.86	6.39	21.02	10.22
Tamil Nadu	10.65	31.68	20.02	7.76	29.57	16.02	9.12	30.71	18.01
Uttar Pradesh	11.66	24.87	14.85	6.34	22.57	9.90	9.11	23.84	12.51
West Bengal	8.87	30.41	14.77	5.47	23.69	9.70	7.09	27.28	12.19
HP, J&K & Uttarakhand	16.34	23.93	18.24	14.82	40.99	20.16	15.61	31.00	19.13
North Eastern States	5.73	33.56	10.81	4.68	22.19	8.14	5.20	27.58	9.46
Other States & UTs	8.99	29.67	26.72	14.17	39.40	35.78	11.07	33.57	30.36
Total	10.35	28.12	15.56	6.39	25.83	11.46	8.40	27.08	13.59

Note: Age group considered is 18 – 22 years.

Source: *Special tabulation by the authors using the NSS unit record data on Employment and Unemployment collected during the 61st round.*

In the rural sector, Kerala with 16.61 percent reports the highest enrolment rate followed by Himachal Pradesh including Jammu and Kashmir and Uttarakhand with 11.04 percent. Other states like Maharashtra (9.41 percent), Haryana (8.49 percent), Tamil Nadu (8.25 percent), Assam (8.00 percent), Madhya Pradesh (7.83 percent), Punjab (7.45 percent), Orissa (7.27 percent) and Uttar Pradesh (7.04 percent) report enrolment rates that are higher than the All India average of 6.62 percent. Other States and Union Territories with 5.87 percent show enrolment rates which are lower than the All India average. Bihar with 2.69 percent only reports the lowest enrolment rate.

In the urban sector Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 48.88 percent shows the highest enrolment rate, with enrolment rates much higher than the All India average of 24.73 percent. Other states like Assam (33.38 percent), Kerela (32.57 percent), Bihar (31.28 percent), Other States and Union Territories (30.20 percent), Chhattisgarh (28.83 percent), Andhra Pradesh (27.45 percent), Jharkhand (27.36 percent), North Eastern States (27.24 percent), Rajasthan (26.53 percent), Tamil Nadu (25.05 percent), Maharashtra (25.00 percent) and Madhya Pradesh (24.82 percent) also show enrolment rates that are higher than the all India average. Haryana with 16.30 percent reports the lowest enrolment rate.

Enrolment rate among males is seen to be highest in Other states and Union Territories with 20.96 percent followed by Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 20.38 percent. These two states show enrolment rates higher than the All India level of 13.57 percent. Bihar with 8.82 percent shows the lowest GER of male youth. Among rural males Maharashtra with 14.21 percent shows the highest enrolment rate followed by Kerela with 12.97 percent and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 12.24 percent. Other states and Union Territories with 8.39 percent report the lowest enrolment rate which is lower than the All India level of 8.39 percent. The GER of males residing in urban areas is observed to be the highest in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 53.96 percent. Enrolment rate among urban males is quite high compared to those in rural areas.

Among females, Other States and Union Territories and Kerela with 24.57 and 23.42 percent respectively report enrolment rates that are higher than the All India level of 9.06 percent. Bihar with 3.54 percent reports the lowest female GER among all the states. In rural areas, Kerela with 19.98 percent reports the highest female GER followed by Other states and Union Territories with 10.38 percent. Other States with female enrolment rates higher than the All India level of 4.07 percent are Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Madhya Pradesh, Punjab, Assam, Tamil Nadu, Haryana, Maharashtra and Orissa. Bihar with 0.81 percent reports the lowest enrolment rate. In urban areas, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 44.03 percent reports the highest enrolment rate for females, followed by Kerela with 33.08 percent and Other States and Union Territories with 28.90 percent. Other states with enrolment rates higher than the All India level of 22.84 percent are Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and North Eastern States. Orissa with 11.58 percent reports the lowest enrolment rate.

In 2004-05, Other States and Union Territories record the highest enrolment rate with 30.36 percent followed by Kerela with 24.96 percent. Tamil Nadu (18.01 percent), Haryana (17.65 percent), Himachal Pradesh including Jammu and Kashmir and Uttarakhand, Maharashtra (19.13 percent), Punjab (16.86 percent) and Andhra Pradesh (15.65 percent) also show enrolment rates that are higher than the all India average of 13.59 percent. Orissa with 7.5 percent reports the lowest GER among all the states.

In the rural sector, Kerela again with 22.77 percent reports the highest enrolment rate followed by Himachal Pradesh with 15.61 percent. Other states with enrolment rates above the all India average of 8.40 percent are Haryana, Other States and Union Territories, Tamil Nadu, Maharashtra, Gujarat, Punjab, and Andhra Pradesh. Jharkhand Madhya Pradesh and Orissa report the lowest GER among all the states with less than 5 percent of the youth within the age group of 18-22 years enrolled in post-higher secondary studies.

In the urban sector the highest enrolment rate is recorded in Chhattisgarh with 37.4 percent of the youth enrolled in post-higher secondary studies. Jharkhand (34.46 percent), Haryana (35.82 percent), Kerela (31.96 percent), Bihar (28.14 percent), Assam (35.71 percent), Tamil Nadu (30.71 percent), Himachal Pradesh including Jammu & Kashmir and Uttarakhand (31 percent), Andhra Pradesh (31.76 percent) and West Bengal (27.28 percent) report enrolment rates that are higher than the All India Average of 27.08 percent. Gujarat with 20.47 percent reports the lowest enrolment rate among all the states.

Among males, the highest enrolment rate is reported in Other States and Union Territories with 26.72 percent followed by Kerela with 21.26 percent and Tamil Nadu with 20.02 percent. Other states with enrolment rates higher than the All India level of 15.56 percent are Haryana, Maharashtra, Andhra Pradesh and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand). Orissa with 10.24 percent reports the lowest enrolment rate. Among males residing in rural areas, Kerela with 18.67 percent reports the highest enrolment rate, which is higher than the All India level of 10.35 percent. North Eastern States with 5.73 percent report the

lowest enrolment rate. Among males residing in urban areas Chhattisgarh with 41.94 percent reports the highest enrolment rate, followed by Andhra Pradesh with 37.09 percent and Assam with 35.41 percent. Gujarat with 20.5 percent reports the lowest enrolment rate.

Among females the highest enrolment rate is recorded in Other States and Union territories with 35.78 percent followed by Kerela with 28.51 percent, Punjab with 21.28 and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 20.16 percent. Other states with enrolment rates higher than the All India level of 11.46 percent are Andhra Pradesh, Haryana, Tamil Nadu, Maharashtra and Gujarat. In rural areas enrolment rates of the female population is lower with the All India level reporting enrolment rate of 6.39 percent. Statewise, Kerela with 26.62 percent shows the highest female enrolment rate among all the states. Next to Kerela is Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 14.82 percent and Other States and Union Territories with 15.98 percent. Bihar with 1.34 percent only reports the lowest enrolment rate. In the urban sector Haryana with 42.41 percent reports the highest enrolment rate followed by Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 40.99 percent and Other States and Union Territories with 39.40 percent. Other states with enrolment rates for urban females higher than the All India level of 25.83 percent are Andhra Pradesh, Chhattisgarh, Kerela, Punjab, Jharkhand, Assam, Tamil Nadu, West Bengal and Maharashtra.

Summing up, there are wide variations in post-higher secondary enrolment across states. The disparities among states in enrolment are more pronounced in the rural sector than in the urban sector. All the states have increased their GER over the years. However, the rate of increase is different across states, sector and gender. Varying degree of gender disparity is also observed in all states.

Enrolment in Post – Higher Secondary Education by Means of Livelihood across States

The households are classified into several categories or household types based on the means of livelihood or the sources of the households' income during the 365 days preceding the date of survey. The type of a household is the source that contributes 50 percent or more of the household's income from economic activities. For the rural areas, the households are classified into five categories, namely, self-employed in non-agriculture, agricultural labour, other labour, self-employed in agriculture and others. For the urban areas, there are four types, namely, self-employed, regular wage or salary earning, casual labour and others. The group 'others' has income from several sources, none of which contributes 50 percent or more to the total income. Households that earn mainly from non-economic activities also are classified as 'others'. We further divide this section into two sub-sections.

Enrolment in Post – Higher Secondary Education by Means of Livelihood Across States in The Rural Sector:-

In Tables 5.15, 5.16 and 5.17 we report the GER in post-higher secondary educational institutions in 1993-94, 1999-2000 and 2004-2005 divided into states and household types in the rural sector. In general the lowest GER is observed among the youth coming from households that earn their livelihood mainly from agricultural labour. This is the case in most of the states. However, in some states lowest GER is observed in case of households categorized as 'other labour'. Nevertheless, there is not much variation in GER between 'agricultural labour' and 'other rural labour' households. This shows that households that have vulnerable sources of income do not have much choice in deciding whether to send their youth for higher education. No matter how much they may want to, the outcome in most cases is non-enrolment.

Table 15 shows that among those whose means of livelihood is self employed in non-agriculture, highest enrolment rate in 1993-94 is recorded in Other States and Union Territories with 34.95 percent, which is to a great extent higher than the All India average of 5.35 percent. Gujarat with 15.88 percent and Kerela with 15.02 percent also show high enrolment rates. Other states like Chhattisgarh, North Eastern States, Jharkhand, Bihar, Assam, Haryana and Orissa show enrolment rates, which are higher than the All India average. However Tamil Nadu, West Bengal, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Andhra Pradesh, Karnataka, Uttar Pradesh, Maharashtra, Punjab, Madhya Pradesh and Rajasthan shows enrolment rate which is lower than the All India average. Rajasthan with only 0.89 percent shows the least enrolment rate among people within the age group of 18-22 years whose principal source of income is self-employment in non-agriculture.

In case of agricultural labour households, we find that the highest enrolment rate is in Kerela with 6.54 percent followed by the North Eastern States with 4.70 percent and Gujarat with 3.91 percent. Maharashtra, Other States and Union Territories, Karnataka and Tamil Nadu also show a high enrolment rate, higher than the All India Average of 1.85 percent. On the other hand, Bihar, Andhra Pradesh, Uttar Pradesh, Haryana, Jharkhand, Madhya Pradesh, Orissa, Chhattisgarh and West Bengal shows enrolment rate which is lower than the All India average with the lowest being recorded in West Bengal at 0.26 percent only. Punjab, Rajasthan, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), show negligible enrolment rates.

Table 15: Gross Enrollment Rates in Post Higher Secondary Education
by State and Household Type in the Rural Sector: 1993-94

States	Self employed in non agriculture	Agricultural Labour	Other Labour	Self employed in agriculture	Others	Total
Andhra Pradesh	3.97	1.58	0.82	2.28	18.84	2.82
Assam	6.37	1.85	2.13	7.45	27.12	8.13
Bihar	7.21	1.60	0.00	9.70	22.41	7.24
Chhattisgarh	11.69	0.46	5.45	3.06	11.03	3.37
Gujarat	15.88	3.91	3.69	6.23	28.36	8.20
Haryana	5.58	1.38	0.00	6.43	28.74	7.06
Jharkhand	10.61	1.30	2.90	5.35	14.06	5.85
Karnataka	3.80	2.12	3.55	4.32	13.77	4.06
Kerela	15.02	6.54	6.00	24.95	34.39	15.23
Madhya Pradesh	1.80	0.95	0.97	2.15	15.46	2.23
Maharashtra	2.79	3.49	7.75	8.46	16.12	6.61
Orissa	5.56	0.71	4.25	4.50	14.57	5.11
Punjab	2.65	0.00	0.00	6.37	8.18	3.97
Rajasthan	0.89	0.00	1.57	2.51	16.44	2.80
Tamil Nadu	4.77	1.95	2.81	6.57	18.87	5.29
Uttar Pradesh	3.24	1.48	0.55	4.57	10.19	4.47
West Bengal	4.06	0.26	1.56	4.12	13.80	3.61
HP, J & K & Uttarakhand	4.05	0.00	0.78	2.06	20.84	4.58
North Eastern States	10.82	4.70	3.05	4.57	17.40	7.55
Other States & UTs	34.95	2.29	13.05	20.94	7.07	13.40
Total	5.35	1.85	2.77	5.27	16.83	5.22

Note: Age group considered is 18 – 22 years

Source: *As in Table5.4*

**Table 16: Gross Enrollment Rates in Post Higher Secondary Education
by State and Household Type in the Rural Sector: 1999-00**

States	Self employed in non agriculture	Agricultural Labour	Other Labour	Self Employed in agriculture	Others	Total
Andhra Pradesh	5.29	1.21	1.71	3.15	13.28	3.15
Assam	6.87	1.12	1.15	7.71	22.94	8.00
Bihar	2.13	0.01	0.00	4.21	7.87	2.69
Chhattisgarh	17.87	0.57	0.00	4.09	24.94	4.90
Gujarat	3.04	1.11	3.58	4.85	22.65	5.15
Haryana	9.63	1.17	0.48	6.89	21.74	8.49
Jharkhand	1.83	0.73	0.00	2.11	16.72	4.03
Karnataka	5.46	2.22	5.28	3.01	4.24	3.13
Kerela	10.03	7.12	8.52	31.28	38.26	16.57
Madhya Pradesh	2.98	0.43	2.02	3.75	61.34	7.83
Maharashtra	7.16	3.60	4.06	8.85	30.30	9.41
Orissa	9.73	1.35	4.90	7.01	24.01	7.27
Punjab	5.13	0.57	1.29	10.53	19.58	7.25
Rajasthan	5.24	2.83	2.18	2.91	17.11	4.16
Tamil Nadu	14.18	2.95	5.24	10.32	29.29	8.26
Uttar Pradesh	5.06	1.09	2.87	7.75	16.69	7.04
West Bengal	3.44	1.10	0.00	6.21	9.15	3.79
HP, J & K & Uttarakhand	9.05	0.14	2.81	10.99	21.17	11.05
North Eastern States	7.42	0.97	4.01	2.68	12.37	5.11
Other States & UTs	2.08	0.74	2.82	3.60	11.39	5.56
Total	5.83	1.58	3.39	6.31	20.86	6.25

Note: Age group considered is 18 – 22 years
Source: *As in Table5.4*

For those youths whose family's principal source of income is other types of labour we observe that enrolment rate for post-higher secondary studies is highest in Other States and Union Territories with 13.05 percent which is higher than the All India average of 2.77 percent. Next is Maharashtra with 7.75 percent followed by Kerela with 6.00 percent. Chhattisgarh, Orissa, Gujarat, Karnataka, North Eastern States, Jharkhand and Tamil Nadu also show enrolment rates, which is higher than the All India average. States that show enrolment rates which are lower than the All India level are Assam, Rajasthan, West Bengal, Madhya Pradesh, Andhra Pradesh, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) and Uttar Pradesh. Uttar Pradesh records the lowest enrolment rate with only 0.55 percent of its youth whose family's principal source of income is other labour are enrolled in post-higher secondary educational institutions.

The highest GER for post-higher secondary studies among those youth whose family's principal source of income is self-employment in agriculture is found in Kerela with 24.95 percent followed by Other States and Union Territories with 20.94 percent and Bihar with 9.70 percent. Maharashtra, Assam, Tamil Nadu, Haryana, Punjab, Gujarat and Jharkhand show enrolment rates which are higher than the All India average of 5.27 percent. Uttar Pradesh, North Eastern States, Orissa, Karnataka, West Bengal, Jharkhand, Chhattisgarh, Rajasthan, Andhra Pradesh, Madhya Pradesh and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) show enrolment rates which are lower than the All India average with the least being recorded in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 2.06 percent only.

**Table 17: Gross Enrollment Rates in Post Higher Secondary Education
by State and Household Type in the Rural Sector: 2004-2005**

States	Self employed in non agriculture	Agricultural Labour	Other Labour	Self employed in agriculture	Others	Total
Andhra Pradesh	13.00	6.31	2.50	8.97	32.79	9.53
Assam	7.78	0.91	0.86	6.96	23.31	7.30
Bihar	3.51	0.29	2.97	8.32	13.87	5.28
Chhattisgarh	9.04	1.95	16.95	7.88	13.84	6.51
Gujarat	13.55	2.70	1.77	11.20	36.08	10.11
Haryana	6.27	0.00	4.12	14.62	19.29	11.31
Jharkhand	4.67	3.38	2.32	2.52	20.59	4.88
Karnataka	8.21	2.55	5.43	9.13	25.93	7.36
Kerela	18.08	13.53	17.56	38.02	33.54	22.77
Madhya Pradesh	2.67	1.21	0.72	5.71	11.86	4.30
Maharashtra	12.29	2.91	8.31	8.46	40.38	9.80
Orissa	8.91	0.69	0.48	3.91	14.96	4.77
Punjab	16.15	3.58	2.07	11.94	20.10	10.14
Rajasthan	5.69	4.30	3.72	5.81	22.79	6.39
Tamil Nadu	7.88	4.39	3.66	15.98	24.64	9.12
Uttar Pradesh	7.40	2.11	1.61	11.24	18.45	9.11
West Bengal	5.78	1.42	4.89	8.08	27.23	7.09
HP, J&K & Uttarakhand	13.87	11.58	4.86	11.96	36.65	15.61
North Eastern States	6.28	0.35	0.33	3.87	15.72	5.20
Other States & UTs	25.43	4.11	4.46	14.29	7.57	11.07
Total	8.46	2.84	4.59	9.19	24.17	8.40

Note: Age group considered is 18 – 22 years

Source: *As in Table 6*

Households that derive their income from mixed sources exhibit the highest GER in most states. Among those youth whose principal source of income is others or mixed sources, the highest enrolment rates is recorded in Kerela with 34.39 percent followed by Haryana with 28.74 percent and Gujarat with 28.36 percent. Other states like Assam, Bihar, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Tamil Nadu, Andhra Pradesh and North Eastern States also show a higher enrolment rate than the All India average of 16.83 percent. However the state, which records the least enrolment rate, is Other States and Union territories with only 7.07 percent. Next to it is Punjab with 8.18 percent and Uttar Pradesh with 10.19 percent.

Similar patterns of variation are observed in 1999-00 and 2004-05. In 1999-00, we observe in Table 16 that among those youths whose means of livelihood is self employment in non agriculture, the highest enrolment rate is recorded in Chattisgarh with 17.87 percent followed by Tamil Nadu with 14.18 percent and Kerela with 10.03 percent. Other states with enrolment rates higher than the All India average of 5.83 percent are Orissa (9.73 percent), Haryana (9.63 percent), Himachal Pradesh (including Jammu & Kashmir and Uttaranchal) (9.05 percent), North Eastern States (7.42 percent), Maharashtra (7.16 percent) and Assam (6.87 percent). However Jharkhand with 1.83 percent reports the lowest enrolment rate.

Among those youth whose family's principal source of income is Agricultural Labour the highest enrolment rate is reported in Kerela with 7.12 percent followed by Maharashtra with 3.60 percent, Tamil Nadu with 2.95

percent, Rajasthan with 2.83 percent and Karnataka with 2.22 percent. All these states show enrolment rates that are higher than the All India average of 1.58 percent. States like North Eastern States, Other States and Union Territories, Jharkhand, Chhattisgarh, Punjab, Madhya Pradesh, Himachal Pradesh (including Jammu & Kashmir and Uttaranchal) and Bihar shows enrolment rates which is below 1 percent with Bihar recording the lowest with 0.01 percent only.

In case of 'other labour' households, the highest GER is reported in Kerela with 8.52 percent, followed by Karnataka with 5.28 percent and Tamil Nadu with 5.24 percent. Other states with enrolment rates higher than the All India average of 3.39 percent are Orissa (4.90 percent), Maharashtra (4.06 percent), North Eastern States (4.01 percent) and Gujarat (3.58 percent). However Haryana with 0.48 percent shows the lowest enrolment rate. Bihar, Chhattisgarh, Jharkhand and West Bengal report a negligible enrolment rate.

Among those youths whose household type is self employed in agriculture the highest enrolment rate is reported in Kerela with 31.28 percent, followed by Himachal Pradesh (including Jammu & Kashmir and Uttaranchal) with 10.99 percent and Punjab with 10.53 percent. Other states like Punjab, Tamil Nadu, Maharashtra, Uttar Pradesh, Assam, Orissa and Haryana also show enrolment rates that are higher than the All India level of 6.31 percent. Jharkhand with 2.11 percent reports the lowest enrolment rate.

Among households with other/mixed sources of income, Madhya Pradesh reports the highest enrolment rate with 61.34 percent followed by Kerela with 38.26 percent and Mahahrashtra with 30.30 percent. Other states with enrolment rates higher than the All India level of 20.86 percent are Tamil Nadu, Orissa, Assam, Gujarat, Haryana and Himachal Pradesh (including Jammu & Kashmir and Uttaranchal). Karnataka with 4.24 percent reports the lowest enrolment rate.

In 2004-05 as evident from Table 17, for those youths whose household type is self employed in non agriculture the highest GER is observed in Other States and Union Territories with 25.43 percent followed by Kerela with 18.08 percent and Punjab with 16.15 percent. Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Gujarat, Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka, and Chhattisgarh also show enrolment rates that are higher than the All India average of 8.46 percent. Madhya Pradesh with 2.67 percent reports the lowest enrolment rate.

In case of agricultural labour households, Kerela reports the highest enrolment rate with 13.53 percent. It is worth noting that Kerela exhibits high enrolment rates even in case of household types that generally show very low or even negligible rates in other states. Next to it is Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 11.58 percent. Assam, Bihar, Haryana, Madhya Pradesh, Orissa and North Eastern States report negligible GER.

For those whose household type is other labour, Kerela once again reports the highest enrolment rate with 17.56 percent that is much higher than the All India level of 4.59 percent. Next to it is Chhattishgarh with 16.95 percent. Other states show single digit GER. Assam, Madhya Pradesh, Orissa and North Eastern States report enrolment rates that are lower than 1 percent with North eastern States reporting the lowest enrolment rate with only 0.33 percent.

For those whose household type is self employed in agriculture, Kerela reports the highest enrolment rate with 38.02 percent, which is again much higher than the All India level of 9.19 percent. Other States and Union Territories, Tamil Nadu, Haryana, Punjab, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand),

Gujarat, Karnataka, Uttar Pradesh and Maharashtra also show enrolment rates that are higher than the all India level. However Jharkhand with 2.52 percent only reports the lowest enrolment rate.

For youth whose household type is other/mixed sources the highest enrolment rate is reported in Maharashtra with 40.38 percent, followed by Himachal Pradesh with 36.65 percent and Gujarat with 36.08 percent. Other States with enrolment rates higher than the All India level are Andhra Pradesh, Karnataka, Kerela, Tamil Nadu and West Bengal. Other States and Union Territories report the lowest enrolment rate with 7.57 percent only.

The above analysis for the rural sector shows that the youth belonging to households that derive their income from agricultural and other types of labour face the greatest disadvantage. In many states the GER in these two household types is negligible. We now discuss the enrolment rates by household type in the urban sector.

Enrolment in Post – Higher Secondary Education by Means of Livelihood Across States in The Urban Sector:-

We report the GER for the age group 18 – 22 years by state and household type in the urban sector in Tables 5.18, 5.19 and 5.20 for 1993-94, 1999-00 and 2004-05 respectively. In the urban sector household type or means of livelihood of the people are broadly categorized in to four groups, namely, (i) self employed (ii) regular wage/salary earning (iii) casual labour and (iv) others.

In 1993-94 we observe in Table 18 that among the youth whose family's main source of income is self employed enrolment rate is found to be the highest in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 30.53 percent. Next is Bihar with 24.89 percent and North Eastern States with 24.55 percent. These states show enrolment rates, which is higher than the All India average of 15.42 percent. Other States like Chhattisgarh, West Bengal, Assam, Maharashtra, Gujarat, Madhya Pradesh, Rajasthan and Other States and Union Territories also show enrolment rates that are higher than the All India average. On the other hand, Karnataka, Punjab, Tamil Nadu, Kerela, Uttar Pradesh, Andhra Pradesh, Jharkhand, Orissa and Haryana show enrolment rates which are lower than the All India level with the lowest enrolment rate being observed in the state of Haryana with only 10.71 percent only. Next to it is Orissa with 10.86 percent and Jharkhand with 11.56 percent.

In case of regular wage/salary earning households, we observe the highest enrolment rate in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 58.63 percent followed by Bihar with 46.12 percent and Jharkhand with 41.22 percent. Haryana, Chhattisgarh, Assam, Kerela, North Eastern States, Uttar Pradesh and Other States and Union Territories also show enrolment rates which are higher than the All India average of 28.87 percent. Maharashtra, Madhya Pradesh, Rajasthan, Gujarat, Punjab, Karnataka, Tamil Nadu, Andhra Pradesh, West Bengal and Orissa show enrolment rates lower than the All India average. Orissa shows the lowest enrolment rate with 23.35 percent and next to it is West Bengal with 24.08 percent.

Karnataka with 9.75 percent records the GER among youth whose family's main source of livelihood is casual labour. Kerala with 5.48 percent, Chhattisgarh with 5.36 percent, Maharashtra with 4.32 percent, Andhra Pradesh with 4.31 percent, North Eastern States with 3.70 percent and Tamil Nadu with 3.22 percent show enrolment rates which are higher than the All India Average of 3.17 percent. However Assam, West Bengal, Gujarat, Rajasthan, Bihar, Madhya Pradesh, Uttar Pradesh and Other States and Union Territories show enrolment rates which are lower than the All India average with the least enrolment rate in Other States and Union Territories with 0.28 percent only. Haryana, Jharkhand, Orissa, Punjab and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) show negligible enrolment rates.

**Table 18: Gross Enrollment Rates in Post Higher Secondary Education
by State and Household Type in the Urban Sector: 1993-94**

States	Self-employed	Regular wage/ salary earning	Casual labour	Others	Total
Andhra Pradesh	12.25	25.81	4.31	48.16	19.04
Assam	17.24	33.73	2.91	26.96	24.32
Bihar	24.89	46.12	0.73	71.01	38.44
Chhattisgarh	23.66	34.66	5.36	28.80	26.27
Gujarat	16.45	27.32	1.98	58.08	20.66
Haryana	10.71	35.81	0.00	43.12	21.37
Jharkhand	11.56	41.22	0.00	90.05	32.30
Karnataka	15.12	26.14	9.75	71.61	23.45
Kerela	13.65	33.45	5.48	63.92	20.64
Madhya Pradesh	16.38	28.32	0.70	39.71	21.15
Maharashtra	16.77	28.49	4.32	82.78	25.09
Orissa	10.86	23.35	0.00	91.79	26.05
Punjab	14.87	26.77	0.00	41.77	19.28
Rajasthan	15.88	27.84	1.46	56.06	22.77
Tamil Nadu	14.32	25.85	3.22	73.75	19.73
Uttar Pradesh	13.14	31.48	0.69	64.60	21.59
West Bengal	17.30	24.08	2.38	45.46	20.72
HP, J & K & Uttarakhand	30.53	58.63	0.00	58.64	46.76
North Eastern States	24.55	32.05	3.70	36.65	28.48
Other States & UTs	15.73	30.34	0.28	134.40	29.48
Total	15.42	28.87	3.17	65.05	23.14

Note: Age group considered is 18 – 22 years
Source: *As in Table5.4*

**Table 19: Gross Enrollment Rates in Post Higher Secondary Education
by State and Household Type in the Urban Sector: 1999-00**

States	Self-employed	Regular wage/ salary earning	Casual labour	Others	Total
Andhra Pradesh	21.67	35.64	1.72	79.27	27.49
Assam	26.89	38.58	0.00	66.86	33.38
Bihar	13.65	58.95	0.15	43.18	31.30
Chhattisgarh	14.95	38.95	4.38	46.89	29.07
Gujarat	17.71	33.81	6.34	94.57	23.83
Haryana	16.26	21.89	3.74	12.82	16.34
Jharkhand	9.82	38.89	3.31	46.22	27.36
Karnataka	13.71	26.22	3.23	67.84	21.47
Kerela	28.27	40.24	7.56	102.39	32.56
Madhya Pradesh	19.26	35.07	1.45	47.26	24.82
Maharashtra	21.27	28.57	3.18	55.98	25.00
Orissa	6.80	22.04	1.71	51.56	17.98
Punjab	16.36	28.00	4.45	36.61	21.37
Rajasthan	18.57	36.35	2.88	63.82	26.53
Tamil Nadu	20.06	31.64	7.20	54.12	25.28
Uttar Pradesh	15.00	27.61	1.38	41.53	20.19
West Bengal	12.12	25.36	4.86	56.64	19.70
HP, J & K & Uttarakhand	30.79	58.83	3.80	78.99	48.88
North Eastern States	22.81	31.71	7.10	35.47	27.32
Other States & UTs	23.12	36.56	2.52	65.59	30.20
Total	17.95	32.00	3.68	57.03	24.75

Note: Age group considered is 18 – 22 years
Source: *As in Table 5*

Table 20: Gross Enrollment Rates in Post Higher Secondary Education
by State and Household Type in the Urban Sector: 2004-2005

States	Self-employed	Regular wage/ salary earning	Casual labour	Others	Total
Andhra Pradesh	26.69	35.25	2.03	104.95	31.76
Assam	22.20	38.62	11.64	58.58	35.71
Bihar	15.10	39.60	0.00	51.35	27.98
Chhattisgarh	21.19	50.37	0.86	99.37	37.40
Gujarat	20.61	15.14	4.67	115.04	20.47
Haryana	30.24	42.98	9.63	50.50	35.82
Jharkhand	21.44	30.40	4.97	72.53	32.24
Karnataka	14.72	27.11	0.57	62.90	21.20
Kerela	30.45	35.38	10.82	64.38	31.96
Madhya Pradesh	21.28	27.93	1.55	66.59	23.70
Maharashtra	22.58	31.57	2.20	85.85	26.68
Orissa	17.81	35.38	0.68	36.54	24.21
Punjab	29.07	32.08	1.56	83.54	30.30
Rajasthan	14.23	26.43	1.86	58.58	21.02
Tamil Nadu	26.68	34.63	3.56	77.55	30.71
Uttar Pradesh	12.81	39.24	2.32	68.78	23.90
West Bengal	20.62	37.68	2.48	65.13	27.19
HP, J&K & Uttarakhand	20.28	38.74	6.04	65.84	31.00
North Eastern States	19.76	30.80	2.26	45.26	27.61
Other States & UTs	31.49	35.14	2.66	81.03	33.57
Total	20.60	32.61	2.80	71.71	27.04

Note: Age group considered is 18 – 22 years

Source: *As in Table 1*

For those youth whose family's principal source of income is from others or mixed sources the highest enrolment rate is observed in Other States and Union Territories with 134.40 percent, followed by Orissa with 91.79 percent and Jharkhand with 90.05 percent. These three states show enrolment rates which are much higher than the All India average of 65.05 percent. Maharashtra (82.78 percent), Tamil Nadu (73.75 percent), Karnataka (71.61 percent) and Bihar (71.01 percent) report enrolment rates that are higher than the All India average. However, Uttar Pradesh, Kerela, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Gujarat, Rajasthan, Andhra Pradesh, West Bengal, Haryana, Punjab, Madhya Pradesh, North Eastern States, Chhattisgarh and Assam show GER which is lower than the All India average with the least being recorded in Assam with 26.96 percent only.

In 1999-00 we observe in Table 19 that among youth whose household type is self employed the highest enrolment rate is reported in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 30.79 percent, followed by Kerela with 28.27 percent and Assam with 26.89 percent. These states show enrolment rates that are much higher than the All India level of 17.95 percent. Orissa with 6.80 percent only reports the lowest enrolment rate. Among the youth whose household type is regular wage/salary earning highest enrolment rate is reported in Bihar with 58.95 percent, followed by Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 58.83 percent thus showing GER that are much higher than the All India level of 32.00 percent. However, Haryana with 21.89 percent reports the lowest enrolment rate.

In case of casual labour households, the highest GER is reported in Kerela with 7.56 percent followed by Tamil Nadu with 7.20 percent and North Eastern states with 7.10 percent. Other states with enrolment rates higher than the All India level of 3.68 percent are Gujarat, West Bengal, Punjab, Chhattisgarh, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) and Haryana. Bihar with 0.15 percent reports the lowest enrolment rate and Assam shows a negligible enrolment rate.

Among youths whose household type is others, the highest enrolment rate is reported in Kerela with 102.39 percent, followed by Gujarat with 94.57 percent and Andhra Pradesh with 79.27 percent. Other states with enrolment rates higher than the All India level of 57.03 percent are Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Karnataka, Assam, Other States and Union Territories and Rajasthan. Haryana with 12.82 percent reports the lowest enrolment rate.

Table 20 shows that in 2004-05, among those youths whose household type is self employed, highest enrolment rate is reported in Other States and Union Territories with 31.49 percent followed by Kerala with 30.45 percent and Haryana with 30.24 percent. Other states with enrolment rates higher than the All India level of 20.60 percent are Andhra Pradesh, Maharashtra, Punjab, Assam, Jharkhand, Chhattisgarh, Madhya Pradesh and Tamil Nadu. Uttar Pradesh with 12.81 percent reports the lowest enrolment rate.

Among youths whose household type is regular wage/ salary earning, highest enrolment rate is reported in Chhattisgarh with 50.37 percent, followed by Haryana with 42.98 percent. Other States with enrolment rates higher than the All India level of 32.61 percent are Himachal Pradesh, Kerela, Uttar Pradesh, Bihar, Orissa, West Bengal, Assam, Tamil Nadu, Other States and Union Territories and Andhra Pradesh. The lowest enrolment rate is recorded in Gujarat with 15.14 percent.

For those youths whose household type is Casual Labour the highest enrolment rate is reported in Assam with 11.64 percent. Next to it is Kerela with 10.82 percent and Haryana with 9.63 percent. Bihar, Chhattisgarh, Karnataka and Orissa report GER that are below 1 percent.

For youths whose household type is others, the highest enrolment rate is reported in Andhra Pradesh with 104.95 percent, followed by Gujarat with 115 percent and Chhattisgarh with 99.37 percent. Orissa with 36.54 percent reports the lowest enrolment rate for this household type.

The above discussion highlights the fact that the disparities across states for the same household type are much less in the urban sector compared to the rural sector. Within the same state, however, there are wide disparities across household types with casual labour households exhibiting the lowest GER. For instance, in Chhattisgarh, casual labour households reported a GER of less than 1 percent while 'others' have a GER of 99 percent in 2004-05. Kerela, however, stands out among all the states. Kerela exhibits high enrolment rates even in case of household types that generally show very low or even negligible rates in other states.

Enrolment in Post – Higher Secondary Education by Economic Classes

The economic status of a household is a crucial factor in determining whether its members will have access to higher education or not. Therefore, in this section we discuss the status of enrolment in post-higher secondary education in the states by economic classes. As in the case of all India level, firstly, we divide the population into two categories – the poor and non-poor – based on the poverty line as defined by the Planning Commission, Government of India. Secondly, we divide the population in each sector into five quintiles based on the per capita monthly expenditure. Accordingly, this section is further divided into two sub-sections.

Enrolment in Post – Higher Secondary Education of Poor and Non-Poor:- Table 21, 5.22 and 5.23 give the GER of persons in the age group 18 – 22 years in post-higher secondary educational institutions in 1993-94, 1999-00 and 2004-2005 respectively, divided into place of residence, states and also classified by poor and non-poor. In general, we observe that enrolment rates in the urban sector are higher than that in the rural sector at the three time points. Also between the poor and non-poor, the non-poor have performed much better than the poor. The poor residing in urban areas show a higher enrolment rate than those in the rural sector. Similarly the non-poor residing in urban areas reports a higher enrolment rate than those residing in rural areas. The all India figures have shown a steady and continuous increase in the enrolment rates between 1993-94 and 2004-2005. However among the poor we see that there has been a decline in the enrolment rates from 3.19 percent in 1993-94 to 2.75 percent in 1999-2000 but an increase from 2.75 percent to 2.77 percent between 1999-2000 and 2004-2005. Among the non-poor there has been a continuous increase in the enrolment rates. There are wide disparities across the states with regard to the GER. The disparities are much more pronounced among the rural non-poor and the urban poor.

Table 21: Gross Enrollment Rates in Post Higher Secondary Education
by State, Sector, Poor and Non-Poor: 1993-94

States	Poor			Non Poor			Total		
	Rural	**Urban**	**Total**	**Rural**	**Urban**	**Total**	**Rural**	**Urban**	**Total**
Andhra Pradesh	2.34	8.09	5.44	2.88	24.90	7.67	2.82	19.04	7.27
Assam	4.67	14.60	4.95	10.40	25.22	12.90	8.13	24.32	10.04
Bihar	3.32	16.79	4.16	11.63	47.84	16.90	7.24	38.44	10.47
Chhattisgarh	1.55	18.82	4.41	4.52	30.26	9.39	3.37	26.27	7.50
Gujarat	1.11	3.80	2.28	9.74	27.18	15.02	8.20	20.66	12.33
Haryana	2.87	0.00	2.34	8.23	24.95	12.78	7.06	21.37	10.70
Jharkhand	1.31	3.65	1.54	11.63	40.21	21.20	5.85	32.30	11.68
Karnataka	3.25	6.03	4.25	4.35	32.91	12.24	4.06	23.45	9.90
Kerela	4.68	9.87	6.29	18.20	24.50	19.84	15.23	20.64	16.70
Madhya Pradesh	0.99	7.14	3.25	2.79	33.38	9.83	2.23	21.15	7.50
Maharashtra	2.13	7.77	4.52	8.41	32.69	18.18	6.61	25.09	14.15
Orissa	2.01	7.88	2.63	7.46	34.93	11.69	5.11	26.05	7.92
Punjab	0.00	3.42	1.07	4.34	20.87	9.23	3.97	19.28	8.53
Rajasthan	1.93	3.74	2.50	3.02	30.59	9.07	2.80	22.77	7.60
Tamil Nadu	0.34	5.78	2.67	7.25	27.78	14.21	5.29	19.73	10.59
Uttar Pradesh	1.50	5.49	2.19	6.17	28.03	11.22	4.47	21.59	8.08
West Bengal	0.83	4.03	1.39	4.93	25.39	10.33	3.61	20.72	7.66
HP, J & K & Uttarakhand	0.90	2.88	0.99	5.62	49.30	14.04	4.58	46.76	11.51
North Eastern States	3.85	14.74	4.47	8.31	29.16	12.42	7.55	28.48	11.25
Other States & UTs	0.19	2.84	2.65	13.95	33.06	29.24	13.40	29.48	26.48
Total	1.99	6.69	3.19	6.65	29.85	12.92	5.22	23.14	9.99

Note: Age group considered is 18 – 22 years

Source: *As in Table 1*

Table 22: Gross Enrollment Rates in Post Higher Secondary Education by State, Sector, Poor and Non-Poor: 1999-00

States	Poor			Non Poor			Total		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Andhra Pradesh	0.86	6.77	4.18	3.41	36.10	11.99	3.15	27.45	10.72
Assam	2.28	19.01	2.61	12.40	34.61	15.83	8.00	33.38	10.55
Bihar	0.67	3.17	0.84	4.40	39.81	10.19	2.69	31.28	6.16
Chhattisgarh	0.55	9.45	2.20	7.17	39.14	13.00	4.90	28.83	9.29
Gujarat	0.97	0.88	0.93	5.79	27.96	13.22	5.15	23.83	11.51
Haryana	0.28	0.00	0.20	9.47	18.24	12.06	8.49	16.30	10.80
Jharkhand	1.00	5.95	1.50	6.49	32.52	13.74	4.02	27.36	8.89
Karnataka	1.03	7.30	3.33	3.74	27.77	10.56	3.13	21.68	8.78
Kerela	4.38	9.91	6.36	19.10	40.75	24.29	16.61	32.57	20.80
Madhya Pradesh	0.95	6.32	2.59	11.56	37.88	18.19	7.83	24.82	12.44
Maharashtra	2.87	7.74	5.38	11.11	31.94	19.58	9.41	25.00	16.16
Orissa	0.74	6.34	1.78	12.02	26.52	14.69	7.27	17.94	9.24
Punjab	3.18	1.45	2.77	7.96	22.63	13.31	7.45	21.36	12.36
Rajasthan	1.32	8.75	3.81	4.67	31.39	11.30	4.16	26.53	10.04
Tamil Nadu	1.61	8.42	4.15	10.47	31.26	17.69	8.25	25.05	14.20
Uttar Pradesh	2.10	3.05	2.35	8.95	28.66	13.25	7.04	20.19	10.08
West Bengal	1.11	2.63	1.29	5.27	23.31	10.02	3.78	19.73	7.24
HP, J & K & Uttarakhand	4.91	47.59	13.99	11.74	49.05	18.98	11.04	48.88	18.45
North Eastern States	1.59	8.52	1.82	5.60	27.58	10.33	5.08	27.24	9.42
Other States & UTs	1.09	1.49	1.41	6.13	33.31	24.34	5.87	30.20	22.44
Total	1.46	6.24	2.75	8.00	31.08	14.45	6.26	24.73	11.38

Note: Age group considered is 18 – 22 years
Source: *As in Table 5*

Table 23: Gross Enrollment Rates in Post Higher Secondary Education by State, Sector, Poor and Non-Poor: 2004-2005

States	Poor			Non Poor			Total		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Andhra Pradesh	0.84	4.70	3.03	10.02	37.79	16.87	9.53	31.76	15.65
Assam	3.26	0.00	3.22	8.19	36.61	11.30	7.30	35.71	9.95
Bihar	0.49	6.05	1.04	7.25	35.54	10.61	5.28	28.14	7.87
Chhattisgarh	0.58	6.73	2.05	8.48	51.44	16.42	6.51	37.40	12.66
Gujarat	3.55	3.24	3.43	10.71	22.43	14.56	10.11	20.47	13.56
Haryana	2.12	8.93	4.88	11.84	38.96	18.57	11.31	35.82	17.65
Jharkhand	1.89	6.04	2.34	6.35	40.21	14.19	4.88	34.46	10.65
Karnataka	0.32	5.29	2.70	8.53	26.72	14.07	7.36	21.20	12.01
Kerela	7.95	7.41	7.74	24.26	37.24	27.12	22.77	31.96	24.96
Madhya Pradesh	1.21	6.32	2.92	5.24	33.98	11.17	4.30	23.70	8.97
Maharashtra	3.77	5.79	4.90	11.21	36.23	21.04	9.80	26.67	17.11
Orissa	0.91	3.66	1.32	7.16	38.14	11.38	4.77	24.21	7.50
Punjab	2.46	1.84	2.28	10.60	31.63	17.67	10.14	30.30	16.86
Rajasthan	2.70	4.12	3.38	6.77	26.56	11.28	6.39	21.02	10.22
Tamil Nadu	3.42	7.22	5.25	9.96	35.54	20.20	9.12	30.71	18.01
Uttar Pradesh	2.28	2.66	2.38	11.04	32.45	15.64	9.11	23.84	12.51
West Bengal	0.58	0.14	0.52	9.15	30.89	15.28	7.09	27.28	12.19
HP, J&K & Uttarakhand	6.72	5.54	6.39	16.64	34.83	20.71	15.61	31.00	19.13
North Eastern States	0.23	0.00	0.23	5.84	27.86	10.42	5.20	27.58	9.46
Other States & UTs	0.00	8.46	8.15	11.39	36.91	32.95	11.07	33.57	30.36
Total	1.82	4.92	2.80	9.87	33.30	16.17	8.40	27.08	13.59

Note: Age group considered is 18 – 22 years
Source: *As in Table 1*

In 1993-94 (Table 21), among the total poor, i.e. without considering the sectoral break-up, Kerela with 6.29 percent of its poor youth enrolled in post-higher secondary studies records the highest enrolment rate, which is higher than the All India average of 3.19 percent. Next to Kerala is Andhra Pradesh with 5.44 percent and Assam with 4.95 percent. Other states like Maharashtra (4.52 percent), North Eastern States (4.47 percent), Chhattisgarh (4.41 percent), Karnataka (4.25percent), Bihar (4.16 percent) and Madhya Pradesh (3.25 percent), also show enrolment rates which are relatively higher than the All India average. However States like Tamil Nadu, Other States and Union Territories, Orissa, Rajasthan, Haryana, Gujarat, Uttar Pradesh, Jharkhand, West Bengal, Punjab and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), shows enrolment rates which are lower than the All India average with Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), recording the lowest enrolment rate with only 0.99 percent of its poor people enrolled in post-higher secondary studies. Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Punjab, West Bengal and Jharkhand, reports enrolment rates that are between 0-2 percent only.

Among the rural poor, the GER is highest in Kerela with 4.68 percent enrolled for post-higher secondary studies followed by Assam with 4.67 percent and North Eastern States with 3.85 percent. Bihar (3.32 percent), Karnataka (3.25 percent), Haryana (2.87 percent), Andhra Pradesh (2.34 percent), Maharashtra (2.13 percent) and Orissa (2.01 percent), also show enrolment rates which are higher than the All India average of 1.99 percent. On the other hand, Rajasthan, Chhattisgarh, Uttar Pradesh, Jharkhand, Gujarat, Madhya Pradesh, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), West Bengal, Tamil Nadu and Other States and Union Territories, show enrolment rates that are relatively lower than the All India average. The lowest enrolment rate is found in Other States and Union Territories where only 0.19 percent of the poor people in the rural areas are enrolled for post-higher secondary studies. Enrolment rates in Punjab are observed to be negligible.

In urban areas the GER ranges from a negligible figure in Haryana to 18.82 percent in Chhattisgarh. Chhattisgarh, Bihar (16.79 percent), North Eastern States (14.74 percent) and Assam (14.60 percent) show enrolment rates that are to a great extent higher than the All India average of 6.69 percent. Kerela, Andhra Pradesh, Orissa, Maharashtra and Madhya Pradesh also show enrolment rate, which is comparatively higher than the All India average.

In 1999-00 as observed in Table 22, among the total poor Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 13.99 percent reports the highest enrolment rate followed by Kerela with 6.36 percent and Maharashtra with 5.38 percent. Other states like Andhra Pradesh (4.18 percent), Tamil Nadu (4.15 percent), Rajasthan (3.81 percent), Karnataka (3.33 percent) and Punjab (2.77 percent) show enrolment rates that are higher than the All India average of 2.75 percent. Gujarat, Bihar and Haryana show enrolment rates that are less than 1 percent with the lowest being recorded in Haryana with 0.20 percent only. Enrolment rates among the rural poor are observed to be the highest in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 4.91 percent of the rural poor enrolled in post-higher secondary studies followed closely by Kerela with 4.38 percent and Punjab with 3.18 percent. Other states that report enrolment rates higher than the All India average of 1.46 percent are Maharashtra (2.87 percent), Assam (2.28 percent), Uttar Pradesh (2.10 percent), Tamil Nadu (1.61 percent) and North Eastern States (1.59 percent). However the lowest enrolment rate is recorded in Haryana with 0.28 percent only.

Among the urban poor, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 47.59 percent reports the highest GER, which is much higher than the All India average of 6.24 percent. Next to it is Assam with 19.01 percent and Kerela with 9.91 percent. Other states like Chhattisgarh (9.45 percent), Rajasthan (8.75 percent), North Eastern States (8.52 percent), Tamil Nadu (8.42 percent), Maharashtra (7.74 percent),

Karnataka (7.30 percent), Andhra Pradesh (6.77 percent), Orissa (6.34 percent) and Madhya Pradesh with 6.32 percent also show enrolment rates that are higher than the All India average. Gujarat with 0.88 percent only reports the lowest enrolment rate and Haryana in 55th round also reports a negligible enrolment rate.

In 2004-05 (Table 23), among the total poor Other States and Union Territories records the highest enrolment rate among the poor with 8.15 percent followed by Kerela with 7.74 percent and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 6.39 percent. The GER among the poor in other states ranges from 0.23 percent in the North Eastern States to 5.25 percent in Tamil Nadu.

Kerela with 7.95 percent reports the highest GER in post-higher secondary studies among the rural poor, followed by Himachal Pradesh with 6.72 percent. All other states have enrolment rates less than 4 percent. Andhra Pradesh, Bihar, Chhattisgarh, Karnataka, Orissa, West Bengal, North Eastern States and Other states and UTs have report negligible enrolment rates among the rural poor.

Among the poor youth residing in urban areas, Haryana with 8.93 percent reports the highest enrolment rate. Next to Kerela is Other States and Union Territories with 8.46 percent and Kerela with 7.41 percent. States like Assam, North Eastern States and West Bengal report negligible enrolment rates.

Thus, the aggregate GER among the poor has declined during the period 1993-94 to 2004-05. However, this decline is not observed in all the states. In some states, the GER among the poor has declined whereas in some other states it has increased. Nevertheless, a general observation is that the GER among the poor is much lower compared to the non-poor and the improvement also is not much in the states where it has registered an increase.

We now turn to the status of enrolment in post-higher secondary levels among the non-poor. In 1993-94, we observe in Table 21 that among the total non-poor in the country, Other States and Union Territories records the highest enrolment rate with 29.24 percent of its non-poor youth enrolled in post-higher secondary educational institutions. Jharkhand and Kerela also show a high enrolment rate with 21.20 percent and 19.84 percent respectively. Other states like Maharashtra, Bihar, Gujarat, Tamil Nadu and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with enrolment rates between 14-19 percent also show a higher enrolment rate than the All India average of 12.92 percent. However, Assam, Haryana, North Eastern States, Karnataka, Orissa, Uttar Pradesh, West Bengal, Madhya Pradesh, Chhattisgarh, Punjab, Rajasthan and Andhra Pradesh with enrolment rates between 7-13 percent, show a lower enrolment rate than the All India average. Andhra Pradesh reports the lowest GER with only 7.67 percent among the non-poor.

In the rural sector Kerela, Other States and Union Territories, Bihar and Jharkhand with enrolment rates between 11-19 percent show reasonably higher enrolment rates whereas, Assam, Gujarat, Maharashtra, North Eastern States, Haryana, Orissa and Tamil Nadu with enrolment rates between 7-10 percent show enrolment rate to be somewhat higher than the All India average of 6.65 percent. The highest GER in post-higher secondary studies among the non-poor residing in rural areas is found to be in Kerela with 18.20 percent, followed by Other States and Union Territories with 13.95 percent, Bihar and Jharkhand with enrolment rates of 11.63 percent. States which show an enrolment rate below the All India level are Uttar Pradesh, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), West Bengal, Chhattisgarh, Karnataka, Punjab, Rajasthan, Andhra Pradesh and Madhya Pradesh with the lowest being recorded in Madhya Pradesh with only 2.79 percent of its non-poor people within the age group 18-22 years enrolled in post-higher secondary institution.

In the urban area, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 49.30 percent shows the GER among non-poor in post-higher secondary studies which is much higher than the All India average of 29.85 percent. Next is Bihar with 47.84 percent and Jharkhand with 40.21 percent. Other states like Orissa (34.93 percent), Madhya Pradesh (33.38 percent), Other States and Union Territories (33.06 percent), Karnataka (32.91 percent), Maharashtra (32.69 percent), Rajasthan (30.59 percent) and Chhattisgarh (30.26 percent), also show a comparatively higher enrolment rate. States like North Eastern States, Uttar Pradesh, Tamil Nadu, Gujarat, West Bengal, Assam, Haryana, Andhra Pradesh, Kerela and Punjab shows enrolment rate, which is lower than the All India average. Punjab shows the lowest enrolment rate with only 20.87 percent of its non-poor youth residing in urban areas are enrolled for post-higher secondary studies.

In 1999-00 as observed in Table 22, among the total non-poor in the country the highest GER of 24.34 percent is recorded in Other States and Union Territories followed by Kerela with 24.29 percent and Maharashtra with 19.58 percent. Himachal Pradesh (18.98 percent), Madhya Pradesh (18.19 percent), Tamil Nadu (17.69 percent), Assam (15.83 percent) and Orissa (14.69 percent) also report enrolment rates that are higher than the All India average of 14.45 percent. However West Bengal with 10.02 percent reports the lowest enrolment rate.

Among the non-poor residing in rural areas Kerela with 19.10 percent records the highest enrolment rate followed by Assam with 12.40 percent and Orissa with 12.02 percent. Other states reporting enrolment rates that are higher than the All India average of 8.00 percent are Himachal Pradesh (11.74 percent), Madhya Pradesh (11.56 percent), Maharashtra (11.11 percent), Tamil Nadu (10.47 percent), Haryana (9.47 percent) and Uttar Pradesh (8.95 percent). Andhra Pradesh with 3.41 percent reports the lowest GER.

Among the non-poor residing in urban areas, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 49.05 percent reports the highest enrolment rate followed by Kerela with 40.75 percent and Bihar with 39.81 percent. Chhattisgarh (39.14 percent), Madhya Pradesh (37.88 percent), Andhra Pradesh (36.10 percent), Assam (34.61 percent), Other States and Union Territories (33.31 percent), Jharkhand (32.52 percent), Maharashtra (31.94 percent), Rajasthan (31.39 percent) and Tamil Nadu (31.26 percent) show enrolment rates that are higher than the All India average of 31.08 percent. The lowest GER is reported in Haryana with 18.24 percent.

In 2004-05 (Table 23), enrolment rates among the non-poor are reported to be the highest in Other States and Union Territories with 32.95 percent followed by Kerela with 27.12 percent. Other states with enrolment rates higher than the All India average of 16.17 percent are Andhra Pradesh (16.87 percent), Chhattisgarh (16.42 percent), Maharashtra (21.04 percent), Himachal Pradesh (20.71 percent), Haryana (18.57 percent), Punjab (17.67 percent) and Tamil Nadu (20.2 percent). North Eastern States with 10.42 percent only reports the lowest enrolment rate.

In the rural sector, highest enrolment rate is recorded in Kerela with 24.26 percent which is much higher than the All India average of 24.26 percent. Himachal Pradesh (16.64 percent), Haryana (11.84 percent), Maharashtra (11.21 percent), Other States and Union Territories (11.39 percent), Tamil Nadu (9.96 percent), Gujarat (10.71 percent), Punjab (10.60 percent) and Uttar Pradesh (11.04 percent) also report enrolment rates that are higher than the All India average. Madhya Pradesh with 5.24 percent only reports the lowest GER.

In the urban sector, Chhattisgarh with 51.44 percent shows enrolment rates, which is much higher than the all India average of 33.30 percent. Bihar (35.54 percent), Jharkhand (40.21 percent), Orissa (38.14 percent), Kerela (37.24 percent), Haryana (38.96 percent), Other States and Union Territories (36.91 percent), Tamil Nadu (35.54 percent), Maharashtra (36.23 percent), Andhra Pradesh (37.79 percent), Madhya Pradesh (33.98 percent) and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) (34.83 percent) also show enrolment rates higher than the All India average. Gujarat with 22.43 percent reports the lowest enrolment rate.

Enrolment in Post – Higher Secondary Education: Variation Across States, Sector and Quintiles:- We divide the population in each sector and each state into five quintiles based on the per capita monthly expenditure. In other words, the cut-off points for identification of quintiles are state and sector specific. Thus the level of living of the bottom 20 percent in a relatively rich state like Punjab or Goa will be much higher than the level of living of the bottom 20 percent of a relatively poorer state like Orissa. This point has to be kept in mind while comparing the GER across states in the same quintile. The GER in post-higher secondary levels for the age group 18 – 22 years are reported in Tables 5.24, 5.25 and 5.26 respectively for the years 1993-94, 1999-00 and 2004-05 in the rural sector.

In 1993-94 (Table 24), the small states and Union Territories show the highest enrolment rate among the least income group i.e. in the bottom 20 percent (0-20) as well as for those groups 20-40, 40-60 percent. For the least income group i.e. 0-20 percent, highest enrolment rate as mentioned earlier is shown in Other States and Union Territories with 7.37 percent, which is higher than the All India average of 1.50 percent. Next is Kerela with 4.80 percent and North Eastern States with 4.29 percent. Lowest enrolment rate is recorded in West Bengal with only 0.13 percent and Tamil Nadu with 0.51 percent only. However Orissa shows a negligible enrolment rate. For the next quintile group 20-40 percent, Other States and Union Territories shows the highest enrolment rate of 7.12 percent, followed by Assam with 5.12 percent and North Eastern States with 4.86 percent which is higher than the All India average of 2.29 percent. Punjab with 0.22 percent shows the least enrolment rate for post-higher secondary studies within this quintile. In case of the third quintile, i.e. 40-60 percent, again Other States and Union Territories gives the highest enrolment rate of 28.06 percent followed by Kerela with 13.10 percent and Gujarat with 8.00 percent, which is higher than the All India average of 3.62 percent. Chhattisgarh shows the least enrolment rate with 0.08 percent only, which is much below the All India average. For the quintile group 60-80 percent, Kerela the state with the highest literacy rate shows highest enrolment rate for post-higher secondary studies with 14.12 percent followed by Other States and Union Territories with 13.77 percent and North Eastern States with 10.87 percent. However, Bihar, Maharashtra, Assam, Gujarat, Jharkhand and Karnataka with enrolment rates higher than the All India average. But, the lowest enrolment rate among this quintile group is noticed in Madhya Pradesh with 1.85 percent, which is much lower than the All India average of 5.03 percent. For the maximum income group, i.e. for quintile group 80-100 highest enrolment rates are again recorded in Kerela with 33.95 percent, which is much higher than the All India average of 11.36 percent. Next is Gujarat with 19.09 percent and Haryana with 19.02 percent. However Madhya Pradesh records the least enrolment rate among all states within this quintile with 4.07 percent.

**Table 24: Gross Enrollment Rates in Post Higher Secondary Education
by State and Quintile Groups in the Rural Sector: 1993-94**

State/Quintile	0-20	20-40	40-60	60-80	80-100	Total
Andhra Pradesh	1.85	1.34	0.62	3.66	5.96	2.82
Assam	2.19	5.12	7.97	7.28	15.19	8.13
Bihar	2.87	1.90	4.84	7.73	15.64	7.24
Chhattisgarh	1.03	2.41	0.08	3.95	7.28	3.37
Gujarat	1.31	3.33	8.00	6.62	19.09	8.20
Haryana	1.89	2.10	3.61	3.46	19.02	7.06
Jharkhand	1.01	1.25	1.90	6.36	15.27	5.85
Karnataka	4.06	2.63	0.84	5.58	6.50	4.06
Kerela	4.80	4.69	13.10	14.12	33.95	15.23
Madhya Pradesh	1.08	0.86	2.36	1.85	4.07	2.23
Maharashtra	0.58	4.24	6.08	7.71	11.30	6.61
Orissa	0.00	2.92	2.70	4.26	12.80	5.11
Punjab	0.59	0.22	0.99	4.71	10.63	3.97
Rajasthan	2.29	0.54	1.73	2.00	6.66	2.80
Tamil Nadu	0.51	2.03	3.75	4.89	12.96	5.29
Uttar Pradesh	0.61	1.78	2.83	3.83	10.95	4.47
West Bengal	0.13	1.06	1.76	4.92	7.41	3.61
HP, J & K & Uttarakhand	1.16	0.39	2.86	4.18	11.93	4.58
North Eastern States	4.29	4.86	6.91	10.87	9.55	7.55
Other States & UTs	7.37	7.12	28.06	13.77	10.19	13.41
Total	1.50	2.29	3.62	5.03	11.36	5.22

Note: Age group considered is 18 – 22 years
Source: *As in Table 1*

**Table 25: Gross Enrollment Rates in Post Higher Secondary Education
by State and Quintile Groups in the Rural Sector: 1999-00**

States	0-20	20-40	40-60	60-80	80-100	Total
Andhra Pradesh	0.58	1.23	0.98	3.12	8.39	3.15
Assam	0.39	3.76	3.69	11.31	17.16	8.00
Bihar	0.10	0.64	2.57	3.04	5.74	2.69
Chhattisgarh	0.04	0.00	5.19	4.06	10.52	4.90
Gujarat	1.46	3.83	1.43	2.63	15.61	5.15
Haryana	0.17	1.46	10.22	11.83	15.79	8.49
Jharkhand	0.00	1.11	1.28	1.88	12.52	4.02
Karnataka	0.29	2.96	1.60	3.16	6.50	3.13
Kerela	5.39	8.28	11.34	22.47	33.88	16.61
Madhya Pradesh	0.10	1.42	2.06	1.66	26.95	7.83
Maharashtra	2.91	2.36	6.18	9.17	18.61	9.41
Orissa	1.59	0.03	2.64	6.70	18.00	7.27
Punjab	3.02	0.00	2.91	5.11	23.48	7.45
Rajasthan	1.17	2.29	4.44	5.08	6.59	4.16
Tamil Nadu	1.09	1.97	3.26	3.93	7.12	3.59
Uttar Pradesh	0.46	1.55	1.34	2.40	6.07	2.74
West Bengal	2.78	5.88	10.52	12.85	31.27	13.76
HP, J & K & Uttarakhand	0.18	5.58	6.59	15.93	34.66	14.06
North Eastern States	11.64	5.03	14.78	28.74	55.81	24.66
Other States & UTs	2.20	5.39	3.29	2.11	17.21	6.16
Total	0.99	2.54	3.52	5.44	15.36	6.26

Note: Age group considered is 18 – 22 years
Source: *As in Table 1*

**Table 26: Gross Enrollment Rates in Post Higher Secondary Education
by State and Quintile Groups in the Rural Sector: 2004-2005**

States	0-20	20-40	40-60	60-80	80-100	Total
Andhra Pradesh	1.27	2.66	4.21	12.68	23.08	9.53
Assam	3.16	4.65	3.27	4.21	18.06	7.30
Bihar	0.06	0.71	4.21	5.71	12.30	5.28
Chhattisgarh	0.11	2.71	7.33	4.38	16.13	6.51
Gujarat	2.85	3.18	7.73	11.11	20.78	10.11
Haryana	2.44	3.16	10.63	9.16	23.69	11.31
Jharkhand	2.27	1.39	1.60	3.42	12.65	4.88
Karnataka	0.30	2.69	7.36	6.39	16.54	7.36
Kerela	11.96	16.70	14.06	30.60	39.81	22.77
Madhya Pradesh	0.74	2.51	4.63	4.69	7.05	4.30
Maharashtra	3.62	3.85	6.08	9.53	21.74	9.80
Orissa	0.19	1.55	1.53	4.57	13.51	4.77
Punjab	1.37	4.60	4.55	9.38	29.27	10.14
Rajasthan	2.48	2.25	3.41	5.45	15.01	6.39
Tamil Nadu	3.27	2.31	8.27	8.53	19.61	9.12
Uttar Pradesh	2.57	3.98	5.06	8.75	18.66	9.11
West Bengal	0.67	1.01	1.97	6.78	20.37	7.09
HP, J&K & Uttarakhand	4.72	4.73	11.87	13.36	35.41	15.61
North Eastern States	0.21	2.56	4.32	5.39	12.14	5.20
Other States & UTs	5.34	2.90	5.64	7.94	28.84	11.07
Total	2.18	3.20	5.36	8.31	18.74	8.40

Note: Age group considered is 18 – 22 years.

Source: *As in Table 5*

In 1999-00, we observe in Table 24 that for the bottom quintile, the highest enrolment rate is reported in North Eastern States with 11.64 percent, followed by Kerela with 5.39 percent and Punjab with 3.02 percent. These states show enrolment rates that are higher than the All India level of 0.99 percent. On the other hand, states like Andhra Pradesh, Uttar Pradesh, Assam, Karnataka, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Haryana, Bihar, Madhya Pradesh and Chhattisgarh shows enrolment rates that are below 1 percent. Chhattisgarh and Jharkhand report negligible enrolment rate. For the next quintile group 20-40 the state, which reports the highest enrolment rate, is Kerela with 8.28 percent. Next to it is West Bengal with 5.88 percent and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 5.58 percent. Bihar, Chhattisgarh and Punjab report a negligible enrolment rate. Among the next quintile group, i.e. 40-60, North Eastern States report the highest enrolment rate with 14.78 percent, followed by Kerela with 11.34 percent, West Bengal with 10.52 percent and Haryana with 10.22 percent. These states show enrolment rates that are much higher than the All India level of 3.52 percent. Andhra Pradesh with 0.98 percent reports the lowest enrolment rate. Among the next quintile group 60-80, North Eastern states shows the highest enrolment rate with 28.74 percent, followed by Kerela with 22.47 percent and Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 15.93 percent. Other states with enrolment rates higher than the All India level of 5.44 percent are West Bengal, Haryana, Assam, Maharashtra and Orissa. Madhya Pradesh with 1.66 percent reports the lowest enrolment rate. Among the top quintile, the highest enrolment rate is reported in North Eastern States with 55.81 percent, followed by Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 34.66 percent and Kerela with 33.88 percent. Other states with enrolment rates higher than the All India level of 15.36

percent are West Bengal, Madhya Pradesh, Punjab, Maharashtra, Orissa, Other States and Union Territories, Assam, Haryana and Gujarat. Bihar with 5.74 percent reports the lowest enrolment rate.

In 2004-05 (Table 25), among the least income group in the rural areas, Kerela reports the highest enrolment rate with 11.96 percent, followed by Other States and Union Territories with 5.34 percent and Himachal Pradesh with 4.73 percent that is much higher than the All India level of 2.18 percent. However Madhya Pradesh, West Bengal, Karnataka, North Eastern States, Chhattisgarh, Bihar and Orissa show enrolment rates which is below 1 percent with the lowest recorded in Bihar with 0.06 percent only. For the next quintile group 20-40 the highest enrolment rate is reported in Kerela with 16.7 percent, which is much higher than the All India level of 3.2 percent. Next to Kerela is Himachal Pradesh with 4.73 percent. Bihar reports the lowest enrolment rate of 0.71 percent only. For the next quintile group 40-60, highest enrolment rate is reported in Kerela with 14.06 percent followed by Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 11.87 percent and Haryana with 10.63 percent. However Orissa reports the lowest enrolment rate with 1.53 percent, which is much lower than the All India level of 5.36 percent. For the next quintile group 60-80 Kerela once again reports the highest enrolment rate with 30.60 percent that is much higher than the All India level of 8.31 percent. Next is Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 13.36 percent and Gujarat with 11.11 percent. Assam with 4.21 percent reports the lowest enrolment rate. In case of the top quintile the highest GER is reported in Kerela with 39.81 percent followed by Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 35.41 percent. Madhya Pradesh with 7.05 percent only reports the lowest enrolment rate which is lower than the All India level of 18.74 percent.

Tables 5.27, 5.28 and 5.29 report the GER for persons in the age group 18 – 22 years in post-higher secondary educational institutions in 1993-94, 1999-00 and 2004-05 respectively divided into states and quintiles in the urban sector.

In 1993-94, for the bottom quintile, i.e. quintile group 0-20, highest enrolment rate is recorded in North Eastern States with 19.60 percent followed by Chhattisgarh with 13.62 percent and Assam with 13.46 percent. Orissa, Kerela, Bihar, Karnataka and Tamil Nadu also show enrolment rate which is higher than the All India average of 6.00 percent. However among this quintile group least enrolment is recorded in Haryana with 0.49 percent and Rajasthan with 2.31 percent only. Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) shows impressive enrolment rates for the other three-quintile groups. For the quintile group 20-40 percent highest enrolment rate as mentioned above is recorded in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 47.21 percent, which is much higher than the All India average of 8.12 percent. Next is Bihar with 23.92 percent and North Eastern States with 23.57 percent. Orissa shows the lowest rate among this quintile group with 4.65 percent only. In the quintile group 40-60 percent, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) shows highest enrolment rate with 42.33 percent. Haryana with 25.79 percent and Assam with 25.19 percent also show a high enrolment rate. West Bengal with 9.06 percent shows the lowest rates among this quintile group. Again for quintile group 60-80 percent, Bihar with 46.84 percent, North Eastern States with 40.72 percent and Jharkhand with 37.08 percent shows high enrolment rates, which is higher than the All India average of 27.01 percent. Kerela with 18.88 percent only shows the least enrolment rate among this quintile group. For the highest income group, i.e. quintile group 80-100 percent, again Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 77.50 percent shows high enrolment rate, which is followed by Jharkhand with 75.36 percent and Other States and Union Territories with 74.22 percent. Bihar (67.55 percent), Orissa (57.04 percent), West Bengal (55.76 percent), Kerela (53.79 percent), Assam (53.15 percent), Rajasthan (52.60 percent), Maharashtra (51.76 percent) and Tamil Nadu (51.41 percent) gives enrolment rates which is higher than the All India average of 51.16 percent. Chhattisgarh with 34.76 percent has the least GER among all states within this quintile group.

**Table 27: Gross Enrolment Rates in Post Higher Secondary Education
by State and Quintile Groups in the Urban Sector: 1993-94**

States	0-20	20-40	40-60	60-80	80-100	Total
AP	4.89	11.40	12.33	19.72	42.23	19.04
Assam	13.46	7.97	25.19	27.42	53.15	24.32
Bihar	9.94	23.92	17.77	46.84	67.55	38.44
Chhattisgarh	13.62	22.28	23.87	29.69	34.76	26.27
Gujarat	3.07	13.59	16.70	24.52	43.41	20.66
Haryana	0.49	15.11	25.79	24.00	36.38	21.37
Jharkhand	3.23	9.86	16.42	37.08	75.36	32.30
Karnataka	7.54	5.05	21.56	26.83	49.32	23.45
Kerela	10.44	7.81	15.77	18.88	53.79	20.64
MP	4.25	7.38	14.63	22.80	50.91	21.15
Maharashtra	4.51	13.87	18.48	29.67	51.76	25.09
Orissa	11.19	4.65	23.12	27.76	57.04	26.05
Punjab	3.20	12.96	9.78	25.73	41.97	19.29
Rajasthan	2.31	9.36	12.81	28.22	52.60	22.77
Tamil Nadu	6.63	4.86	13.37	20.65	51.41	19.73
UP	3.16	7.31	11.00	28.04	50.54	21.60
West Bengal	4.46	6.94	9.06	26.07	55.76	20.72
HP, J &K & UK	2.52	47.21	42.33	39.39	77.50	46.76
NE States	19.60	23.57	19.21	40.72	38.50	28.46
Other States & UTs	2.44	8.55	23.24	36.57	74.22	29.48
Total	6.00	8.12	17.51	27.01	51.16	23.14

Note: Age group considered is 18 – 22 years

Source: *As in Table 1*

**Table 28: Gross Enrollment Rates in Post Higher Secondary Education
by State and Quintile Groups in the Urban Sector: 1999-00**

States	0-20	20-40	40-60	60-80	80-100	Total
Andhra Pradesh	7.73	6.42	17.57	27.12	73.86	27.45
Assam	26.68	28.05	23.99	45.23	45.11	33.38
Bihar	4.36	2.48	11.29	49.80	53.50	31.28
Chhattisgarh	8.43	10.27	20.70	34.45	62.64	28.83
Gujarat	0.82	10.03	16.91	30.38	55.11	23.83
Haryana	0.00	5.15	14.65	24.45	34.46	16.30
Jharkhand	9.22	4.25	15.58	45.58	47.61	27.36
Karnataka	6.31	10.29	7.37	26.76	57.86	21.68
Kerela	9.48	15.25	30.59	24.94	82.12	32.57
Madhya Pradesh	2.73	9.00	10.98	27.56	74.94	24.82
Maharashtra	5.38	10.66	18.90	26.72	61.42	25.00
Orissa	5.03	4.84	10.62	16.10	44.15	17.94
Punjab	4.51	14.37	15.29	25.49	38.76	21.36
Rajasthan	9.95	6.32	19.10	31.21	51.92	26.53
Tamil Nadu	6.86	13.58	15.45	26.89	65.34	25.05
Uttar Pradesh	2.27	3.57	12.00	23.32	48.44	20.19
West Bengal	3.64	7.14	13.53	31.23	53.21	19.73
HP, J & K & Uttarakhand	35.31	19.72	50.99	42.07	90.06	48.88
North Eastern States	11.67	18.84	28.49	33.17	38.14	27.24
Other States & UTs	1.79	12.90	32.25	34.96	70.86	30.20
Total	5.07	9.54	17.69	29.65	56.78	24.73

Note: Age group considered is 18 – 22 years

Source: *As in Table5.1*

**Table 29: Gross Enrollment Rates in Post Higher Secondary Education
by State and Quintile Groups in the Urban Sector: 2004-2005**

States	0-20	20-40	40-60	60-80	80-100	Total
Andhra Pradesh	5.38	12.44	25.69	40.06	70.17	31.76
Assam	11.56	12.13	27.21	25.47	104.08	35.71
Bihar	3.96	8.37	16.33	23.59	59.80	28.14
Chhattisgarh	3.83	13.78	22.21	46.48	103.20	37.40
Gujarat	5.07	6.16	11.12	35.72	47.21	20.47
Haryana	8.55	14.80	19.82	63.03	55.14	35.82
Jharkhand	6.04	12.13	15.73	74.63	54.88	34.46
Karnataka	5.03	6.11	5.67	26.95	57.79	21.20
Kerela	10.17	17.32	31.62	32.95	71.11	31.96
Madhya Pradesh	3.90	7.52	20.20	21.10	55.98	23.70
Maharashtra	4.78	10.54	18.52	39.95	54.01	26.67
Orissa	0.74	4.97	13.74	40.71	56.87	24.21
Punjab	4.33	13.82	24.85	35.76	70.46	30.30
Rajasthan	1.71	5.76	10.45	22.11	57.10	21.02
Tamil Nadu	7.22	10.51	9.45	54.66	64.47	30.71
Uttar Pradesh	2.28	3.62	10.95	27.98	62.38	23.84
West Bengal	1.07	7.75	20.21	39.57	87.56	27.28
HP, J&K & Uttarakhand	5.36	6.46	17.97	39.80	78.63	31.00
North Eastern States	9.55	22.92	28.38	33.09	39.02	27.58
Other States & UTs	11.79	7.67	23.73	53.07	62.07	33.57
Total	4.81	8.67	16.51	37.55	62.16	27.08

Note: Age group considered is 18 – 22 years
Source: *As in Table 1*

In 1999-00 (Table 27), in the bottom quintile the highest GER is reported in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 35.31 percent followed by Assam with 26.68 percent and North Eastern States with 11.67 percent. Other states with enrolment rates higher than the All India level of 5.07 percent are Rajasthan, Kerela, Jharkhand, Chhattisgarh, Andhra Pradesh, Tamil Nadu, Karnataka and Maharashtra. Gujarat with 0.82 percent reports the lowest enrolment rate and Haryana reports a negligible enrolment rate. Among the quintile group 20-40, Assam reports the highest enrolment rate with 28.05 percent, which is much higher than the All India level of 9.54 percent. Next to Assam is Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 19.72 percent and North Eastern States with 18.84 percent. Bihar with 2.48 percent only reports the lowest enrolment rate. Among quintile groups 40-60 the highest enrolment rate is reported in Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) with 50.99 percent, which is again much higher than the All India level of 17.69 percent. Next are Other States and Union Territories with 32.25 percent, Kerela with 30.59 percent and North Eastern States with 28.49 percent. Karnataka with 7.37 percent reports the lowest enrolment rate. Among quintile groups 60-80 the highest enrolment rate is reported in Bihar with 49.80 percent, followed by Jharkhand with 45.58 percent and Assam with 45.23 percent. Other states with enrolment rates higher than the All India level of 29.65 percent are Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Other States and Union Territories, Chhattisgarh, North Eastern States, West Bengal, Rajasthan and Gujarat. Orissa with 16.10 percent reports the lowest enrolment rate. Among the top quintile group 80-100, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand) reports the highest enrolment rate with 90.06 percent followed by Kerela with 82.12 percent and Madhya Pradesh with

74.94 percent. Other states with enrolment rates higher than the All India level of 56.78 Percent are Andhra Pradesh, Other States and Union Territories, Tamil Nadu, Chhattisgarh, Maharashtra and Karnataka.

In 2004-05 (Table 28) as in the previous two rounds, in the urban sector there are wide disparities in the enrolment rates. Among the least income group, Other States and Union Territories reports the highest enrolment rate with 11.79 percent which is much higher than the All India level of 4.81 percent. Next is Assam with 11.56 percent and Kerela with 10.17 percent. Orissa reports low GER which is below 1 percent. Among the next quintile group, 20-40 percent, highest enrolment rate is reported in North Eastern States with 22.92 percent, followed by Kerela with 17.32 percent. Uttar Pradesh with 3.62 percent shows the lowest enrolment rate. In the next quintile group 40-60, Kerela again reports the highest enrolment rate with 31.62 percent, which is higher than the All India level of 16.51 percent. Karnataka with 5.67 percent reports the lowest enrolment rate. Among the next quintile group 60-80 the highest enrolment rate is reported in Jharkhand with 74.63 percent followed by Haryana with 63.03 percent and Tamil Nadu with 54.66 percent. These states report impressive enrolment rates that are much higher than the All India level of 37.55 percent. However, the lowest enrolment rate is reported in Madhya Pradesh with 21.10 percent. Among the highest income group, i.e. quintile group 80-100 the highest enrolment rate is reported in Assam with 104.08 percent followed by Chhattishgarh with 103.20 percent and West Bengal with 87.56 percent. Other states with enrolment rates higher than the All India level of 62.16 percent are Bihar, Himachal Pradesh (including Jammu & Kashmir and Uttarakhand), Andhra Pradesh, Tamil Nadu, Kerela and Punjab. North Eastern States with 39.02 percent report the lowest enrolment rate.

Summing up, the tabulation of GER by economic classes emphasizes the role of economic status in determining enrolment in post-higher secondary levels. The non-poor, especially the top 20 percent of the population, have a GER that is close to 100 percent and even above 100 percent in some cases. The poor, on the other hand, show very low enrolment rates. Kerela stands out among all the states. It reports substantial GER even among the poor in the rural areas. However, the GER also depends on the type of economic activity that is prevalent in a particular state. For example, Punjab, a predominantly agricultural state, reported a GER that is lower than the all India average even in case of top quintiles in 1993-94 and 1999-00. However, by 2004-05 the situation seems to have changed. The top quintile in the urban sector of Punjab increased its GER from 41.97 percent in 1993-94 to 70.46 percent in 2004-05.

Enrolment in Post – Higher Secondary Education by Social Groups

In this section we discuss the enrolment rates in post-higher secondary levels in the states cross classified by the three broad social groups – STs, SCs and 'Others'. The gross enrolment rates for the age group 18 – 22 years in this regard are reported in Tables 5.30, 5.31 and 5.32 for 1993-94, 1999-00 and 2004-05 respectively. While comparing the GER across social groups in different states we face the problem of sample size since certain social groups are concentrated in some states and are hardly found in other states. The number of households surveyed by social group and state is reported in Table 32 for the year 2004-05. The sample size distribution in the other two rounds is very similar to the 61st round distribution. For the sake of completeness we have reported the GERs for all the three social groups in all the states. However, the sample size has to be kept in mind for meaningful comparison.

In general, the enrolment rates of STs and SCs are much lower than those of 'Others'. In 2004-05, at the aggregate level, the GER of STs is 8.44 percent, that of SCs 9.50 percent and that of 'Others' 17.32 percent. Thus there are wide disparities between the enrolment of 'Others' and the two backward social groups. However, the level of disparities greatly differs across all the states.

**Table 30: Gross Enrollment Rates in Post Higher Secondary Education
by State, Social Group, Poor and Non Poor: 1993-94**

States	Poor				Non Poor				Total			
	ST	**SC**	**Others**	**Total**	**ST**	**SC**	**Others**	**Total**	**ST**	**SC**	**Others**	**Total**
AP	0.00	5.38	6.11	5.44	2.93	3.32	8.91	7.67	2.33	3.78	8.44	7.27
Assam	4.00	5.11	5.09	4.95	2.94	7.57	14.95	12.90	3.36	6.64	11.47	10.04
Bihar	0.00	4.07	4.28	4.16	2.97	5.66	18.86	16.90	0.88	4.61	12.16	10.47
Chhattisgarh	2.38	0.00	7.85	4.41	3.35	3.58	14.10	9.39	2.87	2.36	12.06	7.50
Gujarat	0.27	0.40	3.82	2.28	4.73	19.41	16.43	15.02	3.48	11.91	14.35	12.33
Haryana	31.42	0.00	2.72	2.34	0.00	5.64	14.42	12.78	17.75	3.73	12.60	10.70
Jharkhand	0.23	1.43	2.58	1.54	20.34	11.74	23.11	21.20	7.77	5.83	15.02	11.68
Karnataka	8.83	3.29	3.92	4.25	2.75	7.63	13.78	12.24	4.89	5.89	11.16	9.90
Kerela		3.85	6.63	6.29	34.47	1.52	21.26	19.84	34.47	2.27	17.97	16.70
M P	0.42	1.72	5.25	3.25	1.81	5.77	12.17	9.83	1.11	3.94	10.19	7.50
Maharashtra	2.13	3.05	5.09	4.52	9.25	16.21	19.02	18.18	6.23	10.92	15.23	14.15
Orissa	0.56	0.65	4.90	2.63	6.11	1.90	15.49	11.69	2.61	1.37	11.96	7.92
Punjab	0.00	0.00	2.56	1.07	1.74	2.95	11.96	9.23	1.61	2.49	11.45	8.53
Rajasthan	3.63	2.90	1.92	2.50	1.72	5.12	10.73	9.07	2.33	4.24	9.24	7.60
Tamil Nadu	0.00	0.75	3.48	2.67	12.69	5.73	16.37	14.21	7.91	3.80	12.62	10.59
Uttar Pradesh	0.00	1.10	2.70	2.19	0.76	4.17	12.64	11.22	0.48	2.62	9.60	8.08
West Bengal	1.64	0.61	1.83	1.39	1.76	5.23	12.67	10.33	1.70	3.52	9.95	7.66
HP, J & K & Uttarakhand	0.00	0.84	1.16	0.99	20.12	3.33	16.51	14.04	12.88	2.59	14.11	11.51
North Eastern States	1.97	0.00	6.72	4.47	8.87	9.11	16.06	12.42	7.97	7.82	14.53	11.25
Other States & UTs	0.29	0.00	5.49	2.65	6.14	14.50	32.50	29.24	5.19	10.42	30.81	26.48
Total	1.61	1.80	3.98	3.19	5.44	5.96	14.91	12.92	3.83	4.27	12.04	9.99

Note: (a) Age group considered is 18 – 22 years (b) a blank implies no observation

Source: *As in Table 1*

In Andhra Pradesh in 2004-05, STs have lower GER of 11.44 percent. The GER of SCs was 14.97 percent and that of 'Others' 16.2 percent. We observe substantial improvement in the enrolment of all three social groups over the years. During the period 1993-94 to 2004-05, the GER of STs increased from 2.33 percent to 11.44 percent, the GER of SCs increased from 3.78 percent to 14.97 percent and the GER of 'Others' increased from 8.44 percent to 16.2 percent.

The picture is quite different in Assam. In this state during the period under consideration, the GER of STs increased from 3.36 percent in 1993-94 to 8.32 percent in 2004-05. On the other hand, SCs experienced a decline from 6.64 percent to 5.49 percent. The GER in case of 'Others' declined marginally from 11.47 to 10.81 percent.

In Bihar, the GER of SCs was about one-third the GER of 'Others' in 1993-94. The level of disparity remained the same in 2004-05. Both SCs and 'Others' experienced a decline in the GER to some extent. The sample size of STs in Bihar is too small for a meaningful comparison.

**Table 31: Gross Enrollment Rates in Post Higher Secondary Education
by State, Social Group, Poor and Non Poor: 1999-00**

States	Poor				Non Poor				Total			
	ST	SC	Others	Total	ST	SC	Others	Total	ST	SC	Others	Total
Andhra Pradesh	0.00	2.16	5.79	4.18	2.71	5.22	14.45	11.99	1.80	4.66	13.22	10.72
Assam	3.31	5.39	2.03	2.61	10.76	14.24	17.10	15.83	7.25	11.24	11.16	10.55
Bihar	0.00	0.09	1.18	0.84	19.94	3.28	11.37	10.19	10.94	1.38	7.47	6.16
Chhattisgarh	1.89	0.73	2.97	2.20	6.19	7.88	17.33	13.00	4.41	5.15	13.10	9.29
Gujarat	2.01	0.00	0.61	0.93	6.71	13.36	14.20	13.22	5.34	10.74	12.83	11.51
Haryana	0.00	0.00	0.50	0.20	0.00	5.39	13.72	12.06	0.00	3.98	12.99	10.80
Jharkhand	0.87	2.84	1.57	1.50	3.76	9.15	17.56	13.74	2.16	6.67	12.28	8.89
Karnataka	2.89	2.23	3.84	3.33	5.54	7.81	11.58	10.56	4.35	6.13	9.96	8.78
Kerela	0.00	4.09	6.94	6.36	12.64	9.39	26.49	24.29	10.32	8.10	22.81	20.80
Madhya Pradesh	0.41	1.90	4.22	2.59	37.16	7.62	15.40	18.19	18.73	5.03	12.08	12.44
Maharashtra	4.95	5.31	5.50	5.38	8.66	16.79	21.11	19.58	7.27	12.85	17.90	16.16
Orissa	0.88	2.55	2.04	1.78	7.36	8.92	17.60	14.69	3.35	5.85	12.44	9.24
Punjab		0.91	6.45	2.77	0.00	5.84	18.02	13.31	0.00	5.09	17.43	12.36
Rajasthan	0.00	5.34	4.35	3.81	6.40	7.45	13.25	11.30	5.08	6.97	11.98	10.04
Tamil Nadu	2.96	3.99	4.29	4.15	0.37	7.65	20.95	17.69	1.63	6.42	17.20	14.20
Uttar Pradesh	0.00	1.63	2.71	2.35	4.00	7.09	14.90	13.25	2.84	4.95	11.73	10.08
West Bengal	4.79	1.81	0.70	1.29	3.14	3.60	12.99	10.02	3.99	3.04	9.20	7.24
HP, J&K & Uttarakhand	0.00	0.00	20.60	13.99	12.98	8.02	21.16	18.98	11.56	6.51	21.11	18.45
North Eastern States	0.48	0.00	5.10	1.82	9.12	3.46	13.34	10.33	8.09	2.96	12.66	9.42
Other States & UTs	0.00	1.14	1.97	1.41	2.10	12.77	27.72	24.34	1.78	10.19	26.46	22.44
Total	1.73	2.11	3.22	2.75	10.78	7.48	16.46	14.45	7.15	5.68	13.46	11.38

Note: (a) Age group considered is 18 – 22 years (b) A blank implies no observation

Source: *As in Table5.4*

In Chhattisgarh there is substantial disparity among the three social groups with STs reporting the lowest GER (4.68 percent), followed by SCs (12.56 percent). 'Others' had the highest GER of 17.41 percent in 2004-05. The GER of all the three social groups increased during the period under consideration. SCs, however, experienced a relatively higher rate of growth of GER. In 1993-94, the GER of STs and SCs were more or less at the same level. By 2004-05, SCs were far ahead of STs as far as enrolment in post higher secondary education is concerned.

In Gujarat the rate of increase is the highest in case of STs from 3.48 percent in 1994-94 to 12.17 percent in 2004-05. On the other hand SCs and 'Others' experienced no improvement in their respective GERs. The enrolment gap between STs and 'Others' was substantially reduced in Gujarat. STs overtook SCs in 2004-05 in terms of post higher secondary enrolment.

In Haryana and Punjab both SCs and 'Others' experienced substantial improvement in their respective GER. The level of disparity, however, did not show any sign of narrowing down. In 2004-05, the GER of 'Others' was about 3-4 times the GER of SCs. The share of STs in the population is very low and hence the sample size for this social group is very small.

In Jharkhand, the most deprived group is the SCs. In 2004-05, the GER of SCs was less than 1 percentage point which declined from 5.83 percent in 1993-94. STs and Others' too experienced a marginal decline in the GER. The disparities between 'Others' and the two backward social groups are huge and increasing with time.

**Table 32: Gross Enrollment Rates in Post Higher Secondary Education
by State, Social Group, Poor and Non Poor: 2004-2005**

State	Poor				Non-Poor				Total			
	ST	SC	Others	Total	ST	SC	Others	Total	ST	SC	Others	Total
Andhra Pradesh	0.00	2.46	4.08	3.03	14.82	16.41	17.14	16.87	11.44	14.97	16.20	15.65
Assam	12.81	0.00	1.64	3.22	7.51	6.60	12.67	11.31	8.32	5.49	10.81	9.96
Bihar	0.00	0.46	1.34	1.03	22.32	4.03	12.51	10.64	16.72	2.65	9.70	7.88
Chhattisgarh	1.53	0.52	2.94	2.05	6.30	15.65	21.89	16.42	4.68	12.56	17.41	12.66
Gujarat	4.77	8.55	1.45	3.43	13.78	11.68	15.10	14.56	12.17	11.31	14.17	13.56
Haryana		1.84	11.46	4.88	24.31	8.01	21.61	18.57	24.31	6.91	21.32	17.65
Jharkhand	1.91	0.91	3.10	2.34	10.29	0.85	18.34	14.19	7.21	0.87	14.47	10.65
Karnataka	1.15	3.77	2.31	2.70	2.41	12.11	15.40	14.07	2.16	9.67	13.44	12.01
Kerela	8.15	13.30	6.94	7.74	20.45	17.13	28.59	27.12	15.16	16.72	26.32	24.96
Madhya Pradesh	1.24	2.19	4.24	2.92	6.22	4.92	13.55	11.17	4.15	4.04	11.61	8.97
Maharashtra	4.33	6.28	4.50	4.90	12.55	20.87	21.94	21.04	9.34	15.75	18.47	17.11
Orissa	0.68	0.00	2.73	1.32	7.07	5.81	13.71	11.38	2.92	3.31	10.85	7.50
Punjab		3.18	1.17	2.28	94.90	8.49	23.32	17.67	94.90	8.11	22.46	16.86
Rajasthan	4.20	4.11	2.60	3.38	12.10	3.72	13.37	11.28	10.21	3.79	12.30	10.22
Tamil Nadu	0.00	3.42	6.13	5.25	38.46	16.72	20.98	20.20	33.25	14.03	19.05	18.01
Uttar Pradesh	6.00	2.86	2.16	2.38	6.15	8.35	17.32	15.52	6.11	6.64	14.06	12.41
West Bengal	0.00	0.50	0.64	0.52	20.19	6.87	17.85	15.26	12.55	5.50	14.59	12.17
HP, J&K & Uttarakhand	19.14	2.59	7.39	6.39	17.73	12.95	22.63	20.71	18.01	10.94	21.36	19.13
North Eastern States	0.30	0.00	0.27	0.23	9.35	4.78	13.95	10.43	8.78	3.95	12.32	9.47
Other States & UTs	16.50	9.60	5.79	8.15	27.20	15.60	38.21	32.95	25.70	14.28	36.17	30.36
Total	2.29	2.80	2.92	2.80	10.89	10.28	18.14	16.15	8.09	8.40	15.68	13.57

Note: (a) Age group considered is 18 – 22 years (b) a blank implies no observation

Source: *As in Table5.1*

Karnataka is another state with glaring disparities among the three social groups with STs at the bottom of the hierarchy. The GER of STs declined from 4.89 percent to 2.16 percent, that of SCs increased from 5.89 percent to 9.67 percent and that of 'Others' increased from 11.16 percent to 13.44 percent during the period under consideration. Thus the disparities have increased over the years.

In Kerela, to begin with, the GER of SCs was only 2.27 percent in 1993-94. In 2004-05, it increased tremendously to 16.72 percent. 'Others' also improved their GER significantly from 17.97 percent to 26.32 percent. Thus, the disparity between SCs and 'Others' is still substantial but narrowing down. The sample size of STs is not sufficient to draw valid conclusion.

Madhya Pradesh seems to be a stagnant state as far as enrolment in higher education is concerned. Further, the rates for all the social groups continue to be below the all India average. There is not much change in the GER during the period 1993-94 to 2004-05 except in case of STs where the GER improved from 1.11 percent to 4.15 percent. With no improvement in the GER of SCs, the disparity between STs and SCs disappeared. But significant disparities remain between 'Others' and the two backward social groups.

In Maharashtra, STs increased their GER from 6.23 percent to 9.34 percent, SCs from 10.92 percent to 15.75 percent and the GER of 'Others' improved from 15.23 percent to 18.47 percent. Thus SCs experienced the highest rate of increase in GER during the period under consideration. STs continued to be the most deprived group in Maharashtra.

The situation in Orissa shows little improvement over the years. While STs and SCs experienced marginal increase in the enrolment rate, 'Others' exhibited a decline of about 1 percentage point.

The relative position of the social groups in Rajasthan has changed over the years. In 1993-94 STs had the lowest GER followed by SCs. STs improved their enrolment substantially during the period under consideration. On the other hand, SCs experienced a decline. Therefore the enrolment gap between STs and 'Others' was reduced to a great extent. In 2004-05, the GER of STs was 10.21 percent and that of 'Others' 12.30 percent. SCs had the lowest GER with 3.79 percent only.

The situation in Tamil Nadu is similar to that in Kerela. SCs increased their GER from 3.80 percent to 14.03 percent. 'Others' exhibited an improvement from 12.62 percent to 19.05 percent during the period under consideration. Therefore, disparities are still substantial, but narrowing down, between SCs and 'Others'.

In Uttar Pradesh both SCs and 'Others' reported enrolment rates that are lower than the all India level. Both the social groups have improved their status of enrolment to some extent over the years. The disparities are however substantial. In 2004-05, the GER of SCs was about half of the GER of 'Others'.

In West Bengal the GER of STs surpassed that of SCs in 2004-05, whereas in 1993-94 STs were worse-off than SCs. The level of disparity between STs and 'Others' was reduced to a great extent over the years. On the other hand, SCs appear to be the most disadvantaged group in 2004-05.

In the three hilly states of Himachal Pradesh, Jammu & Kashmir and Uttarakhand SCs have the lowest GER which is substantially lower than the GER of STs or 'Others'. STs and 'Others' have almost the same level of GER. The relative position of and the disparities among the three social groups has not changed over the years.

In the seven North Eastern States taken together (including Sikkim and excluding Assam), the enrolment rates of STs and SCs were almost the same in 1993-94. The GER marginally increased in case of STs from 7.97 percent in 1993-94 to 8.78 percent in 2004-05. However, during the same period, SCs experienced a decline in GER from 7.82 percent to 3.95 percent. The GER of 'Others' also declined from 14.53 percent to 12.32 percent.

In Other States and UTs the GER of STs improved tremendously from 5.19 percent in 1993-94 to 25.70 percent in 2004-05. SCs improved their GER from 10.42 percent to 14.28 percent during the same period. 'Others' also increased their GER from 30.81 percent to 36.17 percent.

The above discussion emphasizes the diversity that is there in India. In all the states the GER of 'Others' is invariably higher than the GER of STs or SCs. However, all the social groups have not experienced change in post higher secondary enrolment in the same direction or to the same degree. The level of disparities among the social groups narrows down in some states, widens in others and remains constant in a few states. In many states, however, STs appear to have improved their situation to a much greater extent compared to SCs.

In Tables 5.30, 5.31 and 5.32 where we report the GER for the age group 18 – 22 years by social groups, we have also classified the social groups into broad economic classes – the poor and the non-poor. At the aggregate level, we observe that the increase in GER over the years is due to the increase of the GER in case of the non-poor. The GER of the poor, declined from 3.19 percent in 1993-94 to 2.80 percent in 2004-05. The GER of the poor STs improved marginally from 1.61 percent to 2.29 percent, the GER of poor SCs improved from 1.80 percent to 2.80 percent. On the other hand, the GER of poor 'Others' declined from 3.98 percent to 2.92 percent during the period under consideration.

The disparities in post higher secondary enrolment among the social groups in case of poor persons are almost non-existent in several states. For instance in 2004-05, in Uttar Pradesh, West Bengal and North Eastern States,

the disparities among the poor classified by social groups are not observed. Poor STs in Assam, however, reported an intriguingly high GER of 12.81 percent.

States where 'Others' exhibited higher enrolment rates among the poor are Andhra Pradesh, Bihar, Chhattisgarh, Haryana, Jharkhand, Madhya Pradesh, Orissa and Tamil Nadu. Nevertheless, even in these states the GER of poor persons belonging to the so called forward castes cannot be said to be significantly better than the GER of the two social groups that are considered as backward.

Among the non-poor the GER has increased in case of all social groups to more or less the same extent. Therefore, the level of disparities remains more or less the same during the period 1993-94 to 2004-05. But there are wide variations across the states in this regard.

In 2004-05 the enrolment gap between SCs and 'Others' among the non-poor is still huge and significant in all states. Andhra Pradesh and Maharashtra are exceptions where the GER of SCs is almost at the same level as that of 'Others'. In many states like Assam, Gujarat, Jharkhand, Orissa, Rajasthan, West Bengal, the three hilly states of Himachal Pradesh, Jammu & Kashmir and Uttarakhand, the North Eastern States and Other States and UTs, the post higher secondary enrolment rates of STs are higher than those of SCs. In Rajasthan, West Bengal and the three hilly states of the Himalayan region the GER of STs is more or less at the same level with the GER of 'Others'. It is only in case of Andhra Pradesh, Chhattisgarh, Karnataka, Maharashtra and Orissa that the GER of STs is lower than that of SCs (states with small sample size of STs, namely, Bihar, Haryana, Kerela, Punjab, Tamil Nadu and Uttar Pradesh are not considered here). The GER of 'Others' among the non-poor is in most cases higher than the GER of STs or SCs.

Summing up, the tabulation of GER by social groups and economic classes shows among the non-poor, STs seem to be in a better position than SCs in most states. Therefore, caste plays a role in hindering the enrolment in post higher secondary levels for the scheduled castes. However, among the poor the enrolment rates are very low, show very little improvement over the years and do not show much variation across the social groups.

Conclusion

In this section we have looked at the variation of enrolment in post higher secondary levels across the states cross classified into various categories of sector, gender, means of livelihood, economic classes and social groups. The analysis for religious groups at the state level is not carried out due to the small sample size of certain religious groups in most states.

There are wide variations in post-higher secondary enrolment across states. The disparities among states in enrolment are more pronounced in the rural sector than in the urban sector. All the states have increased their GER over the years. However, the rate of increase is different across states, sector and gender. Varying degree of gender disparity is also observed in all states.

In the rural sector the youth belonging to households that derive their income from agricultural and other types of labour face the greatest disadvantage. In many states the GER in these two household types is negligible. The disparities across states for the same household type are much less in the urban sector compared to the rural sector. Within the same state, however, there are wide disparities across household types with casual labour households exhibiting the lowest GER.

The tabulation of GER by economic classes emphasizes the role of economic status in determining enrolment in post-higher secondary levels. The non-poor, especially the top 20 percent of the population, have a GER that is

close to 100 percent and even above 100 percent in some cases. The poor, on the other hand, show very low enrolment rates. Kerela stands out among all the states. It reports substantial GER even among the poor in the rural areas.

In all the states the GER of 'Others' is invariably higher than the GER of STs or SCs. However, all the social groups have not experienced change in post higher secondary enrolment in the same direction or to the same degree. The level of disparities among the social groups narrows down in some states, widens in others and remains constant in a few states. In many states, however, STs appear to have improved their situation to a much greater extent compared to SCs.

The disparities in post higher secondary enrolment among the social groups in case of poor persons are almost non-existent in many states. Among the non-poor, STs seem to be in a better position than SCs in most states. Therefore, caste plays a role in hindering the enrolment in post higher secondary levels for the scheduled castes.

Determinants of Post-Higher Secondary Enrolment

The main objective of this study is to identify the factors that affect the likelihood of enrolment in post-higher secondary levels. In the earlier sections we observed wide disparities across states, sector, gender, economic classes, social and religious groups. Cross tabulation by various categories suggests that urbanization, attitudes towards gender roles and responsibilities and economic status are some of the important determinants of enrolment in higher education.

In this section we discuss the results of an econometric exercise that was carried out to examine the contribution of different factors to enrolment. For any individual, the decision to go for higher education depends on a set of factors which are household and individual characteristics as well as other external factors. We identify a set of factors (which may not be comprehensive due to data limitations) and find out to what extent each factor contributes to the likelihood of a person being enrolled in post-higher secondary levels by fitting an econometric model.

Further, we also try to find out the reasons for dropping out or discontinuation of studies after higher secondary level for the youth who are not currently attending educational institutions.

The rest of the section is organised as follows. Section 5.2 discusses the results of an econometric exercise. In section 5.3 we analyse the reasons for dropping out after higher secondary level and section 5.4 concludes the section.

Econometric Exercise

In this section we discuss the results of an econometric exercise that was carried out to examine the contribution of different factors to enrolment. We use a *maximum likelihood probit* model that is specially suited for such an analysis.

The available evidence suggests that a youth is enrolled in post-higher secondary education as a result of household specific factors like dependency burden in the household, household assets, education of the parents, location of the household and so on.

Several researchers in recent times have used these factors to determine the contribution of each factor to the probability of household poverty. Similarly, we use an econometric model to determine the contribution of each factor to education enrolment. For calculation of contribution of different factors to enrolment outcome, it is

assumed that a person's enrolment is a random phenomenon affected by a set of factors that could explain the outcome. Based on these considerations, we define a binary variable y that takes values

y=1 if a youth is enrolled in post-higher secondary enrolment

=0 otherwise

This binary variable is then regressed on to a set of explanatory variables that includes various individual as well as household characteristics. Such a specification of an econometric model has been extensively used in the literature. Since the dependent variable is binary, we cannot use least squares method to estimate the coefficients. Instead, one can use maximum likelihood estimation technique to calculate coefficients.

The probit model (the word probit is a contraction of 'probability unit') is one statistical model that is used for discrete or binary models. In this study we have used probit model that allows us to calculate marginal contributions of different household characteristics on the enrolment status of the youth. A probit model is defined as

$$\Pr(y_j \neq 0 \mid x_j) = \Phi(x_j b)$$

where Φ is the standard cumulative normal distribution, and $x_j b$ is called the probit score or index.

The log-likelihood function for probit which is maximized is

$$\ln L = \sum_{j \in S} w_j \ln \Phi(x_j b) + \sum_{j \notin S} w_j \ln \{1 - \Phi(x_j b)\}$$

where w_j denotes the optional weights.

For purpose of estimation, we have used dprobit option from STATA. The dprobit option fits maximum-likelihood probit models and rather than reporting coefficients b_i, where b_i is the *i*th element of b, it reports the change in the probability for an infinitesimal change in each independent, continuous variable and reports the discrete change in the probability for dummy variables. That is, it reports

$$b_i^* = \frac{\partial \Phi(xb)}{\partial x_i}\bigg|_{x=\bar{x}} = \phi(\bar{x}b)b_i \text{ for continuous variables and}$$

$b_i^* = \phi(\bar{x}_1 b) - \phi(\bar{x}_0 b)$ where $\bar{x}_0 = \bar{x}_1 = \bar{x}$ except that the *i*th elements of $\bar{x}_0$ and $\bar{x}_1$ are set to 0 and 1, respectively. dprobit also reports test statistics z_i based on the underlying coefficients b_i.

As mentioned above, the dependent variable is a binary variable assuming value 1 if a person aged between 18 to 22 years and had completed higher secondary level is currently attending educational institutions, zero otherwise. This variable was regressed on the independent variables discussed below.

Pcpl_poor =This variable is binary, 1 if the household per capita expenditure falls below the poverty line as defined by the Planning Commission. Zero otherwise.

Head_edu_below_primary = This variable is binary, 1 if the head of the household is literate but below primary level. Zero otherwise.

Head_edu_primary = This variable is binary, 1 if the head is educated upto primary level. Zero otherwise.

Head_edu_middle = This variable is binary, 1 if the head is educated above primary level and upto middle school level. Zero otherwise

Head_edu_secondary = This variable is binary, 1 if the head is educated upto secondary level. Zero otherwise

Head_edu_higher_secondary = This variable is binary, 1 if the head is educated upto higher secondary level. Zero otherwise

Edu_graduate =This variable is binary, 1 if the head is graduate or above. Zero otherwise.

Scheduled_tribe= This is binary variable. If household belongs to Scheduled Tribe, it is 1. Zero otherwise

Scheduled_caste = This is binary variable. If household belongs to Scheduled Caste, it is 1. Zero otherwise

Muslim = This is binary variable. If household belongs to Muslim religion, it is 1. Zero otherwise

Christian = This is binary variable. If household belongs to Christianity, it is 1. Zero otherwise

Other_religion = This is binary variable. If household belongs to a religion other than Hinduism, Islam or christianity, it is 1. Zero otherwise

Self_emp_non_agriculture = If the main source of income of the household is self employment in non agriculture in the rural sector, this binary variable takes value 1, zero otherwise.

Agricultural_labour = If the main source of income is by Agricultural Labour in the rural areas, this binary variable takes value 1, zero otherwise

Other_labour = If the main source of the income is from other kind of labour income in the rural sector, this binary variable takes value 1, zero otherwise

Self_emp_agriculture = If the main source of the income is the household's own farm the variable takes value 1, zero otherwise

Self_emp = If the main source of the income is from self employment in the urban sector, this binary variable takes value 1, zero otherwise

Regular wage/salary = If the main source of the income is from regular wage/salary earning in the urban sector, this binary variable takes value 1, zero otherwise

Casual_labour = If the main source of the income is from casual labour in the urban sector, this binary variable takes value 1, zero otherwise

Female = If the person is female, variable takes value 1, and is zero otherwise.

ST-Muslim, ST-Christian and ST-Other Religion, SC-Muslim, SC-Christian and SC-Other Religion are interactive dummies. The reference groups (control group) in the estimation are illiterates for education of heads of households, Other Castes for caste, Hinduism for religion, Other (more than one source or diverse income sources) means of livelihood for means of livelihood, ST_Hindu for interactive religion*ST variable

and SC_Hindu for interactive religion*SC variable. We use dummies for state in the regression to control for the location.

The estimated marginal effects at all India level are reported in Table 33 for the rural sector and in Table 34 for the urban sector. We summarise below the results for the various factors.

Poverty: In the rural sector, the probability of a poor person being enrolled in post-higher secondary education is around 3.47 percent less than the probability for a non-poor person in 2004-05. The value of the marginal effects increased from 1.25 percent in 1993-94 to 2.03 percent in 1999-00 and to 3.47 percent in 2004-05.

In the urban sector, poverty assumes greater importance in adversely affecting enrolment. From 5.87 percent in 1993-94, the absolute value of the marginal effect increased to 7.07 percent in 1999-00 and further to 10.96 percent in 2004-05. In other words, compared to a youth coming from a non-poor household, a poor urban youth is 11 percent less likely to be enrolled in post-higher secondary level.

Table 33: Results of Maximum Likelihood Probit Model in the Rural Sector of India

Dependent Variable: Current Enrolment in Post-higher Secondary Educational Institutions

Independent Variables	1993-94		1999-00		2004-05	
	dF/dx	z	dF/dx	z	dF/dx	z
pcpl_poor*	-0.0125	-8.26	-0.0203	-10.66	-0.0347	-11.61
head_edu_below_primary*	0.0167	7.00	0.0138	5.07	0.0157	4.49
head_edu_primary*	0.0261	9.37	0.0208	6.93	0.0247	7.10
head_edu_middle*	0.0413	12.70	0.0318	10.23	0.0494	12.82
head_edu_secondary*	0.0821	17.28	0.0899	19.34	0.0844	15.87
head_edu_higher_secondary*	0.1312	17.11	0.1258	17.75	0.1945	24.03
head_edu_graduate*	0.1981	20.24	0.1869	19.79	0.2178	21.85
scheduled_tribe*	-0.0045	-1.84	0.0021	0.70	0.0055	1.35
scheduled_caste*	-0.0051	-2.81	-0.0015	-0.75	-0.0073	-2.75
muslim*	-0.0100	-5.05	-0.0143	-6.31	-0.0136	-4.50
christian*	0.0169	3.21	0.0186	2.91	0.0165	1.75
other_religion*	0.0058	1.19	0.0269	3.39	-0.0059	-0.67
st_muslim*	0.0360	1.04			0.0175	0.41
st_christian*	-0.0143	-2.22	-0.0100	-1.11	-0.0040	-0.26
st_other*			0.0096	0.72	-0.0221	-1.16
sc_muslim*			0.0228	0.78	0.0646	2.22
sc_christian*	-0.0173	-1.10	0.0002	0.02	0.0490	2.04
sc_other*	-0.0126	-1.25	-0.0077	-1.12	-0.0058	-0.53
self_emp_non-agriculture*	-0.0101	-5.72	-0.0162	-8.97	-0.0264	-10.06
agricultural_labour*	-0.0188	-10.00	-0.0316	-15.41	-0.0439	-15.46
other_labour*	-0.0151	-7.54	-0.0209	-10.72	-0.0366	-13.38
self_emp_agriculture*	-0.0118	-6.86	-0.0175	-9.90	-0.0230	-8.48
female*	-0.0299	-20.92	-0.0187	-13.01	-0.0288	-15.03
No. of observations	36101		35958		39547	
Log likelihood ratio	-4780		-5452		-8019	
Pseudo R^2	0.2012		0.1995		0.1613	

Notes: 1. Df/dx are marginal effects, i.e., the change in probability of being enrolled in post-higher secondary education with a one-unit change in the right side variable. z is the test of the underlying coefficient being 0. A "*" implies the variable is dichotomous. Regression is done with state dummies and age restricted to 18 – 22 years, both inclusive.

2. The coefficients significant at 95% confidence interval are highlighted in bold.

Source: *Estimation employs unit record data from the National Sample Survey on Employment and Unemployment during 50th (1993-94), 55th (1999-00) and 61st (2004-05) rounds.*

Education of the head of the household: Controlling for other things, the education of the head of the household plays an important part in enrolment in higher education. We observe that the marginal effects are positive and systematically increase with the increase in education. In the rural sector a youth belonging to a household headed by a graduate or post-graduate has 22 percent more probability to go for higher education compared to a youth coming from a household headed by an illiterate in 2004-05. The corresponding figure in the urban sector is 35 percent.

Caste/Tribe: In the rural sector, the results for scheduled tribe are not statistically significant in all the three years under consideration. For scheduled castes the results are significant in 1993-94 and 2004-05. However, the marginal effects are very small at less than 1 percent. For instance, in 2004-05, an SC person is 0.7 percent less likely to be enrolled in post-higher secondary education compared to a person belonging to 'Others' or forward caste.

In the urban sector, the marginal effects for STs are statistically significant in 1993-94 and 1999-00. An ST person has 4 percent less probability of higher education enrolment in 1993-94 and 1999-00 compared to 'Others'. In 2004-05 the result is not statistically significant. For an SC person, the probability is lower by about 5.1 percent in 1993-94, 4.4 percent in 1999-00 and 4.93 percent in 2004-05.

Table 34: Results of Maximum Likelihood Probit Model in the Urban Sector of India

Dependent Variable: Current Enrolment in Post-higher Secondary Educational Institutions

Independent Variables	1993-94		1999-00		2004-05	
	dF/dx	z	dF/dx	z	dF/dx	z
pcpl_poor*	-0.0587	-10.44	-0.0707	-11.32	-0.1096	-14.83
head_edu_below_primary*	0.0540	4.79	0.0313	2.73	-0.0221	-1.94
head_edu_primary*	0.0792	6.90	0.0405	3.60	0.0157	1.51
head_edu_middle*	0.1322	11.50	0.1139	10.30	0.0623	6.26
head_edu_secondary*	0.2618	20.77	0.2111	18.37	0.1543	14.39
head_edu_higher_secondary*	0.4151	26.94	0.4032	27.67	0.2661	20.41
head_edu_graduate*	0.5102	33.29	0.4730	33.87	0.3523	28.52
scheduled_tribe*	-0.0421	-3.11	-0.0401	-2.78	-0.0045	-0.27
scheduled_caste*	-0.0510	-6.93	-0.0440	-6.29	-0.0493	-6.66
muslim*	-0.0632	-10.15	-0.0691	-11.04	-0.0715	-10.02
christian*	0.0053	0.36	0.0030	0.22	-0.0247	-1.44
other_religion*	0.0302	2.57	0.0296	2.14	0.0241	1.56
st_muslim*	-0.0713	-0.98	0.0384	0.37	-0.0241	-0.67
st_christian*	0.1061	1.83	-0.0157	-0.43	0.0805	0.98
st_other*			-0.0782	-1.94	-0.0967	-1.56
sc_muslim*			-0.0905	-1.26	0.1813	1.39
sc_christian*	0.0973	1.42	0.0296	0.59	0.1046	1.86
sc_other*	0.0155	0.27	0.0023	0.08	0.0751	2.30
self_emp*	-0.1088	-15.97	-0.1023	-14.36	-0.1234	-14.63
regular_wage/salary*	-0.0995	-14.89	-0.0794	-11.21	-0.1022	-12.38
casual_labour*	-0.1185	-15.65	-0.1234	-15.27	-0.1669	-18.64
female*	-0.0273	-6.44	-0.0035	-0.81	-0.0034	-0.69
No. of observations	22395		24187		21238	
Log likelihood ratio	-7723		-8913		-8424	
Pseudo R^2	0.2408		0.2273		0.2061	

Notes: As in Table 33.

Source: *As in Table5.33.*

These marginal effects support our findings discussed in section 3. We found that social groups that have lower GERs at the aggregate level are found not to be lagging behind in enrolment in higher education when we decompose the population into economic classes. It is evident that, controlling for other things, caste or tribe is not a major determinant of enrolment in post-higher secondary levels. Specifically, being a member of a scheduled tribe is not a big disadvantage as far as enrolment is concerned. However, being a member of a scheduled caste adversely affects enrolment to some extent.

Religion: As noted in Section 3, religion plays a role in promoting education to some extent. The marginal effects also support this statement. Controlling for location and other factors, a Muslim youth has about 1.4 percent less probability of enrolment compared to Hindus in the rural sector in 2004-05. The corresponding figure in the urban sector is 7 percent.

Christians have higher probability of enrolment in post-higher secondary education by 2 percent in the rural sector in 1993-94 and 1999-00 compared to Hindus. The result is not statistically significant in 2004-05. In the urban sector, the marginal effects are not statistically significant in all the three rounds of survey considered here.

Means of Livelihood: The source of income of a household is an important determinant of the economic status of household and hence affects the likelihood of enrolment in higher education. We observe that in the rural sector the marginal effects for means of livelihood are negative. The control group is the household type categorized as Others or Mixed income. Compared to this household type, youth belonging to households that derive their income from self employment in agriculture or non-agriculture, agricultural or other rural labour have lower probability of enrolment. The absolute values of the marginal effects also increase with time. The group that suffers the biggest advantage is the households that derive their income mainly from agricultural labour. In 2004-05, the youth belonging to this household type have 4.4 percent less probability of being enrolled in post-higher secondary education.

In the urban sector, means of livelihood play an even greater role in determining the status of enrolment. In 2004-05, compared to mixed income group, self employed households have 12 percent lower probability of sending their members for higher education. For regular wage/salary earning households, the probability is lower by 10 percent and for casual labour households it is lower by 17 percent. As in the case with the rural sector, the absolute values of the marginal effects are increasing with time.

Gender: Controlling for other factors, females are less likely to go for higher education. In 2004-05, the probability is lower for females by about 3 percent in the rural sector and by 0.3 percent in the urban sector compared to males. In the urban sector especially, the marginal effect is declining. Put another way, the gender divide in enrolment is decreasing in the urban sector. The same however, cannot be said about the rural sector.

Why Some Youth Discontinue Their Studies after Higher Secondary Level?

In the above section we identify some factors and find out to what extent they affect the likelihood of a person's being enrolled in post-higher secondary education. The determinants of post-higher secondary enrolment can be studied from another angle also. In this section we look at the reasons that stop the youth from continuing their education beyond higher secondary level.

The NSS data contain information on the current attendance in educational institutions for the persons aged upto 30 years. For those who are not currently attending, questions are asked to find out the reasons for dropping out or discontinuation. Dropping out is stopping a course of study without completing it while

discontinuation is to stop after successfully completing a level. We do not make a distinction between the two for the purpose of this analysis. In Table 35 we report the reasons for dropping out and the percentage distribution of persons aged upto 30 years who have completed higher secondary level of general education but who are not currently enrolled in educational institutions.

In the 61st round, reasons are classified into five categories, namely, (i) school too far, (ii) to supplement household income, (iii) education not considered necessary, (iv) to attend domestic chores and (v) others. In the 55th round, the reasons are grouped in two categories only, (i) to supplement household income and (ii) others. The information is not available in the 50th round.

Table 35 provides important insights into the enrolment decisions of individuals. We note that there is a striking similarity in the pattern of distribution of reasons between the rural and urban sectors. Thus, the households in the rural and urban sectors face more or less the same constraints in deciding whether to send their members for higher education or not. It is easier however for urban households due to the concentration of colleges or higher educational institutions in the towns and cities. However, there are important differences between males and females.

Table 35: Reasons for Dropping out/ Discontinuation of Studies after Higher Secondary Level by Sector and Sex in 2004-05

Reasons for dropping out	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
2004-05									
Institution too far	0.75	2.62	1.51	0.39	1.26	0.82	0.62	2.01	1.24
To supplement household income	68.71	10.55	45.05	74.14	12.81	43.79	70.65	11.55	44.55
Education not considered necessary	5.63	9.82	7.33	4.35	8.35	6.33	5.17	9.17	6.94
To attend domestic chores	2.91	41.29	18.53	1.81	44.54	22.96	2.52	42.73	20.28
Others	21.99	35.73	27.58	19.31	33.04	26.11	21.03	34.54	27.00
Total	100	100	100	100	100	100	100	100	100
1999-2000									
To supplement household income	53.19	11.02	39.61	50.73	8.36	31.35	52.25	9.63	36.00
Others	46.81	88.98	60.39	49.27	91.64	68.65	47.75	90.37	64.00
Total	100	100	100	100	100	100	100	100	100

Notes: The figures are calculated for persons aged upto 30 years with general education level of higher secondary and who were not currently enrolled in educational institutions.

Source: *Special tabulation by the authors using the data on Employment and Unemployment collected by the NSSO during 55th round (1999-00) and 61st round (2004-05).*

For males, about 70 percent drop out or discontinue their studies after higher secondary level in order to supplement household income. 5 percent do not consider education as necessary. About 2 percent drop out to attend domestic chores. The distance of colleges or other institutions of higher learning is not a factor even in the rural areas. Obviously, for those who can afford education the distance does not matter. Thus for males, economic status of the household is the most important determinant of post-higher secondary enrolment.

In case of females, the most important reason for discontinuing studies after higher secondary level is to attend to domestic chores. 43 percent of non-enrolled females do so for this reason. Relatively more females (9 percent) than males (5 percent) consider education as not necessary. Only about 11 percent of females discontinue their studies to take up work to supplement their household income. For 2 percent of non-enrolled females the distance of the institutions acts as a constraint. About 35 percent discontinue their studies for other

reasons. Since information is not available on what are these 'other' reasons, we can only speculate that they could be any reason like marriage or even laziness.

Thus, traditional attitudes towards gender division of labour are still predominant. Men are considered the bread earners and need education and skills to enhance their productivity. Their enrolment in post-higher secondary enrolment is constrained by economic necessity. As we have seen, 70 percent of non-enrolled males are forced to discontinue their education in order to support their households. Women, on the other hand, are considered as the home makers and earning livelihood is not their primary responsibility. As long as these attitudes dominate the Indian collective mindset, we will continue to witness large gender disparities in enrolment in higher education.

In this section we have identified certain factors as determinants of post-higher secondary enrolment and examined to what extent they affect the likelihood of a person being enrolled in higher educational institutions. The most important factor appears to be the economic status of households. The educational level of the head of household also affects the enrolment of the household members. First generation learners seem to be at a disadvantage. This in turn will tend to perpetuate the lower educational status of the household since lower education generally leads to lower earnings and lower economic status again leads to lower educational status. Gender discrimination in enrolment is still prevalent due to the traditional attitudes towards gender roles and responsibilities. Therefore, females have lower enrolment rates than males irrespective of socio-economic classes.

Summary and Conclusion

In this study we have prepared a detailed profile of enrolment of students in the post-higher secondary levels and identified the factors that affect the likelihood of the enrolment. Using the National Sample Survey Organization's 50th, 55th and 61st round Employment and Unemployment survey data, we find out what is the status of post-higher secondary enrolment in India and how does it vary across different states, social castes, religious groups and economic classes. Further, we analyse to what extent the identified factors affect the likelihood of enrolment.

We consider current attendance in graduate and post graduate courses as well as diploma or certificate courses below graduate level and also post graduate diploma/ certificate courses. The enrolment rates are calculated for persons who have completed at least higher secondary level. We have reported the gross enrolment rates and the net enrolment rates for the age groups 18 – 22 years (both inclusive) and 18 – 23 years (both inclusive).

The analysis is carried out in two parts. Firstly, we discuss the status of enrolment at the aggregate level, i.e. all India level. Secondly, we discuss the status of enrolment at the disaggregated level, i.e. state level. Separate analysis is carried out for the rural and urban sectors.

There are large disparities in the enrolment rate between the urban and rural sectors. Urbanization is associated with higher enrolment and less gender disparity in higher education. Large disparities in enrolment are also observed between males and females. However, the gender divide is narrowing down over the years, at least in the urban sector.

The disparity is substantial between the poor and the non-poor. There has been substantial improvement of the enrolment rates during the period 1993-94 to 2004-05. However, this improvement is mainly on account of the substantial increase among the richest sections of the society. For the bottom 20 percent of the population, which roughly corresponds to the population living below the poverty line, the enrolment deteriorated in both the sectors. Therefore, the gap between the poor and the non-poor widens with time.

Among the social groups, STs and SCs have lower enrolment rates than the forward castes. However, at the aggregate level it seems that this is mainly because of higher poverty incidence among STs and SCs. Religion too plays a role in determining the educational status of a person. Christians have enrolment rates that are much higher than other religious groups and also exhibit the lowest gender disparity in enrolment in post-higher secondary education. On the other hand, Muslims have enrolment rates that are lower than Hindus or Christians.

There are wide variations in post-higher secondary enrolment across states. The disparities among states in enrolment are more pronounced in the rural sector than in the urban sector. All the states have increased their enrolment rates over the years. However, the rate of increase is different across states, sector, gender and social groups. Varying degree of gender disparity is also observed in all states. Kerela stands out among all the states. It reports substantial enrolment rates even among the poor in the rural areas. Gender disparity also is much less in Kerela.

Among the three social groups, the GER of 'Others' is invariably higher than the GER of STs or SCs in all the states. However, all the social groups have not experienced change in post higher secondary enrolment in the same direction or to the same degree. The level of disparities among the social groups narrows down in some states, widens in others and remains constant in a few states. In many states, however, STs appear to have improved their situation to a much greater extent compared to SCs.

The disparities in post higher secondary enrolment among the social groups in case of poor persons are almost non-existent in many states. Among the non-poor, STs seem to be in a better position than SCs in most states. Therefore, caste plays a role in hindering the enrolment in post higher secondary levels for the scheduled castes to some extent.

The most important determinant of post-higher secondary education appears to be the economic status of households. Youth from households with vulnerable sources of income generally cannot afford to go for higher education firstly because higher education is expensive and secondly, they have to join the workforce to supplement their household income.

The educational level of the head of household also affects the enrolment of the household members. First generation learners seem to be at a disadvantage. This in turn will tend to perpetuate the lower educational status of the household since lower education generally leads to lower earnings and lower economic status again leads to lower educational status.

Gender discrimination in enrolment is still prevalent due to the traditional attitudes towards gender roles and responsibilities. Therefore, females have lower enrolment rates than males irrespective of socio-economic classes.

An important policy implication that emerges from this analysis is that 'protective discrimination' would be much more effective in upliftment of the backward social groups in general, and in increasing the enrolment in higher education in particular, if it is targeted at the poor sections of the society. Moreover, the poor people belonging to the so called 'forward castes' also need attention and help.

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Chapter 8

Status of Quality in Higher Education Varying Perceptions

Furqan Qamar

There are varying perceptions about quality in higher education. Quality is said to be related to the input parameters. Among other parameters of quality is the lack of infrastructure-physical and human is closely connected with the low quality. Quality control and assurance framework believes that such mechanism will promote quality through transparency and induced actions such as internal quality assurance measures. Thus varying perceptions lay at the root of understanding on quality in higher education. Quality needs to be understood in objective terms to make necessary interventions. Besides the changing context of teaching learning process, the technological breakthrough in communication and the new roles in the context of knowledge economy need to be taken into account to make appropriate interventions.

Excellence, on the other hand, is the striving for the best. Excellence flows out of quality. A critical mass of good quality institutions will only produce excellence. Excellence is the progression to achieve the greatest heights. Excellence, therefore, requires the gravitational pull to attract best talents. Some higher education institutions need to strive for the best in some frontier areas of knowledge. Excellence, therefore, also needs investment in institutions of higher learning.

Quality Status of Universities

Out of 317 universities under the UGC purview only 164 universities are recognised as eligible to receive development grants from the UGC under 2f and 12 B. The remaining 153 universities are not covered simply because they do not meet minimum investment in physical facilities and infrastructure criteria laid down by the UGC to receive its assistance. Out of 164 universities, only 128 universities have got themselves accredited by the National Assessment and Accreditation Council (NAAC) and only 32 percent of them could get A or above level of rating while another 52 percent of them could manage with B or above grade. The remaining 16% universities fall in group 3 having obtained grades C and above [Table 1].

Table 1 Quality Status of Universities

Indicators	Number
Total Number of Universities	369
Number of Universities under UGC Purview	317
Number of Universities eligible to receive UGC Grants	164
Universities with infrastructure deficiencies and not eligible to receive UGC grants though in its purview	153
Universities accredited by NAAC of which Rated as:	128
• A++, A+, A (Group 1)	32%
• B++, B+, B (Group 2)	52%
• C++, C+, C (Group 3)	16%

Quality Status of Different Types of Universities:

Based on the still smaller set of data for 111 universities accredited by the NAAC, the quality of different types of universities was found to be quite variable. It is obviously disquieting that no more than 25% of the central universities are rated A grade or higher, whereas 27% of state universities and 52% of deemed universities are rated A grade or higher. Most of the central, state and deemed universities fall in the medium range. [Table 2].

Table 2: Quality Status of Different Types of Universities As accredited by the NAAC up to 2001

Universities	Group A Universities	Group B Universities	Group C Universities	Total Universities
Total Number of Universities of which:	35 (32%)	58 (52%)	18 (16%)	111 (100%)
Central Universities	1 (25%)	2 (50%)	1 (25%)	4 (100%)
State Universities	23 (27%)	47 (55%)	16 (19%)	86 (100%)
Deemed Universities	11 (52%)	9 (43%)	1 (5%)	21 (100%)

Assuming that a similar situation prevails in all other universities that are eligible to receive the UGC grants, the quality status of all universities would be as under [Table 3]. As can be seen from the table that greatest challenge in terms of number is to upgrade the quality of state universities. 23 state universities under group C and 67 state universities under group B need to upgrade quality. Besides the issue of upgradation of quality of universities which are so far not covered under 2f and 12 B is another important dimension of the problem.

Table 3: Quality Status of Different Types of Universities Projected for all Universities that receive UGC Grants

Universities	Group A Universities	Group B Universities	Group C Universities	Total Universities
Total No. of Universities of which	52	85	26	164
Central Universities	5	9	5	18
State Universities	33	67	23	121
Deemed Universities	13	11	1	25

Determinants of Quality in Universities:

Statistical analysis revealed that the quality of a university bears significant relationship (based on quadratic regression equation) with such parameters as:

   (a) *Age of the University – which is indicative of the cumulative investment in physical facilities. Infrastructure and human resources;*

   (b) *Number of departments in the university – which is indicative of the size of the university in terms of students and staff and administrative efficiency;*

   (c) *Number of teachers in each department of the university – which is indicative of the size of the most critical factor in the teaching-learning process;*

   (d) *Proportion of the filled up teaching positions – which is indicative of the actual size of the most critical factor in the teaching-learning process;*

   (e) *Proportion of teachers with PhD as highest qualification – which is indicative of the quality of teaching staff and has a bearing on the research potential of the universities;*

(f) Number of books and journals in the library – which is indicative of the cumulative investment in learning resources available with the university;

Above factors were found to be explaining nearly 42.5% variation in the quality of the university in each case.

Quality Gaps in Universities – An Indication of Sustained Under-Investment:

Although, even the best rated universities fall short of the required level of investment in physical facilities and human resources, we can take their level of age and size as benchmark. The quality gaps may be defined in certain sense as the difference between the benchmark value and the average value of all universities on certain parameters such as age, number of departments, sanctioned faculty positions, number of filled up faculty position per university etc, where the benchmark is assumed to be as in A grade universities. These benchmarks juxtaposed by the average actual positions of universities are given in Table 4 below. On this criterion there remains a huge quality gap, particularly on account of faculty positions, sanctioned as well as filled up positions, number of faculty members with Ph D. and number of books in the library. Quality gaps in this case on indicated parameters show the result of huge underinvestment.

Table 4: Determinants of Quality and Gaps in Each of the Universities

Parameters	Average of All Universities	Benchmarks (as in A Grade Universities)	Quality Gap
Number of Departments Per University	29	34	5
Age of the University in years (as in 2004)	44	51	7
Number of Sanctioned Faculty Positions per university	287	432	145
Number of filled up faculty position per university	220	329	109
% of faculty positions vacant	25%	0	0
Number of Faculty members with PhD	158	432	274
% of teachers without PhD	24%	0	0
Number of Teachers per Department per University	8	10	2
Number of Books in Library	288,913	352,886	63973

Quality Status of Colleges:

Out of 14,400 colleges that are under the UGC purview as per its mandate, only 6,109 colleges are recognised under section 2(f) of the UGC Act. The remaining 9,875 colleges are not recognised by the UGC because they do not presumably meet the minimum criteria of physical facilities and infrastructure. So far 2956 colleges were assessed by the NAAC as on 31st December 2006. [Table 5].

Table 5 Quality Status of Colleges (as on 31.12.2006)

Indicators	Number
Total number of Colleges	18,064
Number of Colleges under UGC Purview	14,400
Colleges recognised u/s 2f	6,288
Colleges recognised u/s 12b	5,625
Colleges with presumably infrastructure deficiencies and thus not recognised and funded by the UGC, though under its purview	9,875
Colleges accredited by NAAC of which	2,956

Determinants of Quality in Colleges:

As was the case with the universities, the number of teachers, the student-teacher ratio, availability of permanent full time teachers, number of books and journals, number of computers and certain level of physical facilities available with the colleges were found to be the major determinants of quality.

Student - Teacher Ratio:

The situation with respect to student teacher ratio as indicated by NAAC shows an uneven distribution among high and low-grade colleges. For example student-teacher ratio in A grade colleges is 20.4, whereas it is as high as 28.5 in all C grade colleges. The student-teacher ratio by permanent teachers is 29.8 in A grade colleges. It goes up to 38 in B grade colleges. It clearly suggests that there is a shortage of permanent teachers in even high-grade colleges. The availability of highly qualified teachers is the most important index of quality. There is a need to reverse this situation by recruiting permanent teachers in the colleges. [Table 6]

Table 6: Distribution of student teacher ratio in the NAAC accredited Colleges

Indicators	NAAC Grades					
	A & Above	B++ & B+	B only	C++,C+ & C	Non-Accredited	Total
No. of Sample Colleges	110	547	298	233	285	1473
STR (Student Teacher ratio)	20.4	31.8	28.6	28.5	25.2	25.0
STR by Permanent teachers	29.8	31.8	38.1	35.8	35.6	33.5

Quality Gaps in Colleges:

The identified quality gaps in terms of academic infrastructure are given below in Table 7. It may be seen that the availability of qualified permanent teacher is the most critical variable in the quality gap, other factors being books and the computer.

Table 7: Average Quality Gaps in the Colleges with respect to Academic & Human Resources

	Average of all Colleges	Benchmark	Quality Gaps
STR (Student Teacher ratio)	27	20	-6
STR by Permanent teachers	33	30	-3
Total No. of Teachers per college	47	78	31
Total number of Permanent Teachers per college	39	54	15
Total number of other Teacher	9	25	16
Proportion of Teachers without M.Phil or PhD	57%	0	57%
No of Books per college	11966	15215	3249
No. of Journals per college	13	22	9
Students per Computer	229	145	-84
Total number of computers	6	11	5

It may be summed up that the quality of higher education is a function of infrastructure, availability and recruitment of good teachers, motivation of students, employability of the programme and freedom for innovations. The teachers should also undergo orientations as well as the content improvement through training from time to time.There is explosion of information in the modern times.It is, therefore, very important to convert this information into knowledge and here the teachers in the universities and colleges have to play a very crucial role.

Chapter 9

Teachers in Universities and Colleges-Current Status Regarding Avaliability and Servce Conditions

Chadha G.K.
Sudhanshu Bhushuan
Murlidhar

1. Introduction

Indian higher education system is the third largest in the world with over 14 million enrolment of students and over half a million teachers. Directions of development in higher education in the past were set by the Commissions, Committees and the national policies on higher education. The awards relating to pay scales and various other benefits, recommended by the UGC Pay Review Committees, (PRC) at an interval of every ten years, determines the benefits and incentives to the teachers working in the universities and colleges. Teachers, undoubtedly the most decisive fulcrum of the system, have been getting hikes in pay scales and other associated benefits, in varying form and content, although anomalies and lopsided implementation of the recommended packages have been a reality. At the same time, a voice has been expressed, from time to time, in various quarters including the reports of the Pay Review Committees, to enhance dedication of teachers to their profession and make them more responsive and accountable to the changing needs of the society. In recent years, particularly after the Indian educational system began to become a part of the global educational (and economic) system since the early 1990s, the issue of accountability has started gathering a marked attention among policy makers, public analysts, and society at large.

Without any doubt, there is a national consensus about the challenges that the higher education sector faces under the present phase of globalization. The most important is to how to attract brilliant and talented young men and women to college and university teaching jobs. Naturally, one has to go into numerous issues, and ground realities, for developing concrete recommendations. The PRC, therefore, sought the views of the universities and colleges, through separate detailed questionnaires, and of individual groups of teachers (e.g. Professors, Readers and Lecturers, etc.) through numerous regional consultations. The feedbacks from universities and colleges related to diverse aspects of their functioning, all of them need not be dwelt upon by the present report. Accordingly, the PRC picks up just a few issues that have a bearing on the working and service conditions of teachers and other associated functionaries in universities and colleges, and can throw hints about the improvements that need to be injected to improve faculty recruitment and retention. In this paper the major items that we concentrate on are: the vacant faculty positions, promotional avenues available to lecturers and readers, mobility of teachers, parity in pay scales, allowances and other facilities of the teachers, superannuation benefits, work load, capacity building and faculty improvement, and so on.

Sample Size of Universities and Colleges

Questionnaires were sent to all universities and colleges governed under 2f and 12b of the UGC Act. A total of 47 universities (10 central universities, 29 state universities and 8 deemed universities), spread over 19 states, representing over 12.0 per cent of universities in the country, responded. In sample universities, filled-up posts of 8064 Professors, 2438 Readers and 4963 Lecturers, were reported. Likewise, a total of 1401 colleges (464 government colleges, 889 aided and 48 non-aided (private) colleges), spread over 29 states, representing over 10.0 per cent of total colleges, responded. In sample colleges, the filled-up posts of 3,456 Readers and 12184 Lecturers, were reported. For some variables, responses were not forthcoming from some universities/colleges; hence, the reported sample size varied from some variables to others.

Status of Vacancies in Universities

Among the sample universities, vacancies at all levels of teaching posts were observed to be extremely high. More than 51.0 per cent of vacancies in the universities were reported to be lying vacant; the percentage was 53.0 per cent for Lecturers, 51.0 per cent for Readers and 45.0 per cent for Professors (Table 1). The adverse impact of this outcome on the quality of teaching is too obvious to be emphasized.

**Table 1: Vacant Positions of Professors, Readers and Lecturers in
Sample Universities (Academic Session 2007-08)**

	Total Sanctioned	Total Filled	Total Vacant	% Vacancy	N = No. of sample university
Prof	2469	1367	1102	44.63	45
Reader	4506	2194	2312	51.31	46
Lecturer	9604	4503	5101	53.11	44
Total	16579	8064	8515	51.36	

The intensity of vacant positions varies markedly among the types of universities. The state universities show a very depressing scenario, for all positions; the overall level of vacant positions is 58 per cent, and it is much higher at the level of Lecturers and Readers.

Inasmuch as around 90% of students in university departments are enrolled in state universities, such a high incidence of vacant positions is sure to be making a damaging effect on the quantity as well as quality of teaching and research in universities in general, and state universities in particular. Somewhat surprisingly, even the central universities suffer from shortage of teachers. Overall, 36.0 per cent of faculty positions are lying vacant. Among the deemed universities, nearly one-third of vacancies are lying unfilled; the highest incidence of unfilled vacancies being in the case of Professors (See Chart 1).

Chart 1
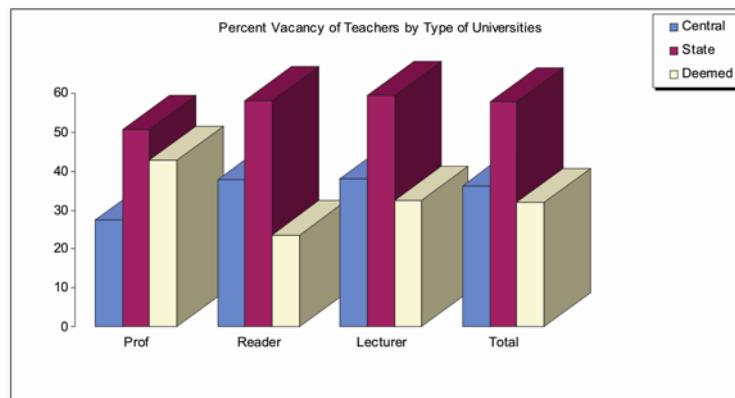
4. Status of Vacancies Colleges

The situation is equally, if not more, grim for colleges (Table 2). No fewer than 41.0 per cent of positions at the Lecturer level, and 18.0 per cent of those at the Reader level, are lying unfilled. The situation in non-aided colleges is far more distressing, in this regard. As many as 52.0 per cent of vacancies at the entry level and 42.0 per cent of those at the level of Readers are lying unfilled. Nearly 42.0 per cent of entry-level positions are vacant in government colleges against 40.0 per cent in government aided colleges, while, the corresponding figures for the Reader-level positions are 19.0 per cent and 16.0 per cent, respectively.

In overall terms, the situation is rather alarming. Teachers in the universities and colleges generate and disseminate knowledge through organic linkages with each other as also with the students through a facilitating physical and academic environment. If a particular university department or a college suffers from the shortage of teachers, the generation and dissemination of knowledge suffers and the quality of education is adversely affected. Benefits available to those in service, in the midst of the acute shortage of teachers, cannot compensate for the loss in the quality due to shortage of teachers. It is, therefore, essential that incentives given to a teacher should go hand in hand with the filling of vacancy of teachers in universities and colleges. There should be a tolerable zone of vacancies, preferably within 5 to 10 per cent of the sanctioned strength.

The ambitious plans of expanding the higher education sector during the Eleventh Plan would remain substantially unfulfilled if the supply of teachers does not match the expanding demand for them. The PRC firmly believes that all-out efforts to liquidate the existing stock of vacancies, through attractive pack packages and better working/service conditions, is the most essential first step. In particular, it is high time that many of the State governments which are reported to have been clamping embargo from time to time, under different pretexts, most noticeably the resource crunch, on filling up the sanctioned vacancies, need to review their 'close-fist' policy, in their own interest. Raising the age of superannuation, uniformly for all colleges and universities, in all regions, and in all types of institutions, is an equally inescapable policy step, to reduce the supply-demand gaps.

Table 2: Vacant Positions of Readers and Lecturers in Sample Colleges (Academic Session: 2007-08)

	Readers				Lecturers			
	Number of Sample Colleges	Sanctioned	Vacant	Percent	Number of Sample Colleges	Sanctioned	Vacant	Percent
Govt	179	1779	333	19	340	6101	2571	42
Aided	171	2018	317	16	609	12346	4988	40
Non-aided	9	150	42	28	36	814	423	52
Total	359	3947	692	18	985	19261	7982	41

5. Status of Vacancies of Librarians and DPEs

In universities, one half of the posts of Librarians and nearly 52.0 per cent of those of DPEs are lying vacant. The situation is a little less frightening in the case of Deputy and Assistant Librarians and Assistant Director of Physical Education (See Table 3). The situation at the college level is not as bad (Table 4).

Table 3: Status of Staff in Library and Physical Education in Universities

	Sanctioned	Filled	Vacant	Vacant %
Librarian	38	19	19	50
Deputy Librarian	45	28	17	38
Assistant Librarian	187	130	57	30
Director of Physical Education	21	10	11	52
Deputy Director of Physical Education	11	10	1	9
Assistant Director of Physical Education	76	54	22	29

<p align="center">**Table 4: Vacancy Position of Librarians and DPE's in Colleges**</p>

	Librarians				DPE's			
	Number of Colleges	**Sanctioned**	**Vacant**	**Percent Vacant**	**Number of Colleges**	**Sanctioned**	**Vacant**	**Percent Vacant**
Govt	135	145	5	3	67	74	2	3
Aided	260	279	13	5	154	163	6	4
Non-aided	17	22	0	0	10	10	0	0
Total	412	446	18	4	231	247	8	3

6. Part Time/Contract Teachers

As noted above higher education system in India suffers from the serious shortage of teachers. Shortage of teachers has led to employment of part time or ad hoc teachers. Table 5 shows that the ratio of part time lecturers to regular lecturers is 0.24, for all types of universities put together, 0.32 for state, and 0.20 for deemed universities; the system of part-time or *ad hoc* employment of faculty is nearly completely absent in the case of central universities. In plain terms, in state universities, there is one part-time or ad hoc teacher for every three regular lecturers, and one such lecturer for every five regular lecturer in deemed universities. Likewise, Table-6 shows that, in colleges, out of 100 lecturers, there were 38 part-time contract lecturers. In the government-aided colleges, the incidence of contract lecturer was the highest.

The manner in which such part-time or ad hoc or contract teachers are employed (*a la* service break during vacation period for many appointees), the pittance that is handed over to them in the name of monthly salary (although, in most cases, selected through a properly constituted selection committee), and the long duration for which the Damocles sword hangs over head, made innumerable stories that the PRC picked up from the series of its regional consultations. Pay Review Committee views this as a matter of great concern and suggests state governments to fill up the vacant posts on a regular basis, both to improve the faculty strength in universities and colleges which, in turn, would make a decisive improvement on the quality of education.

7. Promotional Avenues in Universities

In the Fifth Pay Commission, the Career Advancement Scheme (CAS) was provided, both for Lecturers and Readers. Lecturers with Ph D could be promoted to Senior Lecturers after 4 years (5 years with M Phil and 6 years with post graduate qualification), Senior Lecturers to Reader after another 5 years with Ph D only and from Sr. Lecturer to Lecturer selection grade without Ph D after 5 years. Similarly, a Reader could be promoted as a Professor after 8 year of service, as a Reader. The CAS provided promotional avenue to every teacher who could show the merit in her/his academic career.

In state universities, at the level of Professor, the CAS seems to have conferred the highest of promotion benefits at the level of the Reader. For example, CAS-Professors were 2.5 times of the Professors appointed against the sanctioned or open competition posts (Table 5). However, the high ratio might also be the result of lesser number of filled up posts of Professor. However, the fact remains that promotional avenues provided the career advancement to the teacher 2.5 times the existing filled up posts of Professor. In the case of Deemed University the promotional benefit at the level of Professor was the lowest. At the Reader level, the promotional benefit in relation to the filled up post of Reader was highest (2.4 times) in the Deemed University but lowest among the state universities (0.8). There exists some anomaly in the case of state universities, namely higher level of career advancement at the level of Professor and lower promotional avenues at the Reader level. At the level of Lecturer we notice that in state universities, out of 100 lecturers, 25 lecturers are in senior lecturer grade and out of 100 lecturers in senior grade 68 lecturers are in selection grade. Thus, it may be observed that promotional benefits given in the 5th Pay Commission were helpful in career advancement of teachers. Perhaps,

many of the teachers would have languished at lower posts if the CAS were not available. Nevertheless, the fact that the CAS was not uniformly implemented in all universities and colleges, or not equally rigorously implemented everywhere, cannot be denied either.

Table 5: Ratios of CAS Promotees (Co-efficient of Promotion)
in Different Grades by Type of Universities

University Type	Prof. (CAS): Prof.	Reader (CAS): Reader	Lec (Sl Gr): Lec (Sr. Gr.)	Lec (Sr. Gr.): Lecturer	Lecturer (PT/AdH): Lecturer	Prof:Reader: Lecturer
Central	1.6	1.9	0.26	0.13	0.02	1 : 1.5 : 2.5
State	2.5	0.8	0.68	0.25	0.32	1 : 1.7 : 4.3
Deemed	0.9	2.4	0.36	0.31	0.20	1 : 2.2 : 4.7
Total	2.0	1.0	0.59	0.23	0.24	1 : 1.7 : 3.7

8. Promotional Avenues in Colleges

The avenues of promotion under the CAS can also be analysed at the level of colleges. It may be noted that the ratio of lecturer senior grade to lecturer at any point was 0.46 and the ratio of lecturers selection grade to lecturer senior grade was 1.71 (Table 6). In government colleges, the latter ratio was as high as 2.14 and in aided and non-aided colleges, it was 1.53 and 1.34, respectively. Thus, it may be seen that the CAS did provide avenues for promotion to the Lecturers upto the Reader scale. In the Fifth Pay Revision report, the avenue for promotion from Reader to Professor was not available for the colleges.

Table 6: Ratios of CAS Promotees (Co-efficient of Promotion)
in Different Grades by Type of Colleges

College Type	Lect(Sel):Lect(Sr)	Lect(Sr):Lecturer	Lecturer: Reader	Lect(Contr):Lecturer
Govt.	2.14	0.47	1.88	0.32
Aided	1.53	0.47	3.16	0.41
Non-aided	1.34	0.56	2.97	0.29
Total	1.71	0.46	2.66	0.38

9. Mobility of Teachers

There is a general perception that outward mobility of teachers is taking place from the higher education system. According to one view, teachers do not get adequate remuneration and promotional benefits in universities and colleges in relation to what is available in the corporate world. Some public analysts believe that outward mobility of teachers is not desirable, as it will adversely affect the sustainability of the educational system, especially at the college level. Yet another viewpoint argues that outward mobility of teachers is not harmful as long as higher education system attracts talents, and operates through in- as well out-flow channels. In this view, mobility is a healthy sign and mobility of teachers, especially from one university to another needs to be encouraged. Restricted mobility leads to inbreeding. More and more movement of teachers within the system needs to be encouraged. For example, teachers from B grade colleges may be encouraged to join the faculty of A grade colleges and vice versa. Special benefits may be given to teachers who are ready to serve in rural areas or in difficult terrains.

From our university-level sample data, it is absolutely clear that the outward mobility of teachers as a percentage of total teachers is nearly nil – 1.2% per annum. The severely restricted movement/mobility of teachers to any other university/college/educational institution is indeed a highly depressing feature of our educational system. The mobility to other destinations such as the corporate sector or non-educational government institutions was equally negligible.

Nevertheless, whatever the magnitude of mobility, the highest mobility was observed in the case of science teachers followed by teachers of engineering & technology institutions. Mobility among arts, commerce and management disciplines was also negligible.

The reason for the mobility of science and engineering disciplines may be due to their high demand in the education sector, corporate sector and in foreign universities. Feedback received also suggested that the highest outward mobility of teachers take place at the Lecturer level. At the Reader and Professors levels, outward mobility was not very high. It means that only at the earlier stages of their career, highly qualified and brilliant teachers find it beneficial to move out from one institution to another, and are in a better position to negotiate their outward movement. Once they settle down during the mid-career, they do not prefer to join any other institution. For the education sector, the warning is clear. Teaching profession must look to be attractive, at the entry point, and for the first decade or so, the avenues of promotion should be faster than what they have been hithertofore.

Incidentally, the pattern of outward mobility at the university level finds its echo at the college level as well. The field information from colleges clearly show that in government, aided and non-aided colleges, the highest mobility of teachers takes place at the lecturer rather than the reader level. One interesting fact is that non-aided colleges show the highest level of mobility at the level of lecturer, most plainly, because such appointees are nearly constantly prowling for better pastures and more congenial work atmosphere..

10. Parity in Pay Scales, Allowances and Other Facilities

Normally after the announcement of the pay scales of the teachers by the central government, the basic pay is adopted by the state governments in implementing the pay scales. However, all other allowances admissible to teachers are paid, usually maintaining parity with state government employees. Sometimes, in payment of DA and additional DA, great delay occurs. From the university and college feedbacks received by the PRC, it came out that, at the university level, parity in various allowances is maintained in 60 per cent of cases, and in 80 per cent of cases at the college level, as per the UGC announcement. However, in payment of DA, additional DA, HRA, CCA, hill allowance and transport allowance, parity is maintained as per the state government rules. This leads to wide differences in the payment of various allowances to the teachers in the colleges.

Table 7: Parity in Pay Scales and Allowances (in %)

Parity Description	University		Govt. Colleges		Aided Colleges		Non-Aided Colleges	
	Central	**State**	**Central/ UGC**	**State**	**Central/ UGC**	**State**	**Central/ UGC**	**State**
Parity in Pay Scales			80	19	78	21	78	20
Parity in DA/Additional DA	38	62	16	84	17	83	21	79
Parity in HRA	36	63	14	86	13	87	17	83
Parity in CCA	34	65	15	85	17	83	28	72
Parity in Hill Allowance if applicable	40	60	20	80	18	82	18	82
Parity in Transport Allowance	48	51	25	75	20	80	44	56

All other facilities given to college teachers were also examined. 50 per cent of DA was merged with basic pay for 82 per cent of teachers from government and aided colleges, 72 per cent in the case of non-aided colleges (Table 8). Stagnation increment was given in 43 per cent colleges. LTC facilities are largely not available to college teachers. Only 25 per cent government colleges responded that the LTC facilities are available to the teachers. House building advance and conveyance advances are available to 35 per cent and 26 per cent of teachers in government colleges. Thus, in spite of recommendations of the previous pay commissions, the basic

facilities given to various central government and state government employees are not available to the college teachers.

Table 8: Affirmative Response for Various Facilities to College Teachers (Per cent)

	Govt	Aided	Non-aided
Whether 50% DA merged with Basic pay?	82	82	72
Whether stagnation increment given?	43	43	38
Whether LTC facilities Available?	25	34	33
Whether HBA admissible?	35	30	32
Whether Conveyance Advance admissible?	26	21	7

With respect to medical benefits, 35 per cent of government colleges responded that there is no medical facility available to the teachers. Another 39 per cent of government colleges responded that medical facility is in terms of reimbursement (Table 9). Around 50 per cent of the aided and non-aided colleges responded that medical support only in the form of reimbursement of expenses is available to their teachers.

Table 9: Medical Benefits to College Teachers (Per cent)

	Govt	Aided	Non-aided
Contributory	7	4	3
Non-Contributory	3	2	3
CGHS	1	1	3
Reimbursement	39	53	49
Any other	13	11	5
More than one benefit	3	1	
No facility Available	35	28	38

Another important facility is the residential accommodation to the teachers. 65 per cent of government colleges responded that the residential facility is available to less than 20 per cent of their teachers, 12 per cent colleges said so for accommodating 20-40% of their teachers. On the other hand, only in the case of 10 per cent of government colleges, residential accommodation was available to more than 80 per cent of their teachers. Thus, it may be noted that residential accommodation is largely not available to the teachers. In view of rising levels of house rent, including those in medium size cities, the teachers may find it difficult to rent in a 'decent' residence, consistent with their status, and in conformity with the requirements of their job, often necessitating reading, preparing notes, and working on computer at their residence. A case for higher house rent clearly emerges.

Table 10: Percengtage Distribution of Staff Provided with Residential Accommodation

Staff	Govt	Aided
0-20	65	61
20-40	12	26
40-60	10	7
60-80	2	1
80-100	10	4

Our university-level sample data show that upto 40 per cent of teachers get accommodation in 70 per cent of universities at the level of Professor; 64 per cent of universities at the level of Reader; and 74 per cent of universities at the level of Lecturer (Table 11). More than 80 per cent of the teachers get accommodations in 22 per cent of universities at the level of Professors; 17 per cent of universities at the level of Reader; and 20 per

cent of them at the level of Lecturer. It means that over 80 per cent of teachers do not get accommodation in 49 per cent universities at the level of Professor and Lecturers; and 55 per cent universities at the level of Reader. It was observed that the average waiting period for getting residential accommodation is 9 months in the case of a Professor, 22 months in the case of a Reader, and 10 months in the case of a Lecturer, a Librarian and a sports personnel. Thus, accommodation to the university teachers is a problem and they deserve to be provided with adequate compensation for the non-availability of official quarters.

Table 11 : Percentage of Universities Providing Accommodation

% of Teachers	Professor	Readers	Lecturer
0-20	51.35	44.45	51.40
20-40	18.90	19.45	22.80
40-60	5.40	13.90	5.75
60-80	2.70	5.55	0.0
80-100	21.60	16.65	20.00

11. Leave Facilities

There are diverse patterns and practices in the grant of different types of leave for teachers in the universities. In Table 12, the number of days for which leave is granted is presented where it is most prevalent. There are provisions for CL for 8 days, 10 days and 12 days in different universities. However, 12 days CL was observed in 49 per cent universities and 8 days CL is being practiced in 28 per cent of universities. There are practices for EL for 8 days as well as 12 days. However, 45 per cent of universities follow EL for 12 days. A norm of 24 days half pay leave, 12 days medical leave (with full pay), 20 days medical leave (with half pay) and a maternity leave of 135 days is being followed in a majority of universities. There is also a provision for leave encashment during service for 15 days in 55 per cent of universities. Most of the universities provide one-year study leave. Finally, provision of academic and deputation/duty leave for 30 days also exists for a majority of universities.

Table 12: Different Types of Leave (in days) for Maximum Number of Universities

Leave Description	Teachers		Librarian & sports personnel	
	no. of days	% universities	no. of days	% universities
CL	12	49	12	61
EL	12	45	30	79
Half pay leave	24	80	17	85
Medical leave (full pay)	12	67	15	64
Medical leave (half pay)	20	71	20	45
Maternity leave	135	51	135	45
Detention leave	30	38	15	50
encashment leave during service (EL)	15	55	15	50
Study leave	365	90	365	100
Sabbatical leave	365	79	0	57
academic leave	30	60	0	83
duty/deputation leave	30	69	30	57

12. Retirement & Other Benefits in Colleges

Feedbacks were also received from colleges on superannuation and other benefits (Table 13). There is a provision for re-employment of faculty in 15 per cent of government colleges. Majority of colleges do not, however, provide re-employment facilities to the faculty after retirement from the service in aided as well as non aided colleges. The CPF is available in 44 per cent of government colleges. GPF is followed in a majority of colleges; 80% government colleges report this facility. Pension scheme is followed in 92 per cent of colleges, gratuity in 96 per cent of colleges, leave encashment in 74 per cent of them, group insurance in 85 per cent cases and services transferred for pension benefits in 90 per cent of government colleges. Aided and non aided colleges also follow the same pattern.

13. Work Load

The present status on the work load of Professors, Readers and Lecturers in the universities shows the highest work load for the teaching activities (Table 14). The most frequent work load for teaching activities undertaken by Professors and Readers was 10-15 hours per week frequent work load for teaching activities undertaken by Professors and Readers was 10-15 hours per week in 30 and 32 universities, respectively, whereas in the case of Lecturers, the work load for teaching was 15-20 hours per week in 24 universities, which is comparably quite high.

Table 13: Affirmative Response for Retirement & Other Benefits

Benefit Description	Govt	Aided	Non-aided
% of Colleges having provision for Re-employment for Faculty	15	13	13
% of Colleges having provision for CPF for Faculty	44	43	43
% of Colleges having provision for GPF for Faculty	80	79	89
% of Colleges having provision for Pension Scheme for Faculty	92	93	94
% of Colleges having provision for Gratuity for Faculty	96	97	98
% of Colleges having provision for Leave Encashment at the time of Retirement for Faculty	74	77	77
% of Colleges having provision for Group Insurance for Faculty	85	88	89
% of Colleges having provision for transferring/accepting services rendered elsewhere for Pension Benefits for Faculty	90	93	90

The work load for tutorial and practical activities undertaken by Professors, Readers and Lecturers was between 1-10 hours per week in 16, 13 and 13 universities respectively. It was also observed that Lecturers' participation in the research activities was least, compared to that of Professors and Readers in the universities. As Lecturer has a maximum of work load of 1-5 hours per week for research activities in 7 universities, whereas, it is 5-10 hours per week for Readers in 6 universities and for Professors in 8 universities.

It can, therefore, be concluded that Lecturer's participation in teaching activities is very high. But then, by the expected yardsticks, participation of Professors and Readers in research activities is rather low, most ostensibly because their maximum time is consumed in teaching, presumably because of the general all-round shortage of teachers. Around 65 per cent of universities are functioning 6 days a week and only 35 per cent of them follow 5-day working week.

It is quite interesting to note that around 180 to 200 days were actually utilized in a year by 78 per cent of universities for teaching and other activities. Quite a few universities were also operating for less than 180 days for teaching activities in a year.

Table 14: Distribution of Work Load of Professors (Hours per Week)

Work Load	No. of Universities (f)			
(in Hours per Week)	Teaching	Tutorial/ Practical	Research	Other works
0	0	0	0	1
1-5	1	9	6	3
5-10	7	7	8	5
10-15	30	0	5	4
15-20	3	1	3	0
20-25	0	0	1	0
25-40	0	0	1	0

Table 15: Distribution of Work Load of Readers

(Hours per Week)

Work Load	No. of Universities (f)			
(in Hours per Week)	Teaching	Tutorial/ Practical	Research	Other works
0	0	0	0	2
1-5	0	5	5	2
5-10	3	8	6	3
10-15	32	3	5	4
15-20	5	1	4	0
20-25	1	0	0	0
25-40	0	0	1	0

Table 16: Distribution of Work Load of Lecturers

(Hours per Week)

Work Load	No. of Universities (f)			
(in Hours per Week)	Teaching	Tutorial/ Practical	Research	Other works
0	0	0	0	2
1-5	0	6	7	5
5-10	3	7	6	3
10-15	11	3	3	1
15-20	24	1	3	0
20-25	3	0	0	0
25-40	0	0	1	0

Table 17: No. of Actual Teaching Days in a Year (2006-07)

No. of teaching days in a Year	No. of university
150	1
160	2
170	2
180	20
190	5
200	11
210	2
220	2

14. Capacity Building of Teachers

Capacity building of teachers is important for updating their skill and knowledge. The UGC has prescribed a mandatory provision of one refresher and one orientation course for every lecturer to become eligible for promotion as the senior grade Lecturer. Besides, the resources available in the college for participation in national and international seminar and conferences, also helps in the capacity building of teachers. For a particular year, say, 2006-07, 20 per cent of the lecturers had undergone refresher/orientation courses in roughly 80 per cent of universities. It shows that Academic Staff College has been actively organizing orientation courses for the Lecturers.

Table 18: Percentage of Lectures Undertaking Orientation Course in 2006-07

% Lecturers	No of universities
0 – 10	18
10 – 20	10
20 – 30	1
30 – 40	1
40 & above	6

It may be pointed out that average expenditure per teacher on seminar in India and abroad is abysmally low. Rs. 598 and Rs. 829 is the average expenditure per teacher for participation in seminar in India and abroad, respectively. No fewer than 7o per cent of the universities spent less than Rs. 1000 per teacher on seminar in India and 55p per cent of them spent less than Rs. 1000 per teacher on seminar abroad. Feedback received by the PRC from the universities also shows that not more than one-fifth of teachers participated in seminars in India or abroad, in the last three years.

The PRC was informed that a university in India, on an average, organizes 24 seminars in a year – 17 from the funds made available from within the university and 7 through support from outside agencies.

Capacity building of teachers needs to be emphasized further and average per teacher expenditure for participation in the seminar needs to be increased. Universities should also make an effort to mobilize resources, both from within and outside.

Financial Requirements in Higher Education during XI Plan Period

Sudhanshu Bhushan

An understanding of the financing of higher education acquires importance not only in terms of its historical pattern and projection for the future but also for assessing what direction higher education system is likely to move. On the one hand, the pattern and allocation of central plan enables the University Grants Commission to determine its own plan size and shape up its schemes and programmes, on the other hand, it poses a challenge if actual plan size falls short of the required plan. Though resource shortage arises due to certain important issues that remain unresolved in the realm of education policy and planning, it becomes difficult for the UGC, as a statutory body of the state, to fulfil its responsibility due to large investment gap that remains unfinanced by the state.

Financing of higher education is an issue that is settled through in the domain of education policy and planning. An overview of education policy and planning needs to be captured through the government appointed commissions and committees on education. This would show where are the gaps between the pronouncements and implementation? This would throw some light on the huge investment gap and also explain equity and quality gaps defined in terms of difference between the expected outcome and actual achievement on equity and quality parameters.

The present study is one of several studies, commissioned by UGC, with the objective to provide inputs to the plan preparation so that the Planning Commission could assess it more objectively while making actual allocation. This study makes an attempt to estimate the huge investment and expenditure gap after allowing for plan support and the present level of privatization which generates potential for commercialisation. The inadequate plan support is understood in terms of policy failure. It is attempted to show that huge financial gap needs to be managed through a proper strategy. Ways and means should be found to bridge this gap so that inclusive growth is taken care of. Given huge investment gap, the absence of a proper strategy will have adverse consequences on higher education. Therefore, managing investment gap through cost sharing with students should be given utmost attention. A way forward to bridge the gap is also suggested.

The principles determining financing higher education essentially rest on the nature and objectives of higher education. Higher education is a public good as benefits are largely derived by the society through the knowledge and human capital formation that it generates. It then follows that the primary responsibility of financing higher education rests with the government. It is, however, argued that higher education partly, if not wholly, is a private good as well since the education and skill imparted to an individual entitles him to a future income stream. From this perspective it follows that, in principle, the cost of higher education may be shared by private individual as well, particularly in case where an individual can afford to pay for the cost.

Formidable challenges exist in the financing of higher education. The role of state is increasingly becoming important in a knowledge economy to finance institutions generously that matter in the production of knowledge. Besides, state has to fulfil demand of increasing number of aspirants for higher education. Cost per unit of student in higher education, too, has gone up as the quality education now demands much more investment than what was necessary a few decades ago. However, state resources to finance higher education are shrinking. These factors have given rise to a wide expenditure and investment gap between the resources required and the resources available with the government. An inevitable consequence of high and rising investment gap has been that market forces have guided the developments in higher education resulting in high cost sharing with the students. Privatization and still worse the commercial practices have guided the present phase in the developments of higher education.

There is thus a great need to close the investment gap in a manner that commercial expansion of higher education could be stopped and quality higher education could be provided to large number of post-secondary school graduates who are willing to join higher education. Diversified sources of financing and funding mechanism should be evolved so that a student entering into higher education is not denied admissions merely for want of finance. Challenge in the financing of higher education arises in terms of finding diversified sources of financing and allocating the resources efficiently to meet the objectives of access, equity and quality higher education.

Research Issues

An important instrumentality of financing higher education is planned investment by the centre as well as by the states. From the point of planning and finance the following issues need to be addressed:

1. What has been the trend in public expenditure in higher education? What has been the trend in the plan expenditure over long and short period?

2. What are the mechanism and the features of UGC disbursement of planned resources to the institutions of higher education?

3. What is the required size of investment in higher education? What is the expenditure and investment gap in higher education?

4. How is the investment gap to be explained in terms of higher education policy and planning?

5. From the point of financing, an important issue to investigate is how the resources required can be mobilized so that the incidence of resource generation falls more on the rich and the least on the poor and the socially disadvantaged?

To analyse the first question on the trend of public expenditure of higher education, attempt was made to find a systematic tendency, if any, in the pattern of public expenditure over a long period. The causes for such a systematic tendency are then analysed in terms of factors that guide overall development and constrain sectoral allocation. A hypothesis, in terms of neo-liberal development paradigm, is advanced to understand the systemic tendency of falling plan resources to higher education.

After the plan size of higher education is determined, the second issue is the process by which UGC disburses the resources to the central and state universities, on the one hand, and to the colleges, on the other. Distribution of the planned resources and the planning process during 10th plan is highlighted in the study. An important question is the allocation of resources to various schemes and programmes. The principle of allocation should be such that the marginal benefits of an additional expenditure for every programme should be equal

to achieve optimal efficiency in the allocation of resources. In practice, it may be difficult to find the marginal returns, yet some criterion may be observed to prioritize investment in various schemes as per the importance of the programme to settle the issue of allocation of resources during 11th plan. This issue will be taken up for the present study.

To analyse the third question is not an easy task, as investment in higher education, as opposed to elementary education, was guided by private initiative and finance. The State stepped in to invest in a major way setting the targets and investing in the programmes and through policy interventions. It was never clear through annual targets and investment as to how the objectives set could be realized. It was also never made clear in what way private investment in higher education could fill up the gap to realize the targets. Approach throughout has been some sort of qualitative approach to planning for public investment and sometimes, mere wishful thinking that objectives set forth for plan will somehow be realized, if investment in certain schemes and programmes are carried through. Besides, there was no road map for private investment in higher education through some sort of indicative planning that market forces would be required to achieve. Never ever was the question asked to understand the required size of investment of higher education? Hence, we do not have an answer to the question either in terms of need-based approach to planning or in terms of manpower planning requirement for the country. In the present exercise, an attempt is made to understand the required size of investment for higher education and the expenditure and investment gaps after taking account of the present level of privatisation in higher education.

Investment in higher education is the resultant of public and private investment. The total public expenditure on higher education is undertaken by the central and state governments. The annual budgets of the central and state governments make provisions for plan and non-plan expenditure. Plan component of the budget by the governments, state as well as centre; determine the size of investment by the government to be carried through a detailed process of consultations. The resources required for the non-plan component is taken care of by the Finance Commission. So far as higher education is concerned, the major responsibility of general and technical education rests with the Ministry of Human Resource Development. UGC and AICTE are the two important bodies that, through the plan resources, give major directions to the growth of higher education. The resources for medical and agriculture education are provided by respective ministries. MHRD, however, has the responsibility of providing a direction to the growth of medical and agriculture education as well. Hence, this requires co- ordination with other ministries. In the present study, an attempt is made to determine the minimum required plan size of higher education that the central government, through the UGC, should be required to support.

The most controversial issue in the financing of higher education is the issue of mobilization of resources for higher education. There are four important sources of funds for higher education. State may mobilize the resources through taxes, borrowing and deficit financing. To say that government should provide financing by taxing more is not at all obvious, as subsidies to higher education at the margin may by raised by borrowing as well as deficit financing that may have inflationary implications. Hence, given rising demand and cost for higher education; there are limits to which any government can raise resources for higher education. Therefore, to the extent investment gap needs to be financed, parents are the other major source of financing higher education. Parents may have to bear not only the tuition and fees but also other expenses such as books, uniform, transportation, boarding, private tutoring etc. The third source of financing is student who may obtain loan and repay the amount after certain period. It is based on the assumption that higher education yields a private return and student is entitled to a future income stream after graduating. This places an obligation upon the student to meet a part of or full cost of his studies in higher education. This source, given the changing nature of higher education, needs to be explored in developing countries. The last and

important source is philanthropy. In some countries such as US, it is quite an important source of funding. This source of funding has high potentials but it is not being explored, as there is no mechanism to garner fund and put into some credible uses. Alumni and corporate sectors are also important potential source of support for higher education. Almuni Associations at the level of institutions have been source of financial support in varied ways such as supporting part of infrastructure requirements and providing scholarship funding, seminar expenses etc. Corporate sectors are potential source not as yet fully exploited to support higher education.

Methodology

The study is primarily concerned with the secondary sources of information. The trends of public expenditure and the plan resources by the centre and the states are compiled from the Analysis of Budgeted Expenditure for different years issued by the Ministry of Human Resources Development. The disbursement of finance to higher education institutions in terms of schemes and programmes have been taken from the annual accounts of UGC and from the Annual Reports of UGC. The real difficulty was, however, faced in quantifying the investment and expenditure gaps. There is no systematic data on the cost of student in terms of different disciplines, quality and the the levels of study. There is also no precise estimate of the magnitude of privatisation of higher education and the share of private financing of higher education. The analysis of investment and expenditure gaps are based on sample estimates from sporadic sources of information. The data on enrolment for projection is taken from Selected Education Statistics, Ministry of Human Resources Development. The Census and NSS estimates are at variance with SES data, yet the information on all accounts cannot be obtained from any of the sources. Hence, enrolment projection during 11th plan is made on the basis of enrolment given in SES.

Limitation of the Study

The limitation of the estimates of investment and expenditure gaps needs to be stated. There is limited information on the cost per student, the share of private financing and the enrolment of students in the private colleges. Some estimates have been made on above accounts. The estimates of investment and expenditure gaps will, therefore, deviate to the extent that assumptions do not hold true. However, it does provide some idea of the resources required for financing higher education. The gap, in part, explains, in the absence of public resources, the access and quality gaps and the pressures that might lead to commercialization of higher education. Another difficulty follows from the inadequacy of enrolment data given by SES. Inadequacy results from under-reporting due to inadequate coverage as well as reliability on account of non- compliance of information by respective state governments and in turn by colleges and universities.

Organisation of the Study

Analysing the trend of public expenditure of higher education, Section two captures a long-run as well as short-term movement in public financing and the factors underlying the trend. Analysing the salient features of UGC financing of plan resources to higher education institutions, Section three seeks to understand the planning process underlying the disbursement of resources by UGC. Section four analyses the expenditure and investment gaps in higher education to help explain deterioration in the equity and quality gaps besides drawing attention to the threats of commercialization of higher education. Similarly, Section five examines the disconnect between the recommendations, the commitments of the government and the shortfalls, reflecting state's failure in the realm of policy and planning as the real factors causing such a huge investment gap, while Section six addressing international experiences in cost sharing in recents years, suggests measures for the management of investment gaps through cost sharing rather than allowing autonomous liberalization of higher

education. Section seven, obviously, presents conclusions of the study and makes a few recommendations to the government, UGC and the institutions of higher education.

Section two: Analysis of Public Expenditure in Higher Education

Analysis of public expenditure in higher education has been undertaken in this section in two parts. Firstly, the trend of public expenditure in higher education, reviewed since 1950, indicated a Phase of deceleration in the financing of higher education since 1980s, in spite of higher rate of growth of GDP. Its causes are further analysed, so also the Centre and state role in the financing of higher education and the trend in public expenditure per student in higher education. Secondly, an attempt has also been made to understand salient features of the trend in planned expenditure of higher education.

Trend of Public Expenditure in Higher Education

Phase of Deceleration since 1980

Pattern of public expenditure in higher education constitutes two important phases: A high growth phase of public expenditure from 1951 to 1980 and a low growth phase of public expenditure in higher education from 1980 to 2004. The compound annual rate of growth of central plan and non-plan expenditure in the former phase had grown at 17%, which declined sharply to 10% in the second phase, while the corresponding compound annual rate of growth of state plan and non-plan expenditure in this former phase had grown at 15% which declined sharply to 11% in the second phase. Thus, decline in the rate of growth of public expenditure by the centre has been much sharper in comparison to decline in the rate of growth of public expenditure by the state. The former phase in the growth of public expenditure had been a high growth phase in spite of the fact that the rate of growth of GDP in this former phase was much lower at 3.35% as compared to the 5.42% rate of growth of GDP in the second phase. The second phase is, therefore, the phase of deceleration of public expenditure of higher education. (See Table 1)

Table 1

	1951-52 to 1979-80	1980-81 to 2003-04
Total State and UT	15	11
Central Total	17	10
Grand Total	15	11
GDP	3.35	5.42

Deceleration of Public Expenditure has been Uniform across All States

It is not surprising to observe that there has been almost a uniform pattern of deceleration of public expenditure in higher education across all states, this fact of uniform pattern of deceleration of public expenditure across all states proves a systemic trend and slow withdrawal of state funding of higher education. It may, however, quite intersting to note that three states - Gujarat, Karnataka and Tamilnadu, showing the highest deceleration in growth rate of public expenditure on higher education, are those states which, along with Maharashtra and Andhra Pradesh, experienced a greater degree of privatisation and even commercialization of higher education. States like Himachal Pradesh, Bihar, Assam, Kerala, Madhya Pradesh show lesser degree of deceleration in public expenditure on higher education. (See Table 2)

Table 2 Compound Annual Rate of Growth (CARG) in Public Expenditure in Higher Education

State	1951-52 to 1979-80	1980-81 to 2003-04	Changes in Two Phases
Andhra Pradesh	16	11	5
Assam	15	12	3
Bihar	18	15	3
Gujarat	21	11	10
Himachal Pradesh	13	11	2
Karnataka	17	10	7
Kerala	15	11	4
MP	12	10	2
Maharastra	14	10	4
Orissa	17	10	7
Punjab	14	10	4
Rajasthan	15	10	5
Tamil Nadu	12	1	11
UP	14	10	4
West Bengal	15	10	5

Declining Central Financing

An important point to observe is the contribution of Center and state in the financing of higher education. The trend since 1950's provides an interesting picture. So long as education was under the state list till the 42nd amendment in 1976, the central government increased the share in the financing of public expenditure on higher education. Center contributed 37% in the total financing of higher education in 1965-66. Thereafter, even though education was put under concurrent list in 1976, thereby placing greater responsibility upon the Centre, the share of the Centre to the public financing of higher education went on declining. It declined to 19% in 2003-04. (Fig. 8.1).

Fig. 8.1: Recent Trends and Inter- Sectoral Allocation of Public Expenditure on Education

	1951-52	1965-66	1980-81	1995-96	2003-04
State Share to Total Public expenditure	87	63	80	82	81
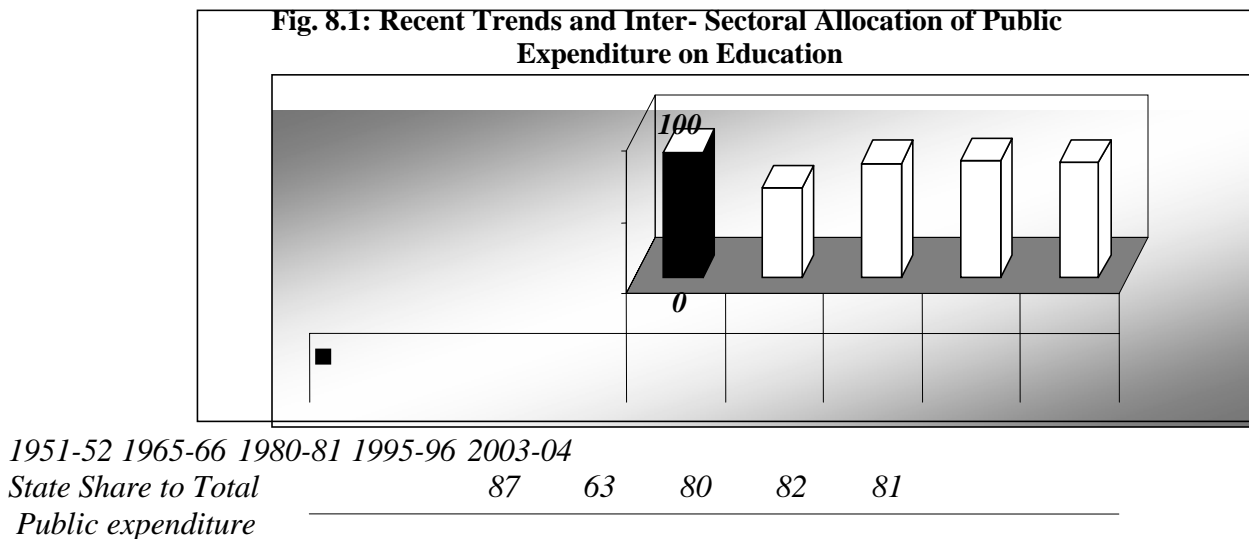
Centre's declining share has been one of the important reasons for deceleration in the public funding of higher education. Constrained by fiscal shortages, the States found it difficult to invest in plan funding to improve the quality of higher education.

It may be interesting to see the recent trends of the public expenditure on education in India for the past ten years at different levels of education. The recent trend, captured in terms of public expenditure per student, will give some idea about relative differences and also throw some light on the relative priority that the state gives in the funding of education. Public expenditure is broadly given by Sector-wise plan and non- plan budgeted expenditure for education departments of the state & Centre on revenue account. The trend shows that, during the period from1993-94 to 2004-5, the public expenditure on elementary education rose up by four times; and that on secondary and higher education roughly by three times each. The size of the total public expenditure in India in 2004-05 (B) stood at Rs. 80286 crores (Rs.802.8 billion). (See Table 3) The Sectoral allocation of public expenditure on education for all these years on elementary, secondary, higher (general) and technical education remained at roughly around 50, 30, 12 and 4 percentage points respectively.

Table 3:Sector-wise Plan & Non Plan Budgeted Expenditure for Education Departments of State & Centre (Revenue Account)

(Figure in Rs. Thousand Crore)

Year	Elementary	Secondary	Higher (H)	Technical(T)	H + T	Total
1993-94	10822	7759	3104	1018	4122	23413
1994-95	12639	9050	3525	1189	4714	27232
1995-96	15218	10344	3871	1290	5161	31517
1996-97	17850	11736	4288	1450	5738	36372
1997-98	20392	13262	4859	1623	6482	41109
1998-99	25150	16782	6117	2073	8190	51225
1999-2000	27905	20845	8248	2459	10707	61281
2000-01	29758	19743	9195	2528	11723	62498
2001-02	32493	20431	8087	2560	10647	64847
2002-03	33474	22049	8859	2820	11679	68561
2003-04 (R)	38260	23983	9380	3138	12518	76387
2003-04 (B)	140586	24990	9562	3387	12949	80286

Source: *Analysis of Budgeted Expenditure on Education, MHRD, Govt. of India, Various Years.*

Nominal and Real Public Expenditure per Student

The past trend of nominal and real public expenditure per student, however, tells a completely differentiated and altogether a different picture of the role of government in financing education. In nominal terms, the public expenditure per student in elementary, secondary and higher education in 2003-04 stood at Rs. 2162, Rs. 6852 and Rs. 12518 respectively. The trend analysis shows that the increase is not that marked if we consider the growth in enrolment. In fact, the nominal public expenditure per student in higher education went up only by 40% during 1993-94 and 2003-04, though in real terms, it declined from Rs. 8961 in 1993-94 to Rs. 7117 in 2003-4. In elementary education, the public expenditure per student increased from Rs. 825 to Rs. 1229 only, while in Secondary education, it remained almost static at little below Rs. 4000 during the said period. (See Table 4)

Table 4: Nominal and Real (Base year 1993-94) Public Expenditure Per Student Rupees

Year	Elementary		Secondary		Higher & Technical	
	Nominal	Real	Nominal	Real	Nominal	Real
1993-94	825	825	3748	3748	8961	8961
1994-95	893	793	4040	3588	9821	8722
1995-96	1052	865	4517	3715	9384	7717
1996-97	1220	959	4890	3844	8438	6634
1997-98	1361	1025	5221	3932	903	6779
1998-99	1654	1175	6285	4467	10238	7276

1999-2000	1792	1233	7392	5087	13219	9097
2000-01	1900	1220	7153	4594	13956	8963
2001-02	2047	1269	6699	4153	12099	7501
2002-03	1977	1185	6641	3982	12294	7370
2003-04 (R)	2162	1229	6852	3896	12518	7117

In terms of index of real public expenditure per student, the decline in public expenditure in higher education remained equal to 21 percentage points during 1993-94 and 2003-04.

Declining Public ExpenditurePer Student in University & Other Higher Education during 10th Plan

Plan and non-plan budgetary support to university and other higher education on revenue account of the Centre and states taken together during 2002-05 (1st three years of 10th plan period), as shown below along with the total public expenditure per student indicates that in nominal terms, the total public expenditure per student in university and other higher education on revenue account remained continuously falling, coming down drastically to Rs. 9237 in 2004-05(See Table 5). In real terms, it showed a consistent decline during 1990's and in the first half of the present decade.

Table 5 Total Public Expenditure per Student in University & Other Higher Education 2002-05

Year	Total Public Expenditure (Rs. Cr.) (Revenue Account)	Enrolment (Exclucing Tech.,Medical,Agriculture & vertinary)	Public Expenditure per Student (Rs.)
2002-03	8859	8599665	10302
2003-04	9060	9012980	10052
2004-05 (R)	9998	10823939	9237
2005-06 (B)	10668		

Source: *elected Educational Statistics 2002-03, 03–04, 04-05, MHRD, Government of India and Analysis of Budget Expenditure on Education, Ministry of Human Resource Development, Government of India of different years.*

Some more facts can be established by breaking the component of per capita public expenditure. It may be noted that on an average, during 2002-05 the central plan and non- plan expenditure per student amounted to only 7% and 13% respectively, whereas the state plan and non plan expenditure per student amounted to around 5% and 75% respectively. Thus, total plan expenditure of Centre and states constituted only 12%; the bulk expenditure being on account of non-plan expenditure. It is also important to note that there has been a consistent decline in the planned resources per student for higher education. See Table 6 below

Table 6 Distribution of Total Public Expenditure per Student in University Other Higher Education

	Public Expenditure per Student		
	2002-03	2003-04 (R)	2004-05 (B)
Central Plan	720	621	656
Central Non-Plan	1316	1333	1192
State Plan	501	455	487
State Non-Plan	7763	7642	6900
Total	10300	10051	9235

Rising Public Expenditure per Student in Technical Education

On the other hand, plan and non-plan budgetary support to technical education on revenue account of the Centre and states taken together during 2002-05 (First three years of 10th plan period), shows that the per capita public expenditure on technical education is rising. In nominal terms, it shows a rise from Rs. 40753 in 2002-03 to Rs. 44885 in 2004-05 budget. (See Table 7)

Table 7 Total Public Expenditure per Student Technical Education

2002-05

Year	Total Public Expenditure (Rs. Cr.) (Revenue Account)	Enrolment (Technical)	Public Expenditure per Student (Rs.)
2002-03	2820.51	692087	40753
2003-04 (R)	3138.71	716652	43796
2004-05 (B)	3387.24	754635	

Source: *GC Annual Report 2002-03, 03–04, 04-05, University Grants Commission, New Delhi and Analysis of Budget Expenditure on Education, Ministry of Human Resource Development, Govt. of India of different years*

Some more facts in Technical education can be established by breaking the component of per capita public expenditure. It may be noted that during 2002-03, the central plan and non plan expenditure per student amounted to only 21% and 26% respectively, whereas the state plan and non-plan expenditure per student amounted to around 12% and 40% respectively. Thus, total plan expenditure of the Centre and states constituted 43% in Tehnical Education. It is the Centre that provides plan support in a major way. States have not been able to provide plan support in a substantial way. (See Table 8 and Fig. 8.2 below).

Table 8 Percent Distribution of Total Public Expenditure in Technical Education

	Public Expenditure per Student		
	2002-03	2003-04 (R)	2004-05 (B)
Cenral Plan	8669	9070	9939
Central Non-Plan	11270	11372	11184
State Plan	2948	5512	7156
State Non-Plan	17845	17819	16578
Total	40732	43773	44857

Fig. 2 Distribution of Public Expenditure per Student onTechnical Education
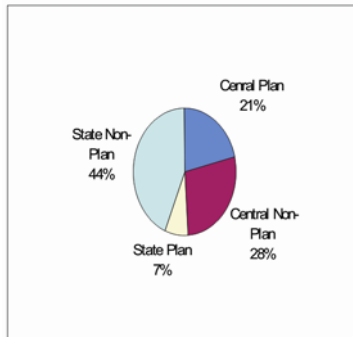
Factors for Deceleration in the Growth of Public Expenditure in Higher Education

This is a point of great significance that in spite of higher growth of GDP, the state has been finding it difficult to step up public expenditure in higher education in the period since 1980. There being a systematic tendency

towards deceleration, and as public expenditure is showing signs of deceleration, it may be worth exploring the reasons behind it.

Deceleration in Public Sector GDP

There are three plausible reasons for deceleration in growth. Firstly, while the rate of growth of public sector contribution to the GDP fell from 7.73% during the period from 1960-61 to 1980-81, to 6.33% during the years 1981-82 to 2002-03, on the other hand, the rate of growth of private sector contribution to the GDP increased from 2.45% to 4.94% during the same period, meaning thereby that in spite of high GDP growth since 1980, the private sector has increasingly become an important contributor to the growth process. (See Table 9)

Table 9 Public and Private Sector GDP and Growth Rates

	1960-61	1980-81	1981-82	2002-03
Public sector GDP at 1993-94 price (Rs. crore)	18555	88719	93206	359651
Private sector GDP at 1993-94 price(Rs. crore)	187548	312409	331867	958670
Public sector GDP Growth rate 1960-61 to 1980-81	7.73			
Public sector GDP Growth rate 1981-82 to 2002-03	6.33			
Private sector GDP Growth rate 1960-61 to 1980-81	2.45			
Private sector GDP Growth rate 1981-82 to 2002-03	4.94			

Contribution of private sector to the growth process is also shown in terms of private sector investment as percent of GDP. Fig. 8.3 shows that public sector investment as percent of GDP has been declining in the 1980's and 1990's, climbing down to mere 5% in 2002; while the private sector investment as percent of GDP has been increasing, reaching a peak of 19% in 1997. Therefore, a neo-liberal strategy to the development process seems to have begun in the 1980's.

Fig. 3
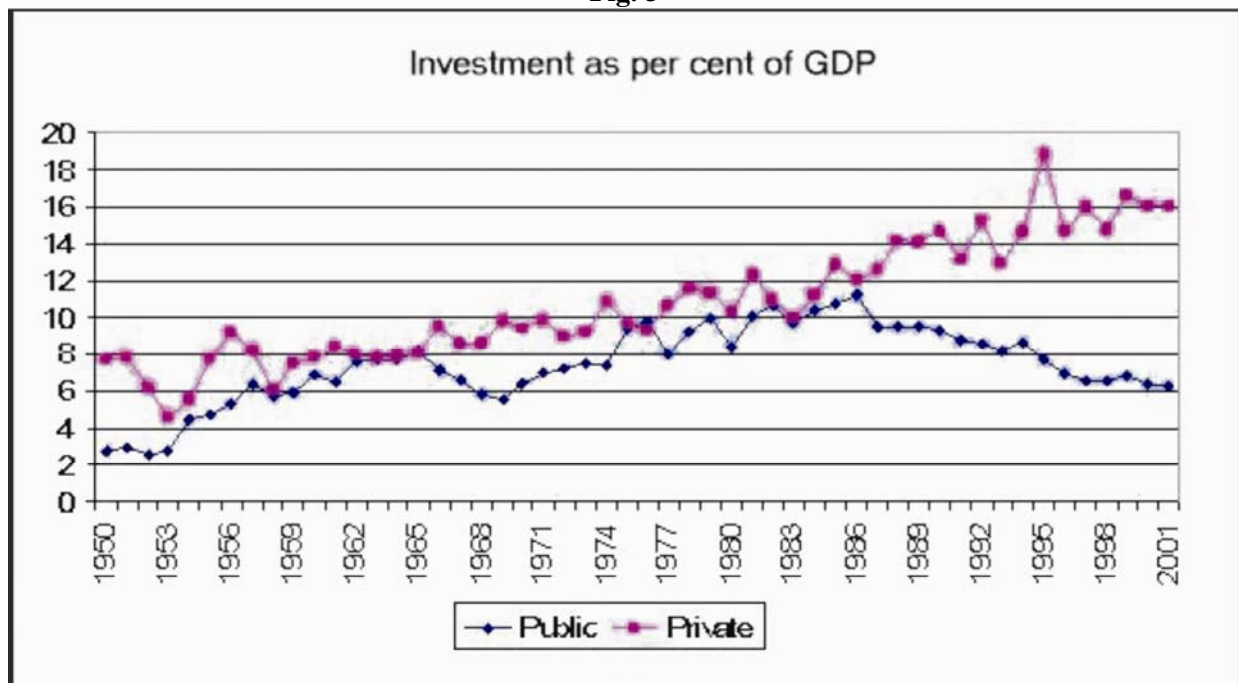
Source: *National Accounts Statistics, various issues referred in Chandrasekhar C P and Ghosh J. (2006)*

Declining Tax to GDP Ratio

Secondly, the total revenue as a percentage of current expenditure and particularly tax revenue as a percentage of current government expenditure also shows a decline in the second phase. The former declined from 117% in 1950-51 to a level of 61% in 2004-05.The latter ratio has declined from 102% to 45% during the same period. It means that the contribution of the private sector to the capacity of the state to spend has also declined. As a result, there has been a fiscal constraint to public sector expenditure. The rise of the rate of growth of private sector contribution in the GDP and state's inability to tax the private sector are two clear trends that show the neo-liberal nature of state, irrespective of political parties in power.

**Table 10 Total Revenue and Tax Revenue as a Percentage of
Current Government Expenditure (at current prices)**

Year	Total Revenue as a % of Govt. Expenditure	Tax Revenue as a % of Govt. Expenditure
1950-51	117.08	102.99
1960-61	106.20	88.37
1970-71	105.16	77.13
1980-81	88.21	64.55
1985-86	81.54	59.38
1990-91	75.64	56.39
2004-05	61.49	45.16

Source: *RBI, Reports on Currency and Finance, various issues referred in Chandrasekhar C P and Ghosh J. (2006)*

If we look at the taxes-GDP ratio, it has been going up till 1985-89, after which it was declining till 1995-2001, as is given in the Fig. below. It also shows that neo-liberal policy has been the chief reason behind state's declining commitment to the financing of higher education in the last over two decades.

Fig. 4
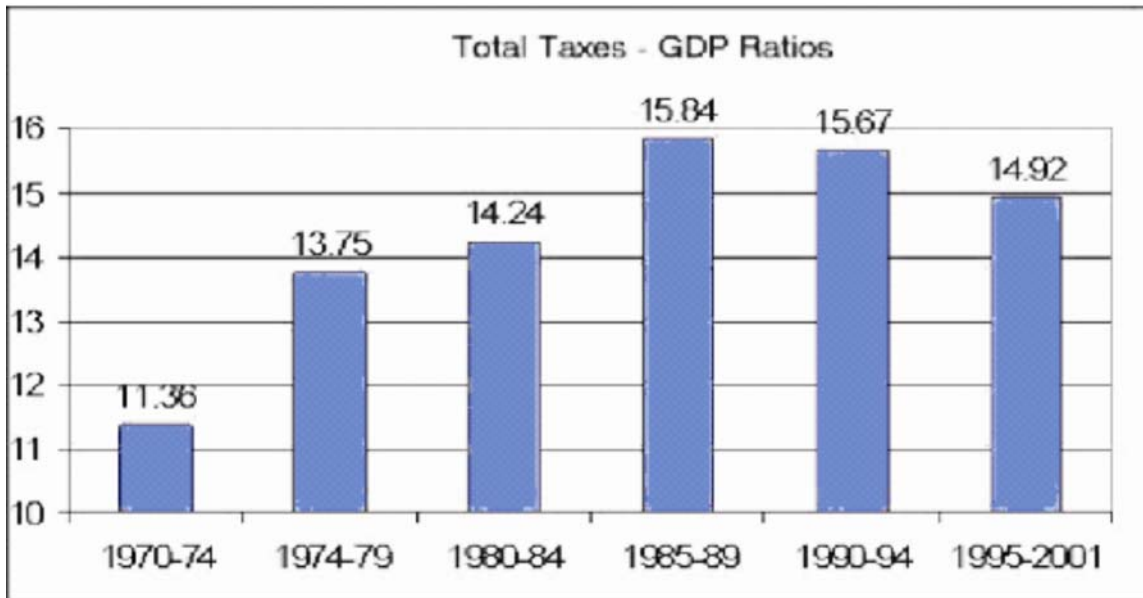
Sources: *Public Finance Statistics of India; and National Accounts Statistics*

Chandrasekhar C P and Ghosh J. (2006)

Crowding out Public Expenditure for Higher Education

Another important feature of public financing of higher education has been the crowding out of public financing of higher education by the elementary education in the second phase. It may, however, be argued that in the first phase, it was higher education that crowded out elementary education. Therefore, the crowding out argument acquires significance only when there is acute shortage of financing due to fiscal resource constraint as in the period since 1980's.

It is observed that between 1951 and 1979, the compound annual rate of growth of public expenditure for elementary, secondary and higher education respectively was 13.7%, 15.9% and 15.2%. The growth rates in elementary education increased marginally to 14.7% and declined to 13.5% in higher education during 1980 to 2003. However, the phenomenon of crowding out is quite prominent with respect to central government expenditure on elementary, secondary and higher education. The growth rate of central expenditure on elementary education increased from 8% in the former to 31% in the latter period and from 10% to 20% in the case of secondary education. However, in the case of higher education it decreased from 19% in the former period to 11% in the latter period. (See Table 11)

Table 11 Compounded Annual Rate of Growth

	1951-52 to 1979-80	1980-81 to 2003-04
Elementary Total	13.7	14.7
Secondary Total	15.9	14.5
Higher Total	15.2	13.5
Elementary Central	8.8	31.8
Secondary Central	10.5	20.0
Higher Central	18.7	11.1

9.2.2.11   Projected Public Expenditure in Higher Education in 2007-08, Assuming 17% Growth Rate in the First Phase (1951-52 to 1980-81)

Had there been state's active role in financing education, opposed to neo-liberal stance of the state, and in the period since 1980, had there been 17% rate of growth of public expenditure on higher education, as observed in the former phase of Centre financing, it would not have been difficult to achieve the target of 1% of GDP for financing higher education.

The projection exercise shows that at the rate of growth of 17%, the public expenditure on higher education could have reached a level of Rs. 20941 crore in 2002-03 and given GDP of Rs. 2249493 crores, percentage share of higher education expenditure to the GDP would have touched a level of 0.93% in 2002-03. In the first year of 11th plan, the percentage share of higher education expenditure to the GDP would have touched a level of 1.1%.

Table 12 Projected Public Expenditure in 2007-08

Public Expenditure on Higher Education 1980-81(Rs. Crore)	483.66
CARG Public Expenditure 1951 to 1980	17%
Projected Public Expenditure Higher Education in 2002-03(Rs. crore)	20941
GDP in 2002-3(Rs. crore)	2249493
% of Public Expenditure on Higher Education to GDP in 2002-03	0.93
Projected Public Expenditure Higher Education in 2007-08(Rs. Crore)	39241
Gross Domestic Product 2007-08 (estimated)	3467441
% of Public Expenditure to GDP in 2007-08	1.1

Trend Analysis of Plan Expenditure

Trends during Different Plan Periods

Trend analysis during plan periods provides an interesting picture of sectoral changes in plan expenditure on education. Elementary education received the least priority during the VI plan period and it has now begun to receive the highest priority in plan expenditure. Plan expenditure in secondary education till the ninth plan also shows a steady trend above 20% in 1980's and 1990's. Expenditure in Technical education, after attaining the peak during third plan, shows a consistent decline (Table 13 below).

Table 13 % Distribution of Plan Expenditure (centre & state) of Education

	First Plan	Second Plan	Third Plan	Fourth Plan	Fifth Plan	Sixth Plan	Seventh Plan	Eighth Plan	Ninth Plan
Elementary	58	35	34	50	52	32	37	48	57
Secondary	5	19	17	*	*	20	24	24	21
Adult	0	0	0	2	2	6	6	5	2
University & Higher	8	18	15	25	28	21	16	10	9
Technical	14	18	21	11	9	10	14	10	8
Others	15	11	12	13	9	10	3	3	3
Total	100	100	100	100	100	100	100	100	100

Source: *Annual Financial Statistics of Education Sector 2003-04, MHRD, Govt. of India, New Delhi, 2005*

* Included under elementary education

Total Plan expenditure in university and higher education was the highest at 28% in the fifth plan. It has been continuously falling till the ninth plan period, reaching down to mere 9%. (See Fig. 8.5 below)

Fig. 5 % Plan Expenditure in University & Higher Education
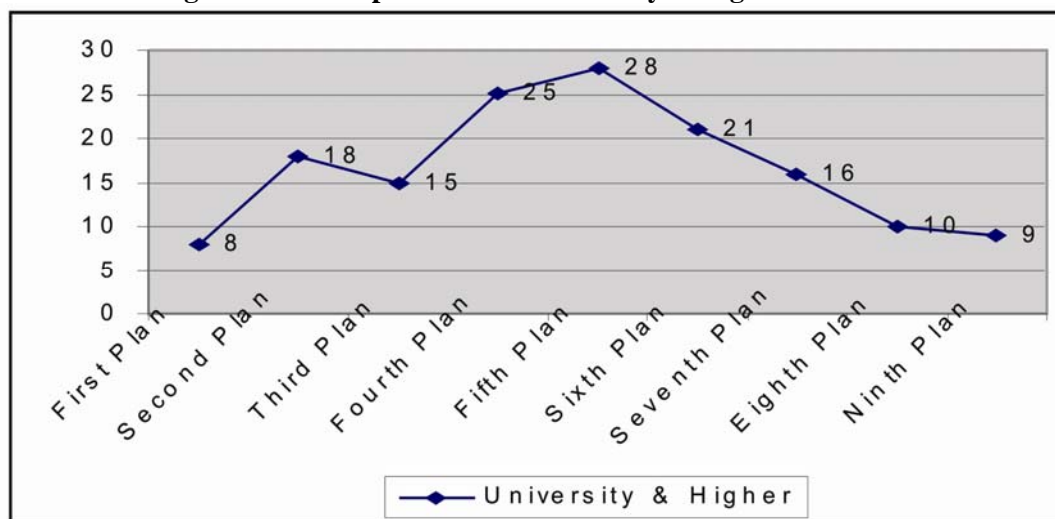
Severe Cut in Central Planned Resources for Higher and Technical Education in the 10th Plan The 10th plan allocation in elementary education constitutes 65.6% of total allocation for education. Central plan allocations for Secondary Education, University and Higher Education and Technical Education constitute around 10% each. If we take a relatively higher allocation in the last year of 10th plan and assume that it is realised, then the actual plan expenditure in 10th plan in elementary education will drastically increase to 78% of total plan expenditure in education, whereas the corresponding ratios for Secondary Education, University and Higher Education and

Technical Education will come down radically to 6, 7 & 6 percentage points respectively. In absolute terms, there is expected to be a decline in actual expenditure in Secondary and Technical Education in comparison to original allocation in 10th plan. Even in University and Higher Education, there is a possibility of actual absolute decline in expenditure in relation to original 10th plan allocation if the inflated budgetary provision during 2006-07 remains unspent. (See Table 14 below)

Table 14 Central Plan Allocation and Expenditure During 10th plan

Scheme	10th Plan Alloca.	% to total	2002-3 (actual)	2003-4 (actual)	2004-5 (Rev.)	2005-6 (rev.)	2006-7 (B)	10th Plan Exp.	% to total	Differen ce (2-9)
1	2	3	4	5	6	7	8	9		10
Secondary	4325	9.87	578.14	639.08	653.6	859.41	1067	3797.23	6	527.77
Univ. & Higher	4176.5	9.53	619.14	560.44	789.95	873.27	1403.5	4246.3	7	-69.8
Language	434	0.99	103.57	104.11	114.77	105.5	165	592.95	1	-158.95
Scholarship	52	0.12	0.24	0.16	1	8.37	13	22.77	0	29.23
Book Promotion	67	0.15	6.26	6.53	5.2	14.09	27	59.08	0	7.92
Plan & Admn.	70.5	0.16	5.4	4.65	6.32	5.69	10.5	32.56	0	37.94
Tech.Edu.	4700	10.72	600.47	626.34	653.31	643.67	930	3453.79	6	1246.21
Elementary	28750	65.6	4259.29	5203.4	7750	12241.76	16892.5	46346.95	78	-17597
Adult	1250	2.85	216.33	232.5	250	290	235.5	1224.33	2	25.67
Total	43825	100.0	6388.84	7377.21	9570.84	15041.76	20744	59122.65	100	-15297.7

Source: *Annual Financial Statistics of Education Sector 2003-04, MHRD, Govt. of India, New Delhi, 2005 and Expenditure Budget 2006-07, Volume – 2, Government of India, February, 2006*

The significant point to note is that past trend of plan expenditure for university and higher education till IXth plan continued to prevail during the 10th plan. The neo- liberal stance of the state giving rise to the shortage of fiscal resources for higher education continued during 10th plan. The empirical finding also supports the observation that it is due to compressing effect of higher percent expenditure for elementary education. Thus, the quantum of plan allocation for university and higher education is not independent of the decision regarding the quantum of plan allocation for elementary education. As the government is also planning to universalize secondary education, the quantum of plan allocation for university and higher education is also dependent on the allocation made for secondary education. Hence, the absolute size of allocation for education and the proportionality determining the allocation will assume importance for determining the size of allocation under UGC and the interventions made by UGC to achieve the goals of access, equity and quality. In a situation where there is competing pressure on resource allocation, the need-based approach to planning acquires a back seat. What assumes importance is to set the strategy right and decide relative prioritization or ranking to achieve the goals, given the allocation of resources for university and higher education. Yet, the absolute plan size of university and higher education during the 11th plan is of crucial importance.

Crucial Role of UGC in Planned Expenditure of Resources for Higher Education

Of the total planned allocation of Rs. 4176.5 crores during the 10th plan, the UGC is the major recipient and spender of planned resources for university and higher education. Almost 79% of resources are allocated under UGC. Allocation for IGNOU constitutes 10% of plan allocation. Plan allocation for Institutions of Research is of the order of 5% and the National Programme for Women constitutes 6% of plan allocation. There is expected to be a serious shortfall in actual expenditure for IGNOU and on account of Institutions of Research. There is an expected shortfall of the order of 40% for IGNOU and 28% for Institutions of Research in plan

expenditure. The total overall shortfall is likely to be of the order of Rs. 157 crores in university and higher education. It seems that National Programme for Women could not take off during the 10th plan period. As can be seen in Table 15, UGC occupies a crucial role in planned expenditure of resources for higher education. Hence, it is important to visualise the actual magnitude and directions of investment of planned resources by the University Grants Commission (see Table 15).

Table 15 Scheme-wise Plan Allocation and Expenditure during the Tenth Plan

Scheme	X Plan Alloca.	% to total	02-03	03-04	04-05	05-06 (R)	06-07 (B)	Total	Diff.
National Programme for Women	254.5	6	0.00	0.00	0.01	-	-	0.01	-254.49
AIU	2.00	0	0.25	0.40	0.50	-	-	1.15	-0.85
Institution of Higher Learning	5.00	0	0.93	0.70	0.33	-	-	1.86	-3.14
Zakir Hussein Memorial College Trust	2.00	0	0.00	0.00	0.40	-	-	0.40	-1.6
UGC	3294.0	79	559.76	516.75	694.75	709.72	1139.47	3620.45	326.45
IGNOU	430.0	10	31.99	16.56	67.0	54.0	90.0	259.55	-170.45
Institutions of Research	189.0	5	26.31	26	26.96	25.08	31.38	135.73	-53.27
Total	4176.50	100	619.14	560.44	789.95	788.8	1260.85	4019.18	-157.32

Source: *Annual Financial Statistics of Education Sector 2003-04, MHRD, Govt. of India, New Delhi, 2005 and Expenditure Budget 2006-07, Volume – 2, Government of India, February, 2006.*

Conclusion

1. A long-run trend in public expenditure of higher education shows that the period since 1980 stands marked by deceleration in the public expenditure of higher education. The compound annual rate of growth of central plan and non plan expenditure in the period 1951 to 1980 had grown at 17% and it declined sharply to 10% during 1980 to 2003. The decline is radical in view of the fact that GDP has been growing at much higher rate at 5.42% in the latter phase as compared to 3.35% in the former phase. During the latter phase, the decline has been observed in case of all state governments. The deceleration is further marked by reduced central share from a peak of 37% in 1965-66 to 19% in 2003-04.

2. A recent trend for a decade during 1993-94 to 2004-05 shows a consistent pattern in the decline of public expenditure per student in real terms for higher education. The decline is to the extent of 21%. The elementary education shows 50% increase in public expenditure per student in real terms and the secondary sector is marked by stagnation.

3. During the 10th plan, public expenditure per student in nominal terms for university and higher education shows continuous decline whereas public expenditure per student in nominal terms for technical education shows a consistent increase. In 2004-05, the public expenditure per student for university and higher education stands at Rs. 10261 and the public expenditure per student for technical education has been Rs. 44885. In the case of University and higher education, the share of central plan to the public expenditure works out to 7%, whereas in the case of technical education, the central plan contributes 21% to the public expenditure.

4. Thus, the hypothesis of deceleration in the public funding of higher education is fully supported.

5. Three reasons have been given to prove the hypothesis that deceleration in the public funding of higher education is systemic and points to the forces that are guided by the neo-liberal view of development. The three reasons are: (a) Decline in the growth of public sector contribution to GDP and the consequent increase in the growth of private sector contribution to GDP; (b) Decline in the growth of taxation as a source of financing public expenditure; and (c) The crowding-out of higher education as a result of increased priority given to the financing of elementary and secondary education.

6. The central message, therefore, seems to be to face the hard reality of compression in the public financing of higher education. It would be appropriate to face the challenges and shift the strategies of planning and financing of higher education towards diversified sources of financing. *A shift in the strategy is necessary yin view of quality and equity. An uncontrolled privatization would lead to further deterioration in quality. It would equally harm the access of all those who may not bear the burden of sharing the full cost of higher education.*

Section three: UGC Disbursement of Planned Resources For Higher Education

The objective of the section is to review important features of the character and mechanism of the planning process through which UGC disburses finance to the higher education institutions. Besides reviewing UGC disbursement of planned resources during the 10th plan, disbursement of planned resources for state universities and affiliated colleges and among central universities and Inter University Centres has also been examined, so also, the role of UGC performing agency function of central government in the disbursement of non-planned resources to the central universities; and the utilisation of plan grants by major objectives and plethora of schemes.

Mechanism and Character of Planning Process in India

The higher education planning process at the central government level consists of two distinct, though not unrelated, phases. At the first level, the plan grants are determined by the Planning Commission in consultation with the Ministry of Human Resource Development, UGC and other experts through the constitution of an expert group on higher education. The expert group organizes consultation meetings in which the proposals of UGC and other agencies of higher education are considered. The UGC in its proposal for the plan period includes plan programmes/schemes for support to central and state universities and present them to the Central Government. The basis of the proposal by UGC is the evaluation of past programmes, the launch of new programmes in accordance with the emerging needs and directions of higher education. The Central Government, after considering UGC proposals and based on the feedback from the expert groups, finalizes the plan proposals for higher education and submits it before the Planning Commissions for final allocation. The Planning Commission, depending upon the merit of the proposals and availability of resources finalizes the plan size for the five year plan period. The annual plan then follows and allocation to the UGC for the annual plan are made for execution of the plan.

At the second level of the plan process, UGC makes allocation to different state and central universities on the basis of the norms under its various programmes/schemes to support infrastructure and basic facilities as well as to fulfil the targets that the UGC sets forth in order to achieve the various objectives. Commenting on the nature and character of allocation of plan grants to the universities, Punnayya Committee noted that 'the development grant is essentially in the nature of ad-hoc grant provided once in five years by UGC to the Central Universities on the basis of negotiations.' Similarly, Madhhuri Shah Committee regarding the mode of preparation of development plans of universities observed thus: 'the procedure adopted [by the universities] is not satisfactory and usually amounts to an uncritical collection of separate proposals made by different departments and units. There is no perspective planning and no delineation of desirable direction of the growth. No university has machinery to evaluate or monitor its programmes. It has been observed that practically in all universities there has been considerable spill over from one plan to another and they are not shown a satisfactory performance in implementing the different schemes approved.'

It follows from the above that determination of the plan size for higher education at the central level basically follows the top-down approach to the planning. In allocating the plan grants to the universities, UGC has scheme-based approach to fund higher education. Plans prepared by the universities are scrutinized by the UGC and allocations to the universities are made under the different schemes. Not only is the process of plan preparation unsatisfactory, the plan support by the UGC is also quite insufficient to make any dent in the promotion of quality in teaching and research.

Planning Process during 11th Plan Preparation

The planning process for the 11th Plan may be said to begin with the first meeting of the Steering Committee on Secondary, Higher and Technical education on 27th March 2006 under the Chairmanship of Member, Planning Commission. The meeting took place against a background note prepared by the Education Division, Planning Commission. The views were shared on various issues. These views were general in nature depending on personal observations and were hardly backed by research findings. After the views of the Steering Committee members were discussed, the Planning Commission prepared the first draft called *"Towards Faster and MoreInclusive Growth - An Approach to the 11th Five Year Plan"*, placed it on the websiteon 14th June, 2006 and circulated it for comments (Planning Commission, 2006a).

The Planning Commission thereafter constituted a 28-member Working Group for the Department of Higher Education for formulation of the 11th Five Year Plan. The first meeting of the Working Group was convened on 17th August 2006 under the Chairmanship of Secretary, Higher Education, MHRD in which again the discussion took place against the background paper and a 14-point terms of reference. As a result of further gathering of views, it was agreed that Sub-Working groups may be constituted to work out details on the different aspects of higher education. Accordingly 7 such Sub-Working Groups, on Central Universities, State Universities, Deemed to be Universities, Colleges, Quality, Research and Distance Education were constituted. In a meeting of the Working Group, reports of seven Sub-Working Groups were presented, on 20th September 2006. Based on the reports, the Ministry was expected to submit the 11th plan proposals for higher education to the Planning Commission.

University Grants Commission is the largest stakeholder as well as the implementer of planned resources to universities and colleges. It was thought desirable by the Chairman, UGC to prepare plan proposal not on the basis of views, reports and discussions alone. The Chairman developed a two-pronged strategy: (1) seven short-term research projects were initiated to develop some information base on various dimensions of access, equity, gender, quality, excellence, relevance and finance of higher education; and (2) constituted two groups – an Expert Group and 14 Sub- Groups on various themes relating to higher education.

Plan proposal immensely benefited from the preliminary findings of research shared among researchers, UGC officials and experts. Results showed that enrolments from three different sources – MHRD, Census and NSS – were divergent and enrolment projections were so difficult to make. The sound data base of information was required. It was also possible to identify quality gap, gender gap, regional imbalances and lower participation of the poor and socially deprived groups in higher education. The various Sub-Groups presented the reports on 31st October 2006 along with recommendations and the Expert Group finalized the draft plan of higher education which was finally sent to the MHRD. Based on the draft plan MHRD finally submitted the demand for plan funding for higher education to the Planning Commission.

Thereafter the Planning Commission posted another version of draft approach paper called *"Towards Faster and More Inclusive Growth- An Approach to the 11th Five Year Plan"* during November, 2006. (Planning Commission, 2006b)

The final proposal of Rs. 43,033.53 crores (Planning Commission, 2006c) based on the principle of need-based approach to planning, backed by research findings, was forwarded to the MHRD, Government of India.

Final allocation for the annual plan 2007-08 was of the order of Rs. 2300 crores to the UGC. It means a huge shortfall in the plan finance to higher education is still expected. The finance needs to be disbursed in such a manner that colleges and universities get the fund timely and the institutions are able to use it with optimal benefits to the students and teachers.

Some Critical Issues in the Planning Process

Top-down approach to the planning process looks at the imbalance in macro terms and determines the plan allocation, decides the schemes and budget under the schemes. After having determined the programme-wise budget, the second level exercise of disbursement of fund takes place in consultation with universities and colleges. UGC then monitors the utilization of fund.

The advantage of the approach is that it is simple and less time consuming. It can look at macro imbalances easily. If the approach has to be followed, the following points need to be considered.

(i) lan proposals should be finanlised on the basis of facts and information. The results of research and evaluation of schemes should be the basis of target setting as well as of strategies and programmes. The information based on the feedback received from the universities should be fully taken into account in the plan proposal.

(ii) The number of schemes needs to be reduced to manageable limit, utmost to a dozen of programmes, addressing specific areas of higher education. In determining the programme and allocating budget, it should be flexible and each and every aspect of the scheme should not be defined. Universities should decide the manner in which money is to be utilized under the programme. UGC should fix up the expected outputs objectively and monitor those outputs alone.

(iii) Planning process and implementation should be innovative. Every teacher should be made a part of the process. It means institutional planning should be promoted with a clear-cut focus of plan supported by UGC and plan that needs to be supported by colleges, universities or state governments.

Recommendation of Punnayya Committee (1992-93) on Plan Grants

Punnayya Committee made the following recommendations to improve the system of plan support to the universities:

- Each university must have a perspective plan which must be linked to its objective, environment and potential. The planning and monitoring committee in the university should have the responsibility to prepare five year perspective and annual plans. There should be a system of monitoring development grants by the UGC on a long term basis through a standing advisory committee of its experts.

- There should be a provision of specified discretionary fund with the Vice Chancellor to be used for promoting excellence in teaching and research without incurring any recurring liability.

- To avoid irregularity in the release of the grants, the five year sanction of plan scheme should be made and annual plan should be treated as a stage of action in the five year plan without the necessity for issuing annual sanction.

- With respect to building grants, universities should not be required to get UGC approval for construction of building in stages and thus the detailed control by UGC in the execution of building grants.

- UGC should develop an information generation system through the computer networking with universities so that all the necessary information can be stored and retrieved quickly.

Disbursement o Planned Resources For State Universities and Colleges

Meagre Allocation to State Universities and Colleges

It is interesting to observe that during the first three years of the 10th plan in the university sector, UGC spent 39% of planned resource (Rs 553.36 crores) for the development of Central universities, 12% for Inter University Centres (Rs 168.79 crores), and 6% for Deemed to be universities (Rs. 82.53 crores). Mere 43% of planned resources amounting to Rs.599 crores were spent on the development of state universities during the first three years of the 10th plan. Under college development, 97% amounting to 486 crores were spent on colleges under state universities and 3% of planned resources were spent on colleges of the central universities. Thus, of the total plan allocation of Rs. 1907.05 crore, state universities and colleges received Rs 1085 crores during the first three years of the 10th plan whereas the central university, Inter University centres and deemed universities received Rs. 821 crores.

It is thus important to note that for a country of India's size that has 211 state universities and 17625 colleges mostly under state universities, a central plan size of Rs 1085 crores for state universities and colleges during the first three years of the 10th plan is grossly inadequate and, therefore, constitutes an important reason for deterioration in the quality of university and higher education. Lack of planned resources with the UGC is the most important reason for the oft-repeated crisis of higher education. (Mehta V R, 2003)

Educational planners of the country must think of committing a much larger plan resources for university and higher education in view of the emphasis given in education policy and recent thrust by Prime Minister Man Mohan Singh before the Knowledge Commission. The Planning Commission of India, therefore, must provide a much larger allocation for higher education for the UGC in the 11th plan to make a substantial impact on improving the access and quality of higher education, particularly, in the universities and colleges under the state universities.

The second important aspect is that colleges under state universities assisted by UGC are hardly 30% of the total colleges in India. Only 5808 colleges, as against 17625 colleges in India are recognised under Section 2 (f) and 12 (B) of the UGC Act, thus fulfilling the condition for UGC assistance. Majority of colleges do not receive any plan assistance from UGC. There is, therefore, need for centrally sponsored plan support to the states for a vast majority of colleges that are deprived of UGC support.

UGC as Major Disburser of Non-plan Resources to Central Universities

So far as non-plan expenditure is concerned, UGC provided Rs. 3373.35 crore as non- plan expenditure and Rs. 1907.05 crore as plan expenditure during the first three years of the 10th plan. In the non-plan grant, central

universities and colleges under central universities received the maximum grant. Colleges and universities under State universities hardly received non-plan support from UGC. This is the function that UGC performs as an agency of the central government to disburse maintenance expenditure to the central universities.

It is important to note that, of late, UGC disbursed non-plan resources more than the plan resource. The developmental role of UGC is thus relegated to the background and what acquires importance is the non-plan resource support and rather the agency functions of the central government. The central government should take note of the fact that UGC's developmental role in higher education is given due recognition by giving them independence and the required plan resources under 11th plan to make a dent in the quality of higher education.

Inter-State Distribution of Planned Resources during Xth Plan Period

In the plan support to universities and colleges by the UGC during first three years of Xth plan, a highly skewed distribution of resources to the states is visible. It may be noted that Maharashtra and Tamil Nadu received the maximum plan support of 12% and 11% respectively. Six states, namely, Maharashtra, Tamilnadu, West Bengal, Uttar Pradesh and Andhra Pradesh received around 47% of plan resources. Among major states Bihar, Chattisgarh, Jharkhand, Uttaranchal and Rajasthan received a meagre plan support by UGC. The unequal distribution of plan grants to the states needs to be redressed. As a matter of fact, some states that need favourable support should receive greater plan support for university and higher education.

An important point to observe is that States are severely constrained to add to the existing capacity to education to improve access and quality in terms of planned investment. Similarly, the states are resource constrained and as a result even non-plan commitment is difficult to fulfil. Its impact in terms of rising vacancy of teachers and poor maintenance of infrastructure, laboratory, library, equipment etc. are quite visible. It is in this context that the central plan, even though it constitutes small proportion to public expenditure in the 10th plan, has a developmental role. A significantly high proportion of central plan contribution to the public expenditure per student for university and other higher education and technical education is the most crucial aspect of the policy planning. It acquires importance in terms of higher 11th plan allocation for university and other higher education and technical education.

Utilisation of Plan Grants by Major Objectives

Utilisation of plan grants for universities

Utilisation of plan grants for universities and colleges during the 10th plan provides an idea of magnitude and direction of investment. Major objective-wise utilization of plan grants by UGC for the universities is given in Table 16 below. General Development Grant of university constitutes a major proportion of plan grants to the university. UGC provides plan assistance for staff, equipment, books and journals, buildings, campus and programme development. 16 Central universities, 23 deemed to be universities and 113 eligible State universities are supported and the assistance is aimed at improving the infrastructure and basic facilities and to develop excellence. Development assistance of the order of Rs. 1990.41 crores (61%) helps to achieve the major objectives of access, equity and promoting quality. Separately, looking at the objective-wise plan assistance, UGC has spent Rs. 145.28 crores (4%) for enhancing access & equity, Rs.211.24 crores (6%) for promotion of relevant education, Rs.481.13 crores (15%) for quality and excellence, Rs.428.55 crores (13%) for strengthening of research respectively during the 10th plan. (See Table 16)

Table 16 UNIVERSITY PLAN GRANTS

(Amount in Rs. Crore)

Scheme	02-03	03-04	04-05	05-06	06-07 (BE)	Total	% to total
General Development Grant to Universities	242.64	259.02	307.74	341.66	839.35	1990.41	61
Enhancing Access and Equity	2.91	9.02	26.84	22.17	84.24	145.28	4
Promotion of Relevant Education	31.75	27.17	37.46	27.2	87.66	211.24	6
Quality and Excellence	55.12	65.42	90.49	121.2	148.9	481.13	15
Strengthening of Research	84.17	81.28	87.19	66.26	109.65	428.55	13
Other	0.001	0.0019	-	-	-	0.0029	0
Total	416.591	441.9119	549.72	578.59	1269.8	3256.613	100

Source: *University Grants Commission, UGC Annual Report 2002-03, 03-04, 04-05 and Annual Accounts, UGC, New Delhi 2005-06 and 2006-07.*

The point to note is that UGC is bound to address the infrastructural deficiency of the universities in a major way. As a result, majority of the plan resources, 61 per cent, are spent on general development of the universities. As noted above, majority of the general development grant is disbursed to central universities. Therefore, two conclusions emerge: (i) A large number of state universities is left high and dry for support under general development grant in spite of greater per cent plan allocation under this head; and (ii) Universities was left with very little (only 39%) under the plan support to specifically address the issues of access, equity, quality and research.

Utilisation of Plan Grants for Colleges

Similarly, major objective-wise utilization of plan grants by UGC for the colleges is given in Table 17 below. General Development Grant of colleges constitutes a major proportion of plan grants to the colleges. UGC provides plan assistance for staff, equipment, books and journals, buildings, campus and programme development. Out of 17625 colleges, only 5808 colleges are recognized by UGC under section 2(f). Out of 5808 colleges, only 5386 colleges are eligible to receive central assistance under section 12(B) of the UGC Act, 1956. Development assistance helps to achieve the major objectives of access, equity and promoting quality.

Table 17 COLLEGE PLAN GRANTS

(Amount in Rs. Crore)

Scheme	02-03	03-04	04-05	05-06	06-07	Total	% to total
General Development of College	85.35	103.43	90.34	99.56	72.00	450.68	47
Enhancing Access and Equity	4	3.59	23.94	51.74	38.00	121.27	13
Promotion of Relevant Education	24.74	29.43	30.37	30.42	26.00	140.96	15
Quality and Excellence	19.33	17.43	34.12	25.39	51.50	147.77	16
Strengthening of Research	9.47	18.23	22.76	22.72	17.50	90.68	10
Other	0.09	-	-	-	-	0.09	0
Total	142.98	182.11	201.53	229.83	205	951.45	100

Source: *Same as Table 16*

It may be observed that out of Rs. 4208 crores, 77% was spent on the universities and therefore, colleges were left with a very small kitty of plan assistance, of the order of Rs 951 crores, out of which, again Rs. 450 crores were spent on general development due to serious infrastructural deficiency of the undergraduate colleges in India. Separately looking at the objective-wise plan assistance, UGC has spent Rs. 121.27 (13%) crores for enhancing access & equity, Rs.140.96 crores (15%) for promotion of relevant education, Rs.147.77 crores (16%) for quality and excellence, and Rs.90.68 crores (10%) for strengthening of research during the

tenth plan. UGC has disbursed Rs. 951.45 crores as plan grants to 5386 colleges during the 10th plan. On an average, this amounts to Rs. 20 lakhs per college for five years. With this amount of support for the colleges, it could be anybody's guess what impact it would have on colleges to improve the access and quality?

Utilization of Plan Grants Through Schemes

General Development Grant to Universities and Colleges

General development grants to universities and colleges constitute the most important grants for the universities and colleges. Universities have received Rs. 972 crores and colleges Rs. 302 crores. Thus, universities receive development grant more than three times the development grant to the colleges. Under the head of development grant, Rs. 102 crores were also spent on the unassigned grant/infrastructure for women and sports.

Table 18 General Development Grant to Universities and Colleges

(Amount in Rs. Crore)

Scheme	02-03		03-04		04-05		05-06		06-07 (BE)	Total 02-03 to 05-06	
	U	C	U	C	U	C	U	C	U &C	U	C
General Development Grant for Universities	238.99	1.29	255.92	0.0	145.99	0.65	332.01	3.88	697	972.91	5.82
Unassigned grant, infrastructure for Women & Sports	3.66	5.13	3.11	22.87	9.13	17.3	9.92	30.7	68.35	25.82	76.08
General Development Grant for Colleges	0.0	78.5	0.0	80.56	0.0	72.3	0.0	64.92	63	0	296.38
Total	242.65	74.93	259.03	103.44	155.12	90.34	341.93	99.56	828.35	998.73	378.27

Source: *Same as Table 16*

Enhancing Access and Equity

In addition to the development grant, some of the additional grants under Focussed Development of Universities have been introduced in the 10th plan with a specific objective to enhance access and equity. For the state universities, 'Special Development grant for young universities' and 'Special development grants for universities in Backward areas' are provided under the ongoing 10th plan. These two development grants were introduced in the 10th plan in accordance with the objective to develop new universities and the universities in the backward regions of the country.

In addition to the development assistance to the colleges, Special development grant for young colleges and Special development grant for colleges of educationally backward areas are the two schemes under which UGC provides assistance to the development of colleges. The grant is given to develop infrastructure of the universities.

In addition, there are schemes under Non formal education, namely, Adult and Continuing education, Yoga education, Human rights and values in education, Special studies, Population education and woman studies centres. There are seven schemes under facilities for disadvantaged groups, mainly for SC and ST, minorities and differently abled persons.

Under the schemes for young and old universities and colleges and backward and remote areas universities and colleges, plan grant of Rs. 69.28 crores was disbursed during the 10th plan. Non-formal education received Rs. 40.88 crores and Rs. 36.48 crores were spent under 7 schemes for SC, ST, minorities and differently abled persons.

7 small schemes under the head of disadvantaged groups and 5 schemes under Non- formal education need to be merged under respective heads of the programme to ensure smooth monitoring of programmes by UGC.

Table 19 Schemes for Enhancing Access and Equity

(Amount in Rs. Crore)

Scheme	02-03		03-04		04-05		05-06		06-07	Total 02-03 to 05-06	
	U	C	U	C	U	C	U	C	U &C	U	C
Focused Development of Universities	0	0	5.48	0	6.56	0	5.64	0	8	17.68	0
Non-formal Education	2.76	0.11	3.25	0.07	17.03	1.1	14.05	2.51	10	37.09	3.79
Facilities for Disadvantaged Groups	.61	3.59	.3	1.38	3.71	5.86	2.86	18.17	20.24	7.48	29
Focused Development of College	0	0	0	2.2	.16	17.03	0	32.21	38	.16	51.44
Total	3.37	3.7	9.03	3.65	27.46	23.99	22.55	52.89	76.24	62.41	84.23

Source: *Same as Table 16*

It may be noted that grants for enhancing access and equity both for universities and colleges is inadequate. It is, in practice, constrained by severe cut in plan allocation to the UGC. Besides this, the amount spent for the schemes to support universities and colleges in backward areas is grossly inadequate. Given the emphasis in the 11th plan to establish colleges in backward districts, higher allocation for the scheme should be made.

Promotion of Relevant Education

There are four heads under which the relevant education is promoted by UGC. Career orientation to education supports all the self-financing programmes mainly launched by the colleges. Rs. 95.36 crores was given to the colleges during the 10th plan under the scheme. Under strengthening of teaching activities travel grants, culture exchange and area studies are promoted under respective schemes. Most importantly Academic Staff colleges are supported under the head – strengthening of teaching activities. Under innovative schemes teaching and research in interdisciplinary areas are promoted. Under New schemes, little amount has been allocated for chairs, centres, IPR promotion etc.

Table 20 Promotion of Relevant Education

(Amount in Rs. Crore)

Scheme	02-03		03-04		04-05		05-06		06-07	Total 02-03 to 05-06	
	U	C	U	C	U	C	U	C	U&C	U	C
Career Orientation to Education	.19	19.58	.25	24.79	.39	25.68	.19	25.31	26	1.02	95.36
Strengthening of teaching activities	31.51	.93	21.88	.89	26.49	.9	21.28	.79	23.3	101.16	3.51
New innovative schemes	.12	.04	2.34	1.74	10.73	3.55	5.76	4.17	49.36	18.95	9.5
Emerging areas in humanities, sciences and technology	.26	.01	2.86	1.84	0	0	0	0	0	3.12	1.85
Total	32.09	20.56	27.33	29.27	37.61	30.12	27.23	30.27	98.66	124.26	110.22

Source: *Same as Table 16*

Quality and Excellence

An important function of UGC is to maintain high standards of education. For this purpose, various programmes are supported by the UGC. It is important to note that promotion of quality and excellence of

colleges received the low priority due to resource crunch. Out of Rs. 466.78 crores, colleges received only Rs. 87.88 crores and major share being given to the university.

Universities with potential for excellence, Centres with potential for excellence and Colleges with potential for excellence are the three FLAGSHIP schemes of UGC to develop excellence in teaching and research. Ten universities have so far been identified with potential for excellence and are being supported during the 10th plan.

12 universities have been identified for establishing centres of excellence and 47 colleges in Phase–I and 50 colleges in Phase – II were awarded potential for excellence. Establishment of five new centres for studies and research on various inter-disciplinary areas in sciences and humanities within university system were taken for financial support in the 10th plan.

For promoting ICT for teaching-learning process, five schemes have been initiated. Digital repository of research and teaching material, computer education and internet connectivity are being developed. Besides quality assessment, professional management of higher education has many schemes under which UGC provides assistance. Some of these are Faculty Improvement programme, incentives for resource mobilisation and training for administrators.

Table 21 Quality and Excellence

(Amount in Rs. Crore)

| Scheme | 02-03 | | 03-04 | | 04-05 | | 05-06 | | 06-07 | Total | |
| | | | | | | | | | | 02-03 to 05-06 | |
	U	C	U	C	U	C	U	C	U &C	U	C
Universities and Colleges with potential for excellence	0	0	23	0	37	15.7	60	6.16	68	120	21.86
ICT for teaching and learning process	48.2	5.87	36.79	5.89	62.27	9.71	31.7	1.77	34.4	179	23.24
Quality Assessment	0	0	0	0	17.92	.31	20.14	0	14.55	38.06	.31
Professional management of education	11.1	13.47	12.39	4.8	8.23	7.21	10.21	16.89	39.95	41.93	42.37
Total	59.34	19.33	72.18	10.69	125.42	32.93	122.06	24.83	156.9	379	87.78

Source: *Same as Table 16*

Strengthening of Research

An important function of UGC is to maintain high standards of education by promoting research. For this purpose, various programmes are supported by the UGC. It is important to note that promotion of research in colleges receives the low priority due to resource crunch. Out of Rs. 395.13 crores, colleges received only Rs. 73.23 crores, major share being spent on the university.

The development of university departments has been undertaken by the UGC under the Special Assistance Programme (SAP), ASIST and ASIHSS. The amount spent under SAP was Rs. 171 crores under science and Rs. 68 crores under humanities and social science in 10th plan. Development of university departments is the most crucial intervention in higher education. The thrust in the 11th plan should be laid down to assist at least one department in every university. Selected university departments may be upgraded into centres of excellence in teaching and research. This also requires a substantial jump in investment under this head.

Table 22 Strengthening of Research

(Amount in Rs. Crore)

Scheme	02-03		03-04		04-05		05-06		06-07	Total 02-03 to 05-06	
	U	C	U	C	U	C	U	C	U &C	U	C
Special Assistance Programme (SAP) in Science & Engineering & Technology	26.07	3.88	41.47	7.33	48.85	8.94	26.98	8.35	48.4	143.37	28.5
Special Assistance Programme (SAP) in Humanities, Social Sciences, Arts, Law and allied Disciplines	7.87	3.66	9.32	6.52	14.16	8.66	9.75	8.62	22.5	44.1	17.46
IUC's & National facilities	48.69	.05	29.1	.32	21.92	0	27.45	0	24.25	127.16	.37
Advance centres for science education and research	0	0	0	0	0	0	0		0	0	0
Research, Awards, Seminars and Workshops	2.27	1.89	2.29	4.07	2.96	5.17	2.76	5.77	11.95	10.28	16.9
Total	84.9	9.48	82.17	18.24	87.89	22.77	66.94	22.74	110.1	321.9	73.23

Source: *Same as Table 16*

IUC's have also been supported to the tune of Rs. 127 crores. There is serious under- investment in research in terms of Research awards, Research fellowship, Research workshops, seminars and conferences, as 27 crores only have been spent under this head. No amount could be spent under advanced centres for science education and research during the 10th plan.

Financial Management Information System

A sound financial management information system (FMIS) is essential to monitor the programme efficiently. The 11th plan should have a software-based financial management system. All the financial information received from the university should be in a precise format that should have a software backing. The advantage of such an FMIS is that financial information can be generated under all possible classifications to obtain information on financial utilization. This will facilitate quick decision, better fund flow and efficient financial monitoring of the programme. As a corollary to the FMIS, the Physical Management Information System (PMIS) should also be developed to assess the physical targets and generate tables under different classifications to monitor the programme. An example of best practice using FMIS and PMIS in the implementation of Sarva Shiksha Abhiyan is available. UGC should follow them to achieve efficiency in the implementation of programmes.

Revamping Present System of Classification

Five-Sectoral classification of accounts presented above suffers from many problems. Firstly, Development grant is given to support infrastructure and other sectors are defined on the basis of objectives such as access and equity, relevance, quality and excellence and research. However, schemes falling under some sectors may not fulfil a particular sector's objective. For example, Academic Staff College (ASC) has been kept under sector 3 that relates to promotion of relevant education. However, the ASC is related to the capacity building of teachers. Similarly, schemes relating to Incentives for Resource Mobilisation are put under sector 4 of Quality and Excellence. Training of Administrators, UGC's campus development and construction etc. are not directly related to quality and excellence. Grant for promotion of exports of higher education isa scheme under ICT for teaching and learning process. Its appropriateness is also questioned.

It is necessary that accounting of programmes and schemes under the 11th plan should have a scientific basis of classification. Supported by MIS software, it should be able to generate tables under all possible classifications for efficient allocation of resources.

Efficient Monitoring

An important aspect of planning and finance relates to the efficient monitoring of physical as well as financial indicators. A half yearly monitoring format should be placed on the website and the university-wise information can be obtained. Information can be received electronically from the respective university's website.

Conclusions

The following conclusions emerge from the analysis given in the section.

1. The planning process in higher education follows heavy top-down approach to planning. Institutional planning at the level of colleges and universities remains elusive. What is important to observe is that the principle in the top-down approach to planning remains obscure. It is neither guided by the man-power approach nor by the need-based approach. It is severely constrained by resource availability and all rational arguments put forth by the MHRD fail to carry the weight in the Planning Commission. It is amply proved by the meagre resource allocation for the first year of the 11th plan.

2. Not only is the amount of planned resources inadequate, the percentage distribution also suffers from imbalance. Development of state universities received 43% of plan resources, whereas the central universities received 39% of planned resources under university sector. If the plan assistance to the colleges under state universities is included, 57% of plan resources are spent on financing a much bigger constituency of higher education. Considering the size and number of state universities and colleges, a much larger proportion of resources need to be spent on state universities and colleges.

3. A major portion of plan grant is to develop the infrastructure of universities and colleges. Universities receive 61% of total plan grant to universities and colleges receive 47% of total plan grant to colleges. In terms of priority, UGC assigns top priority to infrastructure, given the need of universities and colleges. Allocation of resources for meeting other important objectives also badly suffers.

4. Among the four major objectives of higher education – access and equity, relevance, quality and excellence and research – quality and excellence received the greatest priority both among colleges as well as universities. Strengthening of research received the second priority under universities, whereas research had the lowest priority under colleges. Since quality and excellence go together with the research, improvement in quality at the college level can take place only when research funding for college teachers is stepped up. In terms of allocation of resources, promoting objectives of access and equity and relevant education seems lesser importance in the case of universities.

5. Promoting quality and excellence amounted to developing universities and colleges with potentials for excellence, integrating ICT in teaching and learning process and more importantly for quality assessment. Support to professional development of teachers through the academic Staff Colleges is provided under relevant education. Besides, meager amount for workshops, seminars and research support is given under the heading research. All the financial support given to teachers for their professional development needs to be increased.

Section four: Investment Gap in Higher Education

A Dominant Framework: A dominant framework in the financing of higher education was guided by the philosophy of almost exclusive reliance on the state. As a result, higher education's place as a principal claimant on public treasuries was recognized almost everywhere in countries – rich or poor. The above paradigm in financing of higher education was quite successful, though in varying degrees, in making transition from the elite phase to the phase of mass higher education – the phase necessitated by the growth of industrial society in terms of demand for skilled and professional work- force.

The success of the state paradigm may be attributed to the rapid growth process and the ability of the state to siphon off the surplus through the instrumentality of tax. Taxable resources could finance the public provision of higher education whereas the private cost of higher education was financed by the household/parents. Higher was the public sharing of total costs, lower was the private sharing of the costs, as subsidy was extended not only in the form of negligible tuition fees but also in terms of scholarship, cheaper transport, book grant, subsidized food and electricity.

The economic crisis that was reflected in recession and the stagflation in 1970's and early 1980's, however, constrained state in many ways to sustain the funding of higher education without any limit. The tax as % revenue expenditure fell and borrowing and deficit financing revealed inflationary potential. The result was that the state funding of higher education met with serious shortfalls and public expenditure on higher education as a % of GDP fell.

In many countries, the adjustment process was taken up seriously. Step was taken to diversify the financing of higher education. In some countries, state funding was exclusively relied upon to finance higher education. However, with the increasing demand and cost of higher education and a decline in the per capita public expenditure on higher education, the quality was severely affected. In many countries, decline in public spending was associated with rising private spending. Rise in private spending could meet a part of rising cost and compensate for decline in public spending. However, uncontrolled expansion of privatisation could not contribute to quality, it rather led to the commercialization of higher education that adversely affected the equity objective.

In the light of the above discussion, the section focuses on the four-fold scenario of the mix of public and private financing.

Four-Fold Scenario of The Mix of Public and Private Financing

Global Picture

A global picture of the four-fold scenario of a mix of public and private expenditure on higher education is presented in the following diagram. Four zones are drawn based on a cut-off percentage of 0.5% GDP on public and 0.5% GDP on private expenditure on higher education. Countries in the Zone 1 do not figure here as the data for most of the least developing countries are not available. It is, however, presumed that most of the LDC's would fall in this zone which is a zone of low public as well as private spending. Zone 2 in the diagram is the densest zone. Many European countries have been able to develop the higher education institutions by means of high public spending. Private sector has contributed only marginally in UK, Mexico, Italy, Argentina and Netherland. Sweden has one of the highest public sector expenditure on higher education as a proportion to GDP. China would also probably figure under zone 2. The past experience shows that higher public funding for higher education is the main source of developing quality institutions in the country. There

is only one country, Chile, that figures in zone 3 having lower public spending but higher private spending. There is no data available. However, India may possibly figure in this zone with high degree of privatisation and low public spending as a proportion of GDP. There is a possibility that Countries like Japan, Malaysia and South Korea would fall under Zone 3 or may possibly fall in Zone 4. US, Australia, Bulgaria and Paraguay fall in Zone 4 characterized by high public as well as private spending. Public spending on higher education is a crucial element in the financing of higher education. Cost sharing with the private sector can provide additional funding for higher education to meet the cost for increasing participation and for improving the quality of higher education. USA is the most successful country in tapping diversified resources for financing higher education. The strategy of increased public spending can go hand in hand with cost sharing with various other stakeholders of higher education.

Dynamics of the Inter Zone Movement

Four scenarios depict the mix of public and private financing of higher education. The main issue is to move away from Zone 1 of low public and private spending. This is the feature of many least developing economies as well as some less developing economies. These countries have lower participation and lower quality of higher education. Countries in zone 1 have twin challenges to increase public spending and attract private investment in higher education. A third strategy could be to attract foreign direct investment.

The country such as China has relied heavily in the past on public spending in higher education. China has also achieved high participation at the level of school education. Public policy has now favoured a shift to the policy of attracting private investment. As a result successful transition in the movement to Zone 4 can be accomplished with a little great effort to restructure public university and controlled privatisation. In many European countries, a successful transition to Zone 4 is possible with greater efforts towards privatisation, however, with a strong public system. With a strong public system the government is innovating instruments to transfer the cost to the students within a framework of public system of higher education. As a result, cost transfer is not causing any decline in the quality. Equity is taken care by substantial public spending.

In Zone 3, private spending is already very high. There may be large number of self-financing institutions. Fee structure may be high. Cost sharing, therefore, needs to be regulated. With high burden of cost sharing upon students, it is necessary that state subsidy is targeted towards the poor. The right trajectory to move to Zone 4 would be to increase public spending.

The point to note is that any strategy of financing higher education must take into account the dynamic movement towards high public and high private spending to raise participation as well as quality in higher education. Countries either need to move towards high public spending from Zone 1 and 3 or they need to move towards high private spending from Zone 1 and 2. The important point to note is that countries must have a dynamic approach to the interzone movement which implies move towards diversified funding strategy for higher education.

Features of four zones may be summarised as follows:

Table 23 Zonal Scenario of Public-Private Financing

Zone 1	Zone 2	Zone 3a	Zone 3b	Zone 4
Features of LDC's and Developing countries.	Features of some developing countries such as China and many advanced European countries.	Features of developing countries like India.	Featues of Japan and Korea.	Featues of US and Australia
Higher education is not a significant contributor to growth	State responsible to make higher education as an engine of growth	Higher education though supported by the state is guided by the private initiative which is largely uncontrolled	Higher education is externally controlled by the state and cost sharing is guided by the quality objectives	education is funded by the state and the diversified private sources are being explored
Suitable trajectory is first moving to Zone 2 by increased public spending and then to zone 4 by increasing private participation	Suitable trajectory is to increase private participation to promote access and quality by moving to zone 4	Suitable trajectory is to move to zone 4 by substantially stepping up public expenditure	Suitable trajectory is to move to zone 4 and link cost sharing with the equity objective while staying in zone 3	Needs to further step up the diversified funding strategy
Unsuitable trajectory would be to increase private spending without substantial increase in public expenditure.	Unsuitable trajectory is to decrease public spending while increase private participation by moving to Zone 3	Staying in Zone 3 for long period would adversely affect the equity objectives of higher education		

This calls for an estimate of unit cost of higher education and the estimate and projection of enrolment. An attempt may be made then to identify the expenditure and investment gaps in higher education. A discussion of suitable instruments for implementing policy that determines how much and in what way cost sharing with the other stakeholders of higher education may be attempted. A simple analytical framework of cost sharing is presented below before estimating expenditure and investment gaps in higher education.

Framework of Cost Sharing

Assume

Total cost of required current expenditure and investment

in higher education during 11th plan = X

Public expenditure, where a is the proportion of X that is to be

met through plan and non-plan support of the centre and state = a. X

Private expenditure i.e. Cost sharing with parents and students = X – a X

= X (1 - a)

Obviously, high value of 'a' implies lower cost sharing with students and parents.

Cost sharing may take following forms:

(I) Uncontrolled Private Expansion and Commercialization: charging of tuition and other fees from students in order to make profit.

In this case actual cost sharing (Y), Y > X (1 – a) Where, Y – X (1 – a) = P, profits of the private sector.

Part of profit only may be used for expansion or to improve quality

In this case, burden of full cost as well as the profit falls on parents, out of present income. To eliminate the burden of profit, the private sector may be asked to spend a certain percentage of expenditure on measures that promote equity, as the victim of higher fees are the poor students.

(II) Controlled Public Expansion: charging of tuition and other fees from students in order to make surplus that may be used to subsidise poor students or invest in quality or invest to raise capacity

In this case actual cost sharing (Y), $Y > X (1 - a)$ Where, $Y - X (1 - a) = P$, surplus of the public sector.

Surplus may be used to subsidise poor students or invest in quality or invest to raise intake of students

In this case, burden of full cost as well as the surplus falls on parents, out of their present income. However, cost sharing finances higher education for its own expansion.

The choice of public policy between (I) and (II) goes in favour of (II) on the ground that a part of the surplus raised by the public sector may be transferred to the poor students in the form of scholarship or other benefits such as subsidized food, hostel or book. This assumes the efficiency of the public institution to transfer the surplus to the needy students. At the same time, it assumes that regulation of the government will be strong enough to transfer the surplus to the needy students. The argument against the uniform increase in fees is that the poor students will have to pay the high fees and will be compensated later. As a result, the policy will prohibit them to enroll in the higher education institutions. Hence, the effect of (II) is also akin to discriminatory fee structure in which poor students do not have to pay fees whereas the rich is obliged to pay higher amount to compensate for the fees of the poor as well.

(III) Cost Sharing out of Future Income: Tuition and other fees may be paid out of future income that is earned so that cost incidence is shared between present income and future income. Goal oriented strategies for quality & equity may be devised.

In this case,

Cost sharing $= Y1 + Y2$

$=$ cost sharing out of present income $+$ cost sharing out of future income

$Y1 + Dis (Y2) = X(1 - a) \; Y1 < X (1 - a)$

In this case, burden of full cost as well as the profit/surplus falls on parents present income as well as the future income of parent or the students. Thus, the burden of cost is deferred to the future.

It is possible to have a system where a part of financing requirement is met through tuition and a part through newer credit instruments that can defer the payment to the future.

The institutional mechanism for financing higher education through the deferred payment out of the future income needs to be explored in India on the basis of experiences in many countries.

(IV) Cost Sharing Out of Other Sources: Cost of higher education may be shifted on various indirect beneficiaries of higher education. Society and the industrial sector is the indirect beneficiary and may be

subjected to voluntary contributions. If a part of the cost is met out of other sources, the incidence of cost sharing with students out of their present or future income will be further reduced.

Expenditure and Investment Gaps

Cost per Student

Per student cost of educational programmes varies depending upon the levels of higher education such as Under Graduate (UG), Post Graduate (PG) and research. It also varies across general, technical and professional/specialized courses. Among the general level of education, it varies depending upon arts, commerce and science streams. Per student cost will also depend on the size of educational institutions. More importantly, for different levels, streams and types of educational programme in higher education, different costs reflect the various qualities that are again reflected in teacher pupil ratio, and infrastructural support and non teaching cost. There are estimates of cost based mainly on recurring expenditure. It is difficult to arrive at the ideal cost per student that would be required to maintain the quality of higher education above average level. Leaving out for the moment the theoretical difficulties in estimating cost per student, an attempt may be made to provide the empirical estimate. Some benchmark cost per student may be estimated for average and good quality institutions.

Empirical Evidence

The empirical evidence based on some estimates is given below:

a. Higher education in Punjab Vision 2020, Dept of Higher Education (pp 63-85), Govt. of Punjab, Chandigarh, 2005: As per this report, cost per student varies in the following range:

Variation in the Range

University (PG and research) cost per student	-	Rs. 92650 – Rs. 99840
Colleges (UG) cost per student	-	Rs. 5225 – Rs. 14552

b. A study conducted by NIEPA (2005b) noted the following cost per student for composite UG, PG and research students.

Central University (AMU)	-	Rs. 86468
Deemed University (based on 3 samples)	-	Rs. 35106-Rs. 59582
State University	-	Rs. 1422 – Rs. 7450

(Based on sample of 25 universities)

c. Aruchami (2006) provides the cost per student of government colleges and private self financing colleges based on a representative sample from the colleges of Tamil Nadu as follows:

Government colleges	-	Rs. 21394
Private self-financing colleges	-	Rs. 20875*

* This is based on existing tuition fee structure in private colleges that may not adequately pay average salary as per the government colleges.

d. Based on Report of the Group for Central University to Oversight Committee

(2006): Table 24 below gives the estimates of cost per 1000 students for Delhi University colleges. These estimates have been adjusted downwards. For example, the PTR of 20:1 is assumed, instead of 7:1

in the report. Similarly, non-teaching staff is assumed to be 25 for 1000 students instead of 77. Based on above and considerably smaller non-salary component of Rs.10000 per student, a recurring expenditure of Rs. 1.975 crores has been estimated for 1000 students. Thus, per student recurring cost is estimated at Rs. 19750. Academic capital cost is further estimated at Rs. 1.30 crores for 1000 students as opposed to the group's estimate of Rs. 14.19 crores. In estimating academic capital cost laboratory, IT, library, equipment and other cost have been taken into account. For building and classroom and hostels Rs.2.5 crores and Rs.1.5 crores have been estimated respectively. Estimated recurring cost and non-recurring cost turn out to be Rs.1.975 crores and Rs.5.30 crores respectively. The total cost is Rs.7.225 crores.

e.   Based on a sample: A sample of 33 colleges was obtained from the Principals of the Degree Colleges spread all over the country during 2004-05. The data referred to the year 2002-03. The following results on expenditure and receipts sides were found:

Table 24 Estimated Cost per 1000 student

Description	Moily Committee	11th plan Estimate
Teacher	143	50
PTR	7:1	20:1
Non Teacher	77	25
Recurring (crore)		
Teacher Salary	6.58	1.50
Non Teacher Salary	1.58	0.375
Non Salary	5.6	0.10
Recurring Total (A)	13.98	1.975
Capital		
Laboratory	5.77	0.40
IT	.97	0.40
Library	1.02	0.20
Equipment	5.55	0.20
Other	.88	0.10
Academic Capital Cost (B)	14.19	1.30
Building & Classrooms	23.58	2.5
Hostel	2.54	1.5
Non Academic Capital Cost (C)	26.12	4.0
Total Cost (B+C)	5.30	
Total Cost (A+B+C)	54.29	7.225

Expenditure

1. Average expenditure per student = Rs. 14915/-

2. Average salary per teacher = Rs. 201375/-

3. Ratio of non-teaching cost to teachers salary = 0.88.

Receipts

The following proportion in the source of different funds to total funding was found:

1.   Funding from government as a proportion to total = 81.5%

2.   Funding from UGC as a proportion to total = 2.5%

3.   Funding from Students as a proportion to total = 9.5%

4.   Funding from Managing Trusts as a proportion to total = 2.3%

5. Funding from Other sources as a proportion to total = 4.2%

The above results show that average expenditure per student was Rs. 14915 and average salary per teacher was Rs. 2 lakhs in 2002-03. The ratio of non-teaching cost to teachers' salary was observed to be 88%.

On the receipts side, it is found that 84% of the resources were being mobilized from government including UGC and 16% were being mobilized from sources other than the government, students directly contributing to 9.5% of the total through fees.

From the above figures, it may be observed that cost per student may be determined in a range. Lower range may reflect quality on the lower side and higher value in a range will reflect quality on higher side.

9.4.3.1.2 Analytical approach to estimate cost per student

Kothari Commission (p.476) presents the following formula to arrive at the cost per student:

Cost per student = $\dfrac{a(1+r)}{t}$

Where a = average annual salary of teachers

r = ratio of all non-teacher cost to teachers' salary

t = pupil teacher ratio (PTR)

Based on the sample of colleges referred to above, we may assume that,

a = Average salary per teacher per annum in 2006-07=Rs. 2.5lakhs[1]

$r1$[2] = ratio of non-teacher cost to teachers salary from 0.5 to 0.7 for average quality institution

r2 = ratio of non-teacher cost to the salary from 1 to 1.25 for good quality institution.

Average PTR1 = 20 : 1 for average quality

PTR2 = 15 : 1 for good quality

Based on the above assumption[3], we note that the

Range for cost per student for average quality institutions = Rs. 18750 to Rs. 21250

Range for cost per student for good quality institutions = Rs. 33333 to Rs. 37750

In the above calculation a rather sound basis for assuming a, r and PTR may be found by a large sample size. For estimating the total cost of higher education, an average cost of Rs. 20000 is taken for average quality institutions and Rs. 35000 is taken for good quality institutions.

As per the new pattern of college accreditation, out of 1717 colleges, 447 colleges were awarded B++ and above rating while 1270 colleges were awarded B+ and below rating. If it is assumed that colleges

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[1]   In a sample the average cost per teacher was Rs. 2 lacks per annum in 2002-03. 25% increase in salary per teacher is added to arrive at average cost per teacher in 2006-07 at Rs. 2.50 lacks per annum.

[2]   r has been found to vary in NIEPA study (2000) very widely from 0.32 to 1.25, barring some extreme values

[3]   Kothari Commission (1964-66, p.483) assumed a PTR of 15, 11, 8 for undergraduate arts & commerce, undergraduate science & vocational, post graduate arts & commerce respectively. Percentage of non teacher cost to teacher cost was taken as 66.7 for arts and commerce, 118.1 and 100 for undergraduate science & vocational and 118 for post graduate arts & commerce

having B++ and above rating are quality institutions, then 26% colleges may be said to be quality institutions and 74% as average institutions.

Given the cost per student, the existing enrolment in the base year 2007 and additional enrolment during the 11th plan period, the required additional expenditure can be projected. The method of projection will be multiplying base year enrolment with the recurring expenditure and the additional enrolment with the capital expenditure. For base year projection, the cost for differences in the quality will also be taken into account.

Estimates of current expenditure gap in base year 2006-07

Current expenditure gap in base year 2006-07 is estimated under simplifying assumptions. Aggregate enrolment is estimated at 12.33 million in 2006-07. On the basis of NAAC data, 25% of enrolment is assumed in good quality and 75% in average quality institutions. Cost per student for good and average quality institutions are assumed at Rs. 35000 and Rs. 20000 respectively (See previous section). Based on differential cost and enrolment estimate from above, the required total expenditure of Rs 29280 crore is arrived at. This expenditure should be met out of central and state plan expenditure. On the basis of linear trend, the estimated central and state plan expenditure in 2006-07 was estimated at Rs. 10799 crores. Thus, current expenditure gap of Rs. 18481 crore existed. After accounting for the fact that 16% of total fund is financed from sources other than government as observed from a thin sample, a sum of Rs. 4684 crores is accounted for existing privatisation. This gives a figure of Rs 13797 crores as current expenditure gap. Current expenditure gap is 1.3 times the existing budgetary resources (centre and state non-plan). The question is how can the expenditure gap be financed?

Table 25 Estimates of Current expenditure gap in base year 2006-07

Particulars	
Aggregate enrolment (estimated in million) in 2006-07	12.33
25 % of aggregate enrolment in good quality institutions. (in million)	3.08
75% of aggregate enrolment in average quality institutions. (in million)	9.25
Cost per student for good quality institutions. (in Rs.)	35000
Cost per student for average quality intuitions (in Rs.)	20000
Current expenditure for 25% enrolment (in Rs. crore)	10780
Current expenditure for 75% enrolment (in Rs. crore)	18500
Total expenditure (in Rs. crore)	29280
State + Central Non-Plan expenditures (estimated for 2006-07) based on linear trend from the 90's (in Rs. crore)	10799
Expenditure gap (in Rs. crore)	18481
Present Private Expenditure cost sharing (16% of total expenditure) (in Rs. Crore)	4684
Expenditure gap after accounting for Private expenditure cost (in Rs. crore)	13797

Estimates of Investment (Capital and Revenue Expenditure) and Gaps during 11th Plan

After estimating the current expenditure gap in 2006-07, it is attempted to find out the required investment during 11th plan for additional enrolment. Based on the 5.5% historical compound growth rate, the enrolment is projected to grow from 12.33 million to 16.11 million, making a net addition of 3.78 million during 11th plan. The basis of capital as well as revenue expenditure requirement is taken from Moily and considerably modified. Capital expenditure is Rs. 53000 per student and recurring expenditure is Rs. 19750 per student. Total required investment during the 11th plan works out at Rs. 41639 crores. The above investment requirement should primarily be met from central and state plan expenditure.

Table 26 Capital and Revenue Expenditure Required
for Additional Enrolment during 11th Plan

	Alternative 1: (5.5%) historical compound growth rate (Base year i.e 2007 enrolment= 12.33 million)	Addnl. Enrolmt.	Capital expenditure @ Rs. 53000 per student	Recurring expend. @ Rs. 19750 per student	Total required investment (Rs. Crores)	Central and State Paln Trend (Rs. Crores)	Investment gap (Rs. Crores)
2007-08	13.01	0.68	3604	1343	4947	1413	3533
2008-09	13.72	0.71	3763	2745	6508	1489	5018
2009-10	14.48	0.76	4028	4246	8274	1565	6708
2010-11	15.27	0.79	4187	5806	9993	1640	8352
2011-12	16.11	0.84	4452	7465	11917	1716	10200
11th Plan Addition	3.78	3.78	20034	21605	41639	7825	33813

Strategies to Meet Current Expenditure and Investment Gaps

From the above analysis, it was found that on non-plan side, Rs. 13797 crores was the expenditure gap in the base year 2006-07, even allowing for the present level (16% including 9% of fees component) of cost sharing with the students. On the plan side the total investment gap for enrolling additional 3.78 million students was Rs. 33813 crores during the 11th plan period. Hence, the total expenditure and investment gap is of the order of Rs. 47610 crores.

What strategy needs to be followed in the financing of higher education? As noted earlier that deceleration in the financing of higher education since 1980's is systemic and structural retrogration is caused mainly due to neo-liberal policies of the state, hence, the value of co-efficient 'a' in cost sharing formula is not expected to go up substantially. Effort needs to be made to finance the gap in such a manner that the burden of cost sharing does not fall on the poor.

Fees as a Source of Internal Financing: There has been a great deal of controversy around fees. It is argued that fee in higher education is low and needs to be raised to part finance higher education. There are contesting views to this. They argue that fees have almost reached the maximum limit and should not be raised, as it would raise the cost of education for students.

Based on our observation of samples from undergraduate government and government aided colleges, it can be concluded that in the case of government and government aided colleges, financing through fees can be increased by 10% of expenditure and investment gaps. Thus, Rs 1379 crores and Rs. 4761 crores can be raised through fees to finance expenditure and investment gaps respectively. Fees will have to be raised not through uniform hike but through a discriminatory fees structure under which the rich must suffer the burden of fee hike, whereas the poor should be completely exempted from hike in fees. This means that a rich student may have to face steep fee hike of the order of 20 to 30 per cent. An annual fee hike must be then indexed to the rate of inflation and a very small mark up for increase in quality.

Contribution from Society: It was pointed out that society is an indirect beneficiary of higher education. The benefit to the society cannot be measured in precise terms. It is desirable that an institutional mechanism should be evolved so that voluntary contribution for an individual institution or for all the institutions of higher education could be raised. The higher education fund can be established with a seed funding from the government and in partnership with the private sector. Adequate autonomy in the raising of fund should be given

to the private managers of the fund. The fund could be raised through donations, charity shows, contributions under exemption from tax. During the 11th plan, Rs. 10000 crores may be targeted through contributions from society.

Future Income: It is suggested in section 6 that a substantial portion of finance can be managed through a contingent income approach. Under this approach loan can be arranged for the students to pay for the tuition and the students can pay the loan out of future income. It is possible that government can play a leading role in students loan so that equity issue can be adequately taken care of. For example, grants, scholarship and easy repayment can be built into the students' loan system to make the financing of higher education broad-based.

Conclusions

1. Global scenario in the mix of public and private spending on higher education suggests that in the past high public spending in higher education was a dominant strategy in the financing of higher education. Dynamics of inter-zone movement suggests that through a diversified financing strategy high proportion of public as well as private spending in higher education can be approached.

2. A framework of cost sharing suggests that there are three policy options: (i) In the case of uncontrolled private expansion and commercialization burden of full cost as well as the profit falls on parents, out of their present income (ii) In the case of controlled public expansion burden of full cost as well as the surplus falls on parents, out of their present income. However, cost sharing finances higher education for its own expansion. Surplus may be used to subsidise poor students or to invest in quality. The choice of public policy between (i) and (ii) depends on the fact whether public institutions will efficiently utilize the surplus or government through effective regulation will control commercialization and ensure quality and equity.

3. Cost sharing can also take another form in which a part of financing requirement is met through present and a part through newer credit instruments that can defer the payment to the future.The institutional mechanism for financing higher education through the deferred payment out of future income needs to be found out in India on the basis of experiences available in many countries.

4. Notwithstanding the varying estimates of cost per student, at 2006-07 current expenditure gap of Rs. 18481 crore is estimated. After accounting for the fact that 16% of total fund is financed from sources other than government as observed from a thin sample, a sum of Rs. 4684 crores is accounted for existing privatisation. This gives a figure of Rs 13797 crores as current expenditure gap. Current expenditure gap is 1.3 times the existing budgetary resources (centre and state non-plan) at Rs. 10799 crores in 2006-07.

5. Based on the 5.5% historical compound growth rate, the enrolment is projected to grow from 12.33 million to 16.11 million, making a net addition of 3.78 million during the 11th plan. The basis of capital as well as revenue expenditure requirement is taken from Moily and considerably modified. Capital expenditure is Rs. 53000 per student and recurring expenditure is Rs. 19750 per student. Total required investment during the 11th plan works out at Rs. 41639 crores. The above investment requirement should primarily be met from central and state plan expenditure. Hence, the total expenditure and investment gap is of the order of Rs. 47610 crores.

Section five: Recommendations of Commissions And Committees On Financing Higher Education

It was shown in the previous sections that there has been secular tendency of deceleration in public expenditure in higher education. The past trend shows that deceleration is marked by fall in planned investment. The failure of planning has led to large investment gap in higher education. Huge investment gap, in turn, is a function of the education policy followed since 1980's. Failure in education policy can best be understood in terms of failure of the government to honour the recommendations and commitments of various committees. It has reached a stage where commitments of the government to finance higher education seem almost impossible to be attained. The duality in the commitment and implementation has further created ambivalence in the financing of higher education. There has been some sort of a silent withdrawal of state which had its repercussions on freezing of appointments on the vacant positions and ban on creation of new posts of teachers. A short review of recommendations is undertaken in this section to reflect on the nature of public policy in financing of higher education. Is there any scarcity of resources or a short-sighted policy or that the state prefers to live with ambivalence?

It would be interesting to explore various recommendations relating to the financing of higher education from Kothari Commission (1964-66) to the latest report on higher education of the National Knowledge Commission (2006). How far these recommendations were translated into government's commitment to fulfil those recommendations? This will provide an insight of the real picture that is likely to emerge and help to develop a realistic assessment of the financial resources that can be made available by the government and the resources that can be shared with the students.

Public Spending on Education

One of the important recommendations relates to the public spending on education. Kothari Commission (1964-66) was the first to suggest that government should have minimum commitment to finance upto 6% of GDP on education. The government in its National Common Minimum Programme (2004) reiterated that 6% of GDP should be devoted for education. CABE Committee on Financing Higher Education and National Knowledge Commission's Note on Higher Education, 29th November 2006, also support the previous Committess recommendations. (See Table 27)

Table 27 6% of GDP on Education

Commissions and Committees	Recommendations
Kothari Commission (1964-66)	Recommends 6% of GNP on education
Common Minimum programme (2004)	Reiterates that 6% of GNP be spent on education
CABE Committee on Financing of Higher and Technical Education (2005)	• 50%, 25%, 25% of total budget be allocated to elementary, secondary and higher education respectively • 35, 1.5%, 1% and 0.5% of GNP be spent for elementary, secondary, general higher education and Technical education respectively
Report of the committee on NCMP's commitment of 6% of GDP to Education, NIEPA (2005c)	The report notes that at 2004-05 prices budgeted expenditure on general and technical education should go up gradually from Rs. 9562 crores and Rs. 3274 crores in 2004-05 (budget) respectively to the level of rs. 27812 crores and Rs. 14327 crores respectively in 2007-08 (i.e 1st year of 11th Plan) and to the level of Rs. 45118 crores and Rs. 23243 crores in 2011-12 (i.e last year of Plan) to reach 6% of GDP on Education and 1% of on general and 0.5% of GDP on technical education (As per the alternative B scenario where 6% of GDP on education is reached gradually rather than in one go)
National Knowledge Commission Note on Higher Education, 29th November, 2006	In an ideal world, government support for Higher Education should be at least 1.5%, if not 2% of GDP, from a total of 6% of GDP for education. The government should endeavour to reach these levels by 2012.

The recommendations of committees noted above to increase public expenditure on higher education have become a matter of faith. Fiscal reform during 1990's known as structural adjustment policies have adversely affected the public spending on higher education. The government expenditure on education as a percentage of GNP has comedown to 3.52% in 2004-05. The government expenditure on higher education as a % of GNP has come down from 0.46% in 1990-91 to 0.37% in 2003-04 (BE) and from 0.15% of GNP in Technical Education in 1990-91 to 0.13% of GNP in 2003-04 (BE). Between faith and practical reality there is still a wide gap that needs to be bridged. To fulfil the vision of India as knowledge economy necessitates heavy investment in the field of higher education as specialized human resource is the necessary condition of the knowledge economy.

OECD countries show a much higher percentage expenditure of GDP on higher education. Even in Asia and Pacific countries, New Zealand, Australia, Kuwait, Malaysia, Hongkong, Singapore all spend more than 1% of GDP on higher education. If India has to catch up with the above countries, public spending on higher education needs to be stepped up in the 11th Plan.

Disconnect Between Committees, Commitments and Implementation

It is important to note that in spite of Kothari Commission's recommendations and its general acceptance by NPE, 1986, the commitment of 6% of GNP on education does not find mention in the 1986 policy statement. Although government reiterated in 2004 that 6% of GNP be spent on education, however, implementation of the policy has removed far from commitment. If the allocation of resources for education and particularly for higher education moves away from the repeated recommendations made by various Committees and Commissions, there is need to understand the disconnect between the two and accept the reality. Recommendations of Commisions and Committees are made on academic considerations i.e. economic and social rationales (John Edward P. St., 2005); however, political process may not always support those rationales.

Recommendations on Tuition Fees and Raising Internal Resources

There has been enough indication that state alone cannot support the expanding demand and increasing cost of higher education. There were many recommendations on increasing the fees and generating internal resources for higher education. The national policy on education, 1986 notes that fees would be raised at higher level of education. 10th plan notes that it is abysmally low. CABE Committee on autonomy notes that internal resources should be exclusively used for development purposes. In respect of self-financing institutions/courses, it recommends that fees should be kept at levels which meet the actual cost and create some resonable surplus for developmental purposes. CABE Committee on financing of higher education notes desirable upper level of all types of student fees may be 20% of the recurring requirements of the universities. It prefers increasing resources through taxation and does not prefer discriminatory fee structure. Knowledge Commission favours 20% fees as a norm for all institutions of higher education. A gradual process of increase in fees indexing it with prices is suggested by the Knowledge Commission. (See Table 28)

Table 28 Recommendations on Tuition Fees and Raising Internal Resources

NPE 1986	Raising fees at the higher levels of education is noted.
Punnaiya Committee (1992-93)	The recommendations of Punnaiya committee were limited to central universities, Deemed to be universities, Delhi University colleges, and BHU as per its terms of reference. It did not examine the financial position in regard to state universities. Its recommendations are largely quoted and are made to be applicable to all institutions whether central, state or deemed universities. Some specific recommendations are as follows:
	Tuition fees may be revised upwards with immediate effect and may be periodically adjusted to the rise in costs
	Other fees must be so charged as to recover the recurring costs on operations
	Resources generated by the universities should constitute at least 15% of the total recurring expenditure at the end of first five years and at least 25% at the end of ten years
10th Plan	The fee structure in the universities is abysmally low and has remained static for more than three decades. The universities should, therefore, make efforts to rationalise the fees and attempt greater generation of internal resources. The extent to which universities can hike fees needs to be studied
CABE Committee on Autonomy of Higher Education Institutions, MHRD (2005b)	Institutions should have autonomy in deciding the fee structure for different courses in consultation with State Government. The internal resources generated by an institution should be exclusively used for development purposes and should not be adjusted with any other grants provided by the government
	In respect of self-financing institutions/courses in government and government aided institutions, fees should be kept at levels which meet the actual cost and create some resonable surplus for developmental purposes. Institutions must have disclosure standards to contain malpractices in relation to fees.
	The scheme of UGC to promote internal generation of resources should be more broad based and be redesigned to incorporate the aspects of financial incentives based on performance indicators
CABE committee on Financing of Higher Education (2005)	A desirable upper level of all types of student fees may be 20% of the recurring requirements of the universities. Revenue generation through student fees beyond 20% may seriously affect access to higher education. Above rates of 20% cannot be uniform for all institutions
	There should be differential fees across Central and State Universities, general and professional institutions, under- graduate and post-graduate colleges etc.
	Considering practical difficulties in having a sound differential fee system, the best option left is progressive taxation rather than progressive structure of fees
	A sound method of cost recovery is to serve rural areas for a minimum period
	High fee rates for foreign students may not necessarily generate huge funds for HE institutions
National Knowledge Commission Note on Higher Education, 29th November, 2006	It is for universities to decide the level of fees but, as a norm, fees should meet at least 20 per cent of the total expenditure in universities. In addition, fees need to be adjusted every two years through price indexation. Such small, continuous, adjustments would be absorbed and accepted far more easily than large, discrete changes after a period of time. This rationalization of fees should be subject to two conditions: first, needy students should be provided with a fee waiver plus scholarships to meet their costs; second, universities should not be penalized by the UGC for the resources raised from higher fees through matching deductions from their grants-in-aid
"Towards Faster and MoreInclusive Growth - An Approach to the 11th Five Year Plan" during November, 2006	Notes internal resource generation by the universities by realistically raising fees

Almost every committee has recommended rationalization in fees with a reasonable upward revision in fees. The limited findings available are presented to know how far it has been implemented.

Findings on Tuition and Fees
MHRD (1995) Education in India, Vol.II (S) 1989-90, New Delhi

The latest available statistics notes that fees as proportion of total income has come down from 36.8% in 1950-51 to 12.6% in 1986-87.

NIEPA (2000) Study: A study was conducted by Tilak and Geetha Rani on university finances in India. It examined, among other things, the fee income as a per cent to total income of the universities.

> According to the study, out of 36 Universities
>
> 6 universities charged fees in the range of 50% and above,
>
> 4 universities charged fees in the range of 30-50%
>
> 9 universities charged fees in the range of 20-30%
>
> 7 universities charged fees in the range of 10-20%
>
> 10 universities charged fees in the range of below 10%

It shows that highly differentiated cost recovery from fees across universities exists. There is scope for increase in fees in at least 17 universities that charge fees considerably below the level of 20%. 19 universities recover cost in excess of 20% where fees need to be rationalised or controlled.

Higher Education in Punjab Vision 2020 (2005): notes that in the context of Punjab tuition fee is very less as it accounts for only 1.8% of the total cost in government colleges. In private aided colleges in urban areas, its share is substantial i.e, 27% of total cost. However, it notes that other funds and fees together will be more than 25% of per student cost.

While majority recommendations have noted that increase in fees is necessary, still there has not been compensating increase in fees necessitated by decline in public expenditure and rise in the cost of higher education. Most state governmens have resisted increase in fees. As a result there has been sub-optimal level of fees in most government institutions. The effect of this has been either of the following:

1. Institutions have found own mechanisms to raise fund from the student.

2. There has been decline in the quality of teaching-learning process either due to shortage of infrastructure or shortage of teachers.

3. There has been a rise in the number of self-financing institutions that have begun to charge fees on full cost recovery.

State has remained a silent spectator. On the one hand, state did not allow a rational increase in fees in government and aided private colleges and, on the other hand, failed to control commercialization in private self-financing colleges. Although there was a move to enact legislation on admission and fees of private higher education institutions on the directions of honourable Supreme Court of India, the government seems to have deferred it. This has supported the process of autonomous liberalization. The result of the failure of policy has been that huge investment gap could not be financed to maintain quality and excellence in government and aided private colleges. Market was allowed to dominate higher education. Cost sharing with students or society was highly mismanaged. In this regard the official position of government on private investment in higher education needs to be further analysed.

Private Investment

There was an ambiguity in the approach towards private investment in higher education. The ambiguity led to ambivalence. NPE, 1986 state that commercialization will be curbed and norms and goals will be laid down to involve private sector. 10th plan mentions that strategy of the liberalisation of the higher education system would be adopted. Thus there seems to be conflict in the approach towards privatisation – policy document in favour of curbing commercialization, whereas the recent 10th plan document is in favour of liberalization. An approach to the 11th plan takes a very cautious approach. It declares that reasonable fees should form the basis of private participation and suggests greater clarity and transparency in the development of quality private sector education. National Knowledge Commission declares its intention to promote public–private partnership, where the private sector is supposed to finance. 10th plan, however, notes that private participation would be promoted in the management of colleges and deemed to be universities. There is also a lack of clarity on privatisation in terms of the objectives of privatisation. If the objective of privatisation is to increase efficiency, then private participation in the management may be desirable. If the objective of privatisation is to meet fund shortage, then private participation must clearly be to attract sufficient finance for higher education. In the case of latter, the issue of autonomy and accountability to the state should have been clearly determined. However, the problems still persist. The varying observations only increase the zone of doubts and darkness on the policy of private investment in higher education.

Table 29 Recommendations on Private Investment

NPE, 1986	In the interests of maintaining standards and for several other valid reasons, the commercialisation of technical and professional education will be curbed. An alternative system will be devised to involve private and voluntary effort in this sector of education, inconformity with accepted norms and goals
10th Plan	Plan would focus on increased private participation in the management of colleges and deemed to be universities. Strategy of the liberalisation of the higher education system would be adopted
National Knowledge Commission Note on Higher Education, 29th November, 2006	In principle, it should be possible to set up new institutions in higher education as public-private partnerships where the government provides the land and the private sector provides the finances.
"Towards Faster and MoreInclusive Growth - An Approach to the 11th Five Year Plan" during November, 2006	Private institutions can only develop if they are allowed to charge reasonable fees while also providing need based freeships and scholarships for a certain percentage of students. There is a need to review the system comprehensively to introduce greater clarity and transparency if we want to see a healthy development of quality private sector education

It is also important to note that Indian higher education has miserably failed to tap other sources of funding in spite of assertion in the 10th plan that avenues for receipt of contributions, donations, gifts, and sponsorships from the alumni, trusts, private sector and industries will be explored. Knowledge Commission has made suggestions to modify tax laws and trust laws. The Commission is also of the view that by creating opportunities in India the exodus of Indian students to foreign destinations can be stopped and estimated US$ 4 billion can be mobilized to finance higher education. CABE Committees have also suggested tapping other source of funds. In spite of all recommendations, the fact of the matter is that good old traditions of social contribution to the higher education have not been revived.

An approach paper on the 11th plan favours wider merit-cum-means based loan and scholarship programmes. However, CABE Committee on financing of higher education notes that loan programme cannot be viewed as an efficient solution to the problem of financing higher education as banks operate it on commercial lines. The Committee is in favour of Education Development Bank of India or Higher Education Finance Corporation to be established with the support of central and state governments and the corporate sector. It can float soft loans and even provide scholarship. However, it has so far not been under active consideration of the government. There is thus policy inaction to raise different sources of funding including the loan scheme. Crisis in the financing of higher education is basically due to exclusive reliance on single source i.e through general taxation. When the taxation as a source of financing dwindled there was resource crunch. Multiple source of financing, therefore, needs to be exploited to bridge the investment gap in higher education.

Conclusion

Huge Investment Gap caused by deceleration in the financing of higher education reflects a failure in the educational planning and policy of the neo liberal state.

Policy failure is first of all reflected in the inability of the state to meet 6 per cent of GNP on education. Almost all commissions and committees have been recommending it. Government has also accepted the recommendations. Nonetheless, there is a disconnent between the Committees, Commitments and Implementation. It may help to explain how a neo-liberal development contradicts its own stand that is taken on political and social considerations.

Another aspect of the failure of policy is seen on sharing of cost with students in terms of fee policy. Almost every committee has recommended rationalization in fees with a reasonable upward revision in fees. Most state governmens have, however, resisted increase in fees. It shows how a neo-liberal policy on rational consideration faces opposition on political consideration.

As a result, there has been sub-optimal level of fees in most government institutions. The effect of this has been either of the following: (a) Institutions have found own mechanisms to raise fund from the student. (b) There has been decline in the quality of teaching-learning process either due to shortage of infrastructure or shortage of teachers; and (c) There has been a rise in the number of self-financing institutions that have begun to charge fees on full cost recovery. Policy failure thus led to quality gap in government institution and equity gap due to autonomous process of liberalization.

On the issue of private investment in higher education, first, there is contradiction between the policy and the plan. NPE (1986) notes the curbing of commercialisation and the 10th plan favours liberalization. Ambiguity is further compounded when public private partnership is advocated without clarifying the management, financing and other issues such as admission, fees, reservation, scholarship on which the basis of partnership can be built. There is a whole lot of ambiguity, which is probably deliberate as state finds it difficult to resolve asymmetric economic and political compulsions. However, ambiguity adds to the difficulty, as there is commodification without proper legislative and executive control.

Government should think of promoting privatisation with a system of legislative control on commodification and commercialization.

Section six: International Experiences on Cost Sharing With Students

Higher education is passing through a phase of internationalization. The scenario presented in the Indian context is not a unique one. Almost all countries are experiencing fund shortage and public system of higher education is facing difficulty in financing higher education. As noted earlier, development is guided by the neo-liberal economic policies almost all over the world and, therefore, higher education is increasingly viewed as a private good. It is important to understand how different countries are responding to the neo liberal challenges in financing higher education. The present section briefly reviews the recent trends in cost sharing. This should orient education planners to the newer ways of finding the resources for higher education and search for appropriate alternatives.

International Trends in State Funding and Privatisation

The international trend of the state funding of education gives us a mixed trend. Among the 94 developing countries; 62 countries increased their share in public expenditure as a proportion of GNP, whereas 32 countries decreased their share in public expenditure as a proportion of GNP. In the case of developed countries, however, out of 36 countries, 16 countries have decreased public expenditure on education as a proportion of GNP. Thus, an overall trend shows that over 40% of the countries in the world are experiencing constraints in the public financing of education. (See Table 30)

Table 30 Countries Showing Variations in Public Expenditure as a Proportion of GNP (1990-91 and 2001-02)

	Increased	Decreased	Stationary	Total
Countries in Transition	1	7	1	9
Developed Countries	20	16	0	36
Developing Countries	62	32	0	94
World	93	57	1	139

Source: *GUNI (2006) p.6*

Not only the share of public expenditure in education has been falling, it is important also to note that share of public expenditure on higher education as a proportion of total public expenditure in education during the period 1991 and 2001-02 have shown a decline in many developing countries (34 out of 72) whereas it has increased in most of the developed countries (28 out of 34). It clearly shows that developed countries have prioritised their resources for higher education. However, most of the developing countries have not been able to devote greater resources for higher education. (See Table 31)

Table 31 Countries Showing Variations in Public Expenditure in Higher Education as a Proportion to Total Public Expenditure in Education During 1990-91 and 2001-02

	Increased	Decreased	Stationary	Total
Countries in Transition	4	1	0	5
Developed Countries	28	6	0	34
Developing Countries	38	34	0	72
World	70	41	0	111

Source: *GUNI (2006) p.6*

Johnstone (2006a) notes that countries facing a fall in public expenditure ultimately experience the resource crisis that impacts the institutions. The impact is felt in terms of a loss of institutional capacity to respond, loss of

faculty, erosion of equipment including computers, laboratory, and library materials and finally face inability to expand physical capacity to keep pace with increasing enrolment.

It is also observed that with a trend in declining state support for higher education, there has been an increasing participation of private sector in financing of higher education. Sanyal and Martin (2006) note that privatisation has taken the following forms in different countries:

Privatization of public institutions encouraging government institutions to tap private sources of financing through fees and other sources.

New private institutions have been encouraged to establish institutions with government support. This is followed in India in the form of government aided private colleges and government aided private deemed universities. LatinAmerican countries such as Chile, Columbia, Paraguay and Peru have much larger share of private institutions with government support. Tunisia devotes 2% of GNP to higher education; still it has set up a legal framework to encourage investment in higher education through the creation of large number of private institutions.

There are self-financed non-profit private institutions in both developing and developed countries established by religious and philanthropic foundations.

Lastly, there has been a recent move to establish profit-making private institutions all over the world such as Appolo Group, the Career Education Corporation etc. These companies offer onsite and offsite programmes spread over many countries in Latin America, Europe and Asia. Tutiton fee is the main source of income of these companies.

The important point to note here is that if cost sharing is not managed properly there are chances that public institutions will suffer from quality gaps as well as equity gaps and will not be able to respond to increasing demand for higher education. On the other hand, privatisation will promote increasing profit-seeking activities and will turn out to be inferior alternative.

International Experiences in The Forms of Cost Sharing

Bruce Johnston (2006b), an authority in the financing of higher education system has analysed cost sharing in international perspective. He argues that rising costs, limited public revenues, increasing enrolment and the quest for quality have led to the need for increasing reliance on revenue supplementation. World-wide this has led to the sharing of costs with parents and students. There are three important reasons for increasing sharing of costs. In terms of equity rationale, it is argued that the benefits of subsidy to the higher education are cornered by the rich. Cost sharing can be, on the other hand, equity based both in high tuition as well as loan scheme. Need rationale is that instead of a single source financing there will be greater pressure towards diversification of sources for financing, as the need for finance goes up for various reasons. Efficiency rationale implies that free higher education may have a tendency for wastes that may be manifested in various forms. Cost sharing will, however, have a tendency to minimize the cost of higher education as price charged will imply the demand for return.

Tuition Fees Trends Abroad

Tuition is an important means of cost sharing.The recent trend in tuition fees in some of the countries is analysed below. There seems to be a present phase of higher education where cost sharing with students through hike in tuition fees is being practiced world- wide. Countries who have rationalized the tuition fees structure in favour of

efficiency, productivity and equity have met a part of resources for higher education. Countries who have evaded the issue on ideological grounds or merely due to political convenience have lost the resources for higher education and affected the quality rather adversely.

The time has arisen to face the issue upfront and evolve the fee structure that is rational to meet the part of resources required for higher education. Relatively speaking, India has one of the lowest tuition fee structures, as is evident from Table 32. For the most recent available year, the tuition fee is the highest in Russia and the lowest in India. Even including other fees, the fee structure is relatively cheaper in India.

Table 32 Representative College/University Public Sector
Tuition Fee, First Degree in US Dollars

Country	High Tuition	Low Tuition
Austria	746	746
Canada	5000	1366
China	2591	518
Japan	2974	2974
India	85	20
Mexico	1159	178
Russia	12026	0
South Africa	3293	1085
USA	6000	1600
UK	1565	1565

Source: *Johnstone Bruce (2006a, p.12)*

UK: Britain in 1997, under the labour government, became the first European country to accept the principle of an increase in tuition fees in higher education. The new system allows English universities to charge fees of upto £ 3000 a year in 2006, provided there is an 'access plan' offering bursaries to increase wider access by disadvantaged students. Fees will not be paid upfront by students, but will be paid after graduation, on an income contingent basis. Students will be given a loan to cover the full cost of their fees, and Graduates must repay the loan, after their income reaches a fixed threshold (currently 15000 pound per annum) by means of deduction, collected through their income tax, of 9% of their income above the threshold.

In U.K., the experience of the new system is still to be tested on access and equity. In principle, the above scheme of deferred fees is considered to be fairer and less likely to damage access.

Australia: Funding pattern in Australian higher education system during 1986-98 has undergone radical changes. Government contribution fell from 87 % to 52 %. During this period, students' fees increased from 5 % to 16 %. (See Table 33)

Table 33 Sources of funds for Australian higher education, 1986-98

Year	Govts. %	Higher Education contribution scheme %	Students fees and charges for services %	Donations and Investments	Other sources	Total
1986	87	0	5	8	0	100
1990	68	12	8	7	4	100
1994	62	13	11	3	11	100
1998	52	17	16	5	10	100

Source: *Deptt. of Education, Trainig and Youth Affairs, DETYA (1999). Above table is obtained from Marginson Simon (2003)*

Decline of government funding has led to innovations in the financing of higher education in Australia.

Higher Education Contribution Scheme (HECS) was introduced. The new system is a combination of tuition plus income contingent loan available to most Australian students. The loan covers the full amount of tuition as established by the university upto limits set by the government within three bands. Upto 20 % of the tuition due is discounted for paying upfront. Repayments are income contingent on annual income above US dollar 24898. Rates range from 3% to maximum amount of 8% on annual income in excess of US dollar 47445. Repayments due are collected as income surtax by the employer or are paid along with estimated or year end taxes due. As the above table shows HECS scheme has contributed 17 % to the higher education finance in 1998. The scheme was necessitated due to fall in funding of the government per student from $s10114 in 1095 to $s7954 in 1999 (See Johnstone Bruce, 2006a).

Another innovation has been the corporatization and market orientation to the courses in higher education. As a result of export of higher education international fee income reached 8.3 % of all institutional income by 1998. (DETYA, 1999).

The fees in Public institutions are, however, substantially less than the fees charged in private institutions.

An interesting point to analyse is whether such increase in tuition is affordable for different groups of family income. It was noted that in the low quintile income only, in terms of average cost, private higher education is unaffordable. Cost of public university higher education is much lower than the private university and hence it is affordable in spite of increase in tuition, if the various types of grants from all sources targeted at this group are taken into account.

US: In the US, tuition fee has increased with the tightening of fiscal belt to account for the increase in the cost in quality. However, the access is not adversely affected as there is efficient and diversified grant system for students. Besides the competitive conditions in the market, innovations in financing and use of education technology to save the costs have been important features of higher education. In the US, most major state universities have increased their non-state funding to around 70% of their total income. Universities are becoming entrepreneurial at a rapid rate.

Japan: In the Japanese higher education system, substantial differences exist in the public expenditure in the national and private universities. The overall ratio of subsidy for expenditure in the two sectors is 4.25: 1. Tuition and fees provide an extra- ordinarily high share of income in private universities, exceeding 70 % of the total. The share of Government subsidies to the private universities remains around 12 %. Thus tuition charges and fees are critical to the financing of higher education.

Every student in the private sector pays tuition and fees that are more than double those paid by students in the national sector. Essentially, therefore, students in the national sector enjoy a much more advantageous position than the students in private sector. The challenge for private universities in Japan is to diversify donations as well as funds for scholarship, since the level of tuition charges and fees may already have reached a limit beyond which further increases may be counter-productive. (See Arimoto Akira, 2006)

China: In 1989, China introduced the policy of charging tution and other fees. As a result, government dependence of funds reduced from 96% in 1978 to 82% in 1992. The higher education in the year 1998 made tution fees compulsory for college students while ensuring that the government continues to increase its financial allocation to public instititons. As a result, in 1997, Governemnt share in the higher education funding declined to 63.4%.

Issues in the Determination of Tuition and Other Fees

The policy of free tuition, a hall-mark of European higher education system has given way to the policy of cost sharing. A glimpse of four countries provides a clear picture of the scenario that is being followed in some countries in recent years. Developing countries, too, follow the policy, in part, owing to the fiscal compulsion of meeting the increasing cost of higher education through raising tuition fees. The policy stand on tuition fees in developing countries should address the following issues:

There is an ideological debate on tuition fees, that it is inevitably associated with privatisation. Quite often ideology affects rational discourse on tuition fees structure. It harms by constraining higher education to raise resources and invest in quality. It even protects a highly inefficient system without meeting the equity objective, as the advantage of low tuition fees may be cornered by the privileged sections of the society who have greater access to higher education.

A discriminatory fees structure should be followed in which the payment of fees should be linked with the ability-to-pay criterion. Those who are poor should be exempted to pay fees but those who have the ability to pay should share the burden of financing. An innovative practice towards a discriminatory fees structure should be followed in the universities.

There are varying levels of fees. Some universities have reached a critical level beyond which increase in tuition fees may be counterproductive. Some universities still have potentials to raise tuition fees. Those universities should increase tuition fees to supplement other sources of income.

Developed countries have been able to link hike in fees to the productivity and quality delivery of higher education. Universities need to be accountable to such increase in tuition fees by linking it to improvement in quality. In such situations there is likely to be less resistance to change.

The rural-urban divide should be kept into mind while deciding hike in fees. Urban colleges, where majority students are from privileged socio-economic status should have higher fee structure as compared to rural colleges where majority students are from less privileged socio-economic group. Besides, even in urban colleges, where students from lower socio-economic status may enroll, should be given concessions.

Issue of increase in tuition fees should not be linked to public financing. It should not substitute or displace public financing. Tuition fees should be a supplementary source of finance to close the investment gap in higher education alongside increase in government finance to higher education.

In the reform of financing higher education, a high gap in tuition fees in public and private institutions would create an imbalance. There should be a body to regulate fees structure in private as well as public institutions. This also implies that a high number of self-financing institutions should be restricted and aided and government institutions should be promoted to have a balanced growth.

Restricted tuition fees have created many distortions in terms of additional fees to circumvent legal restrictions on tuition fees. A rational fee structure would lead to lesser distortions in terms of additional fees.

Student Loan as a Form of Cost Sharing

NIEPA (2005b) notes that Scope for any further increase in cost recovery is extremely limited and further increases in the same, particularly through student fees, will be highly regressive in effect. It also opposes a differential fee system in higher education on account of practical difficulties. On student programmes it

recommends that a body like "Higher Education Finance Corporation" may be set up with contributions from the government and the corporate sector to coordinate the student loan schemes being operated by several banks to provide on its own scholarship and soft loans to students' (ibid p.48) It maintains that "educational loan programmes have to be designed keeping educational considerations, and they cannot be run solely on commercial lines by commercial banks" (ibid p.48). In view of CABE Committee recommendations, it is important to review the international trends on student loan programme to make it more equity based. It is also necessary because too many student loan programmes have failed due to both poor design and poor execution.

In understanding new forms of loan programmes, it is essential to re-examine the conventional wisdom that only government taxes and subsidy to higher education provide the equitable basis of financing. However, increasing indirect taxes are regressive in character and the taxes paid by general public may not benefit them as access to higher education is skewed in favour of households with high per capita consumption expenditure (NSSO, 1999-2000) It leads to the conclusion that government subsidy to higher education may not always be an efficient way of financing. The conventional wisdom, therefore, needs to be modified to include diversified modes of funding which could be linked to equity objective.

It was suggested earlier that equity based tuition fee structure may be invoked. Similarly, the equity based loan structure may be experimented. It is argued that sharing of cost with students, unlike tuition fee, may be deferred into the future, when the individual is likely to have entered the full-time work force and is able to begin repaying a portion of the costs that were advanced either by government or by general capital market.

Theoretical Assumptions

Human capital perspective of financing education notes that education helps in the formation of human capital which yields potential future income streams. Resource for investment in human capital may be obtained if a contract is made by the investor in human capital to exchange a part of future income in exchange for capital for financing education. Origins of the idea can be traced back to Milton Friedman (1955). He put forward the idea that state could manage resources for professional and vocational education on the basis of above principle known as Human Capital Contract (HCC) (Lleras M L,2004). The basis of income contingent loans is the acceptance of the principle of human capital contract. Several private universities in the United States created income contingent loans for their students. Universities bore the risk of default by their alumni. However, the experiment was short lived as the US government made available the financial aid to the universities during 1970's.

Johnstone (2006) advances the hypothesis that 'if additional revenue from government or tax payers is unlikely, either because a government is at its effective tax capacity or because other public needs would take precedence even if taxes could be raised, and if parental contributions are also at their likely maximums, then the other major possible sources of additional revenue for the general operations of the University or for the cost of student living would seem to be the deferred, or borrowed, contributions of the students themselves" (p.87). It may be argued that in a free market economy lending through the private capital market may be associated with high collateral, high default risk and high interest rates reducing the possibility of a loan programme with a broad base of students. Besides, loans to the students may be limited to selective programmes of study having high potential future income generation. The loans may also be limited to students who are admitted in high ranking institutions.

Hence, there arises the case of government participation in students' loan programme. If government is the guarantor of a student loan programme, effectively the loan programme originates from government sources of

taxation and borrowing. How government fulfils the obligation of a guarantor is a matter of detail and can be settled. The most important point is that government can reduce in part risk of default and help develop market for the student loan programme.

Different Forms of Student Loan Programmes

There are different forms in which student loan programme can function.

Conventional mortgage type or fixed schedule loan: This loan carries a rate of interest and associated stream of payments sufficient to amortize the loan.

Income contingent loan: It carries a contractual obligation to repay some percentage of future income until the loan is repaid. It may have various forms. The repayment period may vary depending on the income of the student. There may be full loan recovery or a part may be exempted to accommodate the equity consideration in the income contingent loan. The classification of loan may be built into the system across all borrowers or select borrowers. Income contingent loan may also give rise to graduate tax whereby a student is obliged to pay an income surtax in return of government subsidization of higher education in the form of low or no tuition.

Hybrid fixed schedule/income contingent loan: It combines the features of both fixed schedule and income contingent loan. Thus a student is obliged to pay a fixed schedule of payments when monthly earning exceed some fixed level of earnings. Repayment is deferred until the income exceeds the fixed earnings. However, students who remain unemployed or their income never reaches the minimum fixed earnings, they may have to pay as per the fixed schedule of repayment.

Much of the success of above student loan scheme depends upon how government designs the scheme and builds into it administratively simple, easy to access and assificat system with equity consideration.

Examples of Current Student Loan Programmes[4]

India: With a gradual reduction in government subsidies, higher education is getting more and more costly and hence, the need for institutional funding in this area. Many commercial banks including public and private sector banks in India have begun to offer a variety of loans to students for higher education. The Scheme aims at providing financial support from the banking system to deserving/meritorious students for pursuing higher education in all type of courses including professional courses in higher education in India and abroad. Education loans maximum of Rs. 7.5 lakh (in case of India) and Rs. 15 lakh (in case of foreign country) are available to students. For loans up to Rs. 4 lakh no collateral or margin is required and the interest rate is not to exceed the Prime Lending Rates (PLR). For loans above Rs. 4 lakh the interest rate will not exceed PLR plus 1 per cent. The loans are to be repaid over a period of 5 to 7 years with provision of grace period of one year after completion of studies. The loan repayment starts after one year of course period or six months after getting a employment, whichever is earlier.

Australia: In the Higher Education Contribution Scheme (HECS), explained above, repayment due is collected as income surtax by the employer. There is no foregiveness after a certain age or passage of years. It has a low administrative cost of servicing as well as a very low default rate. (Chapman and Ryan 2002).

China : Loan scheme was introduced in China in 6 cities in 1999. There is a government subsidy in students' loan scheme. As a result, students pay rate of interest considerably less than the market rate after graduation.

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[4]   This particular section draws heavily from Jonston Bruce (2006a)

Repayment periods are six years. The loans are disbursed by participating banks, and the risk is shared by the uni- versity, the government, and the bank. There is also provision for non-subsidised commercial loan scheme that is available for affluent students. (Shen and Li 2003)

Germany : There is an extensive means-tested, or need-based, study assistance in Germany. A portion of the grant – one half of the study assistance – is repayable at a zero nominal rate of interest. Repayment begins after five years of graduation.

Japan : Japan has a unique system. Here, the loan is administered by Japan Student Services Organization (JASSO). There are two types of student loans. The first is (i) merit ; and (ii) need-based. It carries no interest. The second carries 3% interest. It is awarded during school years. Loan repayment is on a fixed monthly basis. Repayment period is 20 years.

Kenya : Kenya launched a new loan programme in 1995 after a loan programme failed in 1970's due to high default. The new loan programme is means tested. Interest is four percent and capital is provided by the government. Loan programme has the backing of legislation by the government. Legislation mandates employers to deduct amounts due from employees in repayment. Loan programme is managed under a quasi-public Higher Education Board in 1995.

The Netherlands : Student loan has two components. First component is basic allowance that is not means tested, the second component is means-tested and is in the form of a grant, if academic progress of the student is shown satisfactory. Interest on the remainder is government borrowing rate plus 1% for administrative cost. Repayment has an income contingent feature for low income groups.

Russia : Russia imposes the obligation to work in lieu of tuition fee provided to the students. If admitted to an institution, and agrees to work for a certain period of time then institution is entitled to receive grants or vouchers providing tuition free higher education to students scoring high in national entrance examination. Interest is not charged on such loans. This is strictly speaking not a loan. (Protapenko 2002, Vossenstyne and Salerno 2002)

South Africa : Tertiary Education Fund of South Africa (TEFSA), a Government sponsored organisation, manages the loan. It is need-based. Interest rate is high however, there is forgivenness, as 40% of loan is converted into grant if student passes in all subjects. Repayment is income-contingent with an element of progression. (Jackson 2002).

Sweden : Since 1960's Sweden and other Scandinavian countries have relieved parents from paying living cost, as loan programme covers living costs of the students. Loan carries the nominal interest and is available to all. Repayment is income contigent and there is hardly any default. The university is tuition free. That's the reason Swedish higher education is heavily subsidised by the government.

Thailand : The Thai Student Loans Scheme (SLS) was created in 1996. The annual loan budget is sanctioned by the government and allocated to the institutions. Every institution makes its own rules. The loan covers tuition fee and other educational expenditure. The rate of interest on loans is only 1 per cent. Loan awards are based on need. Repayments are spread over 15 years. Repayment is income-contingent.

United Kingdom : In 1989-90, a small conventional loan programme was launched. It was means-tested maintenance grants. In 1998/99, a much expanded programme was announced by the government. The loan programme carries a zero real rate of interest. Repayment is income-contingent to be repaid at 9 per cent of

marginal income above£15,000 (US$16,181) (increased from £10,000 in April 2005), which is deducted by the employer as though it were an income surtax and passed to the government treasury. (Richards 2002 ; Johnstone 2005).

United States : Loans and parental contributions are the most important features of the United States higher education. The United States provides mainly conventional, fixed- schedule loans, available to all students with some financial need at minimally subsidized rates of interest. The federal government guarantees all student loans and pays all interest during the 'in-school' years and for a grace period for those with financial need. Unsubsidized loans are also available that do not require the demonstration of financial need and that carry only the implicit (but not insubstantial) subsidy of the governmental guarantee and the benefit of an interest rate near the government's borrowing rate. Much of the capital and loan origination is provided by the private banking sector, which in turn sells much of its student loan portfolio to private secondary markets.

From the many examples that have been suggested, the loan scheme can be made much more attractive and equity based. For example, instead of pure loan bearing a market rate of interest, loan should have two components: a part can be soft loan carrying low rate of interest and another part with zero rate having the characteristics of grant as in Thailand and South Africa. Moreover, it should be need-tested as in Germany. Repayment should have income contingent feature as in Australia and UK. The repayment obligation should not be too short. Government may also have legislation for effective implementation as in Kenya. Government may earmark budgetary allocation every year for loan programme. Government may handover the management of loan to a central body or the universities or the commercial banks with clear cut directives. The most essential point is that under no circumstance the government should reduce required funding either because of the hike in fees or because of the loan programme.

Trends in Financing Research Led University

Understanding the issue of financing in research universities probably requires an independent focus. Financing research   universities needs to be dealt with independently. An important concern in India is that world class universities with top facilities need to be developed. Financing world class universities on a massive scale hasbecome important to attract reputed scholars to bridge the knowledge gap. Philip Altbach reports that Indian high tech giants, INFOSYS and TCS, have moved a plan to hire and train more than 50000 graduates from abroad as Indian universities are not producing quality graduates needed for the top end of the economy. Quality in today's world means 'world quality' and this can be delivered in world class universities. 11th plan should make interventions to create world class universities in India. The world class universities will not only retain Indian talents but also attract talents from all over the world.

Higher Education Project 211 launched in 1995 in China or '21st Century Centres of Excellence Plan' in Japan started in summer of 2002 and the new policy of 'Brain Korea 21' designed to elevate the quality to world class standards in selected graduate schools and selected fields of natural sciences[5] are examples to develop research universities.

There is a growing recognition of the fact the knowledge gap should be minimized. Bologna process and Lisbon convention was in part a response to consolidate the knowledge and provide a competitive higher education system in the world. A comparative analysis between US and European Union shows that Government R&D expenditure in EU and USA is at a comparable level (in 1999 0.8% of GDP in USA and

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5   See Lee S H (2004) and Kaneko Motohisa (2004)

0.7% in EU). However, R&D expenditure by business and industry cos. in the USA appears to be considerably higher than in Europe, and is growing more rapidly. In Europe, investment in higher education and research is seen primarily as a task for government; while in the USA individuals also invest in their higher education, business and industry invest more broadly in R&D.

Financing research universities in India requires a vision that should be appropriately supported by the government. It is being argued that "research stimulation policies that strive for top quality" should be implemented in top Indian universities in order to close the knowledge gap.

Conclusions

Considerably large number of developing countries (34 out of 38) is experiencing resource crunch for higher education in terms of public financing. Crisis in the financing of higher education is not something unique for India.

Cost for not managing the crisis in the financing of higher education may turn out to be very high, in fact, much greater than costs on account of cost sharing. Increasing quality and equity gaps in public institutions due to insufficient resources will put pressure for privatisation and commercialization and increase the gaps furthermore.

Response to neo-liberalism resulting in financial crisis should be guided by the practical compulsion of revenue diversification. Cost sharing appropriately managed may close quality as well as equity gaps.

As per recent result, the tuition fee in higher education in India is one of the lowest, much lower than in China and Russia and in comparison to many developed countries.

Britain in 1997, under labour government, became the first European country to accept the principle of an increase in tuition fees in higher education. Government contribution fell from 87 % to 52 % during 1986-98 in Australia. During this period, students' fees increased from 5 % to 16%. In 1989, China introduced the policy of charging tution and other fees. As a result, in 1997, Governemnt share in the higher education funding declined drastically to 63.4%. In the US, most major state universities have increased their non state funding to around 70% of their total income. Universities are becoming enterprenaurial at a rapid rate

Guided by the international experience, fee   hike with a built-in discriminatory structure is necessary. Fee hike then should be indexed to inflation. All fee hikes should be linked to increase in quality. Resource mobilization through fee hike be utilized through the mechanism ofinstitutional planning. Rural and urban divide should be kept into mind while deciding the hike in fees. Periodic evaluation of fee hikes by central and state governments should take place with strict warning to the universities if the benefits are not transferred to the students through increase in quality.

Another important way in which cost sharing may take place is through loan programme managed by government. Government can reduce, in part, risk of default and help develop the market for student loan programme.

International experience indicates   that current market based loan programme should be restructured in India. Loan should have two components: a part can be soft loan carrying low rate of interest and another part with zero rate having the characteristics of grant as in Thailand and South Africa. Moreover, it should be need-tested as in Germany. Repayment should have income- contingent feature, as in Australia and UK. Government may also have legislation for effective implementation, as in Kenya. Government may earmark

budgetary allocation every year for loan programme. Government may handover the management of loan to a central body, or to the universities, or commercial banks with clear cut directives.

Financing research universities in India requires a vision that should be appropriately supported by the government. It is being argued that "research stimulation policies that strive for top quality" should be implemented in top Indian universities in order to close the knowledge gap

Section seven: Conclusions and Recommendations

The research project originated with following research issues relating to the financing of higher education. The concluding observations vis-a-vis research issues could be summarised as below:

Trend in Public Expenduture

1. A long-run trend in public expenditure of higher education shows that the period since 1980 is marked by deceleration in public expenditure of higher education. The compound annual rate of growth of central plan and non-plan expenditure in the period from 1951 to 1980 had grown at 17% and it declined sharply to 10% during 1980 to 2003. The decline is radical in view of the fact that GDP has been growing at a much higher rate, at 5.42% in the latter phase as compared to 3.35% in the former phase. During the latter phase, the decline has been observed in case of all state governments. Deceleration is further marked by a reduced central share from a peak of 37% in 1965-66 to 19% in 2003-04.

2. A recent trend for a decade during 1993-94 to 2004-05 shows a consistent pattern in the decline of public expenditure per student in real terms for higher education. The decline is to the extent of 21%. The elementary education shows 50% increase in public expenditure per student in real terms and the secondary sector is marked by stagnation.

3. During the 10th plan, public expenditure per student in nominal terms for university and higher education showed continuous decline whereas public expenditure per student in nominal terms for technical education showed a consistent increase. In 2004-05, public expenditure per student for university and higher education stands at Rs. 10261 and public expenditure per student for technical education at Rs. 44885. In the case of University and higher education, the share of central plan to public expenditure works out to 7%, whereas in the case of technical education, central plan contributes 21% to the public expenditure.

4. Thus, the hypothesis of deceleration in public funding of higher education is fully supported.

Three reasons have been given to prove the hypothesis that deceleration in public funding of higher education is systemic and points to the forces that are guided by the neo-liberal view of development. The three reasons are: (a) Decline in the growth of public sector contribution to GDP and consequent increase in the growth of private sector contribution to GDP; (b) Decline in the growth of taxation as a source of financing public expenditure; and (c) The crowding-out of higher education as a result of increased priority given to the financing of elementary and secondary education.

The central message, therefore, seems to be to face the hard reality of compression in the public financing of higher education. It would be appropriate to face the challenges and shift the strategies of planning and financing of higher education through diversified funding strategies. A shift in the strategy is necessary in view of quality and equity gaps due to huge investment gaps. An uncontrolled privatisation would lead to further

deterioration in quality. It would equally harm the access of all those who may not bear the burden of sharing the full cost of higher education.

Feature of UGC disbursement of funds

1. The planning process in higher education follows heavy top-down approach to planning. Institutional planning at the level of colleges and universities remains elusive. What is important to observe is that the principle in the top-down approach to planning remains obscure. It is neither guided by the man-power approach nor by the need-based approach. It is severely constrained by resource availability and all rational argument put forth by the MHRD fail to carry the weight in the Planning Commission. It is amply proved by the meagre resource allocation for the first year of the 11th plan.

2. Not only is the amount of planned resources inadequate, the percentage distribution also suffers from imbalance. Development of state universities received 43% of plan resources, whereas the central universities received 39% of planned resources under university sector. If the plan assistance to the colleges under state universities is included 57% of plan resources are spent on financing a much bigger constituency of higher education. Considering the size and number of state universities and colleges, a much larger proportion of resources need to be spent on state universities and colleges.

3. A major portion of the plan grant is to develop the infrastructure of universities and colleges. Universities receive 61% of the total plan grant to universities, and colleges receive 47% of the total plan grant to colleges. In terms of priority, UGC assigns top priority to the infrastructure, given the need of universities and colleges. However, allocation of resources for meeting other important objectives badly suffers.

4. Among the four major objectives of higher education – access and equity, relevance, quality and excellence, and research – quality and excellence receivethe greatest priority both among colleges as well as universities. Strengthening of research received the second priority under universities, whereas research has the lowest priority under colleges. Since quality and excellence go together with research, improvement in quality at the college level can take place only when research funding for college teachers is stepped up. In terms of allocation of resources, promoting objectives of access and equity and relevant education is of lesser importance in the case of universities.

5. Promoting quality and excellence amounted to developing universities and colleges with potentials for excellence, integrating ICT in teaching and learning process and more importantly for quality assessment. Support to professional development of teachers through the academic Staff Colleges is provided under relevant education. Besides meagre amount for workshops, seminars and research supports is given under the heading of research. All the financial support given to teachers for their professional development needs to be increased.

Investment Gap in Higher education

1. Global scenario in the mix of public and private spending on higher education suggests that in the past high public spending in higher education was a dominant strategy in the financing of higher education. Dynamics of inter-zone movement suggests that through a diversified financing strategy high proportion of public as well as private spending in higher education can be approached.

2. A framework of cost sharing suggests that there are three policy options: (i) In the case of uncontrolled private expansion and commercialization, burden of full cost as well as the profit falls on parents out of their present income; (ii) In the case of controlled public expansion burden of full cost as well as the surplus falls on parents out of their present income. However, cost sharing finances higher education for its own expansion. Surplus may be used to subsidise poor students or to invest in quality. The choice of public policy between (i) and (ii) depends on the fact whether public institutions will efficiently utilize the surplus or government through effective regulation will control commercialization and ensure quality and equity.

3. Cost sharing can also take another form in which a part of financing requirement is met through the present and a part through newer credit instruments that can defer payment to the future. The institutional mechanism for financing higher education through the deferred payment out of future income needs to be found out in India on the basis of experiences in many countries.

4. Notwithstanding the varying estimates of cost per student, at 2006-07 current expenditure gap of Rs. 18481 crore is estimated. After accounting for the fact that 16% of total fund is financed from sources other than government as observed from a thin sample, Rs. 4684 crore is accounted for existing privatisation. This gives a figure of Rs 13797 crore as current expenditure gap. Current expenditure gap is 1.3 times the existing budgetary resources (Centre and state non-plan) at Rs. 10799 crores in 2006-07.

5. Based on the 5.5% historical compound growth rate, the enrolment is projected to grow from 12.33 million to 16.11 million, making a net addition of 3.78 million during the 11th plan. The basis of capital as well revenue expenditure requirement is taken from Moily and considerably modified. Capital expenditure is Rs. 53000 per student and recurring expenditure is Rs. 19750 per student. Total required investment during the 11th plan works out at Rs. 41639 crores. The above investment requirement should primarily be met from central and state plan expenditure. Hence, the total expenditure and investment gap is of the order of Rs. 47610 crores.

The Reasons for Investment Gap

1. Huge Investment Gap caused by deceleration in the financing of higher education reflects a failure in the educational planning and policy of the neo- liberal state.

2. Policy failure is first of all reflected in the inability of the state to meet 6 per cent of GNP on education. Almost all commissions and committees have been recommending it. Government has also accepted the recommendations. Nonetheless, there is a disconnent between the Committees, Commitments and Implementation. It may help to explain how a neo-liberal development contradicts its own stand that is taken on political and social considerations.

3. Another aspect of the failure of policy is seen on sharing of cost with students in terms of the fees policy. Almost every committee has recommended rationalization in fees with a reasonable upward revision in fees. Most state governmens have, however, resisted increase in fees. It shows how a neo-liberal policy on rational consideration faces opposition on political consideration.

4. As a result, there has been sub-optimal level of fees in most government institutions. The effect of this has been either of the following: (a) Institutions have found own mechanisms to raise fund from the student; (b) There has been decline in the quality of teaching-learning process either due to shortage

of infrastructure or shortage of teachers, and (c) There has been a rise in the number of self-financing institutions that have begun to charge fees on full cost recovery. Policy failure thus led to quality gap in government institution and equity gap due to autonomous process of liberalization.

5. On the issue of private investment in higher education, first there is contradiction between the policy and the plan. NPE (1986) notes the curbing of commercialisation and the 10th plan favours liberalization. Ambiguity is further compounded when public-private partnership is advocated without clarifying the management, financing and other issues such as admission, fees, reservation, scholarship on which the basis of partnership can be built. There is a whole lot of ambiguity which is probably deliberate as state finds it difficult to resolve asymmetric economic and political compulsions. However, ambiguity adds to the difficulty, as there is commodification without proper legislative and executive control.

6. Government should think of promoting privatisation with a system of legislative control on commodification and commercialization.

Ways of mobalizing Resources

1. A considerably large number of developing countries (34 out of 38) is experiencing resource crunch for higher education in terms of public financing. Crisis in the financing of higher education is not something unique for India.

2. Cost for not managing the crisis in the financing of higher education may turn out to be very high, in fact, much greater than the costs on account of cost sharing. There may be an increasing quality and equity gap in public institutions due to insufficient resources. Resource crunch will also put pressure for privatisation and commercialization and increase the quality-equity gaps furthermore.

3. Response to neo-liberalism resulting in financial crisis should be guided by the practical compulsion of revenue diversification. Cost sharing appropriately managed may close quality as well as equity gaps.

4. As per a recent result tuition fee in higher education in India is one of the lowest, much lower than that in China and Russia and in comparison to many developed countries.

5. Britain in 1997, under labour government, became the first European country to accept the principle of an increase in tution fees in higher education. Government contribution fell from 87 % to 52 % during 1986-98 in Australia. During this period, students' fees increased from 5 % to 16 %. In 1989 China introduced the policy of charging tution and other fees. As a result, in 1997, Governemnt share in the higher education funding declined drastically to 63.4%. In the US, most major state universities increased their non-state funding to around 70% of their total income. Universities are becoming entrepreneurial at a rapid rate.

6. Guided by the international experience, fee hike with a built-in discriminatory structure is necessary. Fee hike then should be indexed to inflation. All fee hikes should be linked to increase in quality. Resource mobilization through fee hike be utilized through the mechanism of institutional planning. Rural and urban divide should be kept into mind while deciding the hike in fees. Periodic evaluation of fee hikes by central and state governments should take place with strict warning to the universities if the benefits are not transferred to the students through increase in quality.

7. Another important way in which cost sharing may take place is through loan programme managed by government. Government can reduce, in part, risk of default and help develop market for student loan programme.

8. Current market-based loan programme should be restructured in India. Loan should have two components: a part can be soft loan carrying low rate of interest and another part with zero rate having the characteristics of grant as in Thailand and South Africa. Moreover, it should be need-tested as in Germany. Repayment should have income-contingent feature as in Australia and UK. Government may also have legislation for effective implementation as in Kenya. Government may earmark budgetary allocation every year for loan programme. Government may handover the management of loan to a central body or to the universities or commercial banks with clear-cut directives.

9. Financing research universities in India requires a vision that should be appropriately supported by the government. It is being argued that "research stimulation policies that strive for top quality" should be implemented in top Indian universities in order to close the knowledge gap.

Recommendations

Central government

1. A rational analysis based on historical trend in the financing of higher education shows that public expenditure on university and higher education as a proportion to GDP is not likely to exceed. 4% during the 11th plan. A realistic assessment of resource availability would then help to develop alternative strategies and prioritise the allocation of resources efficiently.

2. The strategy in the financing of higher education should revolve round the diversified source of funding. The government should evolve a twin strategy of cost sharing with students, parents and other beneficiaries of society to mobilize resources for government supported universities and colleges and attracting private investment in establishing institutions under the regulatory framework guiding admission and fees policy and quality accreditation.

3. Government should allow a fee policy after studying the unit cost of education at different levels, programmes, quality and scale of higher education. An essential aspect of fee policy should be discrimination in favour of poor and full cost recovery from the rich. Policy of subsidizing rich can no longer be a rational strategy in a fiscally constrained situation.

4. Government should help to establish two institutions immediately. As suggested by CABE Committee on the financing of higher education, Higher Education Finance Corporation should be established with a seed capital of Rs. 1000 crore from the government and financial contributions from scheduled commercial banks of the order of Rs. 4000 crore. The Corporation should evolve a strategy of student loan based on international experiences. The loan amount, provision of grant, rate of interest, repayment period, strategy of repayment, foregivenness conditions, income contingent conditions etc. need to be worked out in such a manner that needy students are benefited the most.

5. Government should also help to establish a Higher Education Fund through contributions from philanthrophists and industrialists to help universities and colleges. The management of fund should be in the hands of private persons having sufficient credibility. The fund managers should be free to allocate resources in the manner the contributors of fund desire.

University Grants Commission

1. An abysmally low plan size available with the UGC leads it to reconsider its own strategy in coordination and maintenance of standards of higher education. It implies that a totalitarian and need-based approach cannot be sustained due to lack of resources. At present UGC's dominant strategy is to fund under over 50 schemes and monitor the funding. UGC should have strategic approach to planning.

2. Under strategic approach to planning UGC should be able to clarify its own vision to intervene. As its principal role is to maintain standards, it should allocate resources for excellence in teaching and research on a priority basis. It should maintain balance in disbursing resources with respect to university and colleges, on the one hand and between central and state universities, on the other.

3. UGC should focus more on research-based support to the universities and colleges. It should help in developing bench-marking in teaching and research, support curricula updation, develop norms for efficient governance, establish and support large number of inter-university centre like institutions that will facilitate institutions of higher education towards quality and excellence in teaching and research. UGC should furthermore help in developing networking and electronic connectivity, besides helping institutions in optimally utilizing them. In other words, UGC should develop expertise in high quality policy support to higher education rather than working in the dominant role as fund provider.

4. UGC should focus more on the following specific areas: (a) Universities and Colleges with potential for excellence; (b) ICT for teaching-learning process; (c) Special Assistance Programme (SAP) in Science & Engineering & Technology and Humanities and Social Sciences; (d) Research, awards, seminars and workshops; (e) Advanced Centres in Science Education and Research; (f) Inter-University Centres; and (g) Scholarship programmes for students

State Governments

It should be the responsibility of state governments to support universities and colleges in developing physical and academic infrastructures through state plans and support educationally backwards colleges and universities.

Universities and Colleges

Universities and colleges should develop an Institutional Development Plan. There should be vision, mission and objectives. Financial autonomy to raise resources should be exercised with accountability and transparency norms.

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Chapter 11

Financing Higher Education in India-Estimate for 15% Enrolment under 11th Plan

Ravi S. Srivastava

It is now well understood that, on average, countries with higher levels of growth have labour forces with higher levels of formal schooling. With the shift to an information economy, globalization and flexible organizations of production, these arguments are further reinforced. Moreover, arguments that link high levels of education are linked not only to scientifically trained manpower but to higher levels of general education (Carnoy 2006).

In the light of these arguments, countries such as China and India are putting emphasis on the growth of education, including higher education. In India, the Approach Paper to the 11th Plan, has put behind more than a decade of relative neglect of higher education, to argue for much higher public investments in the sector. Expansion, quality and relevance are the key objectives in both countries. Indian policy goals also explicitly emphasise access and inclusiveness. Both countries have distinct roles for the public and private sector which are to some extent still unfolding. But the differing evolution of the system in India and China also dictates to some extent, their present trajectories. This paper focuses on some issues relating to the financing of higher education in India, with special reference to general education.

The Indian higher education system has undergone phenomenal qualitative change and expansion since the advent of the modern system in the first half of the nineteenth century. The first universities in the three presidencies of Madras, Calcutta and Bombay were formed in 1857 and were followed by the universities in Lahore and Allahabad in 1882 and 1887 respectively. In the early part of the 20th century, nationalistic and social aspirations led to the creation of a few universities, such as Benares Hindu University (1916), Viswabharati (1921), Aligarh Muslim University (1920), Delhi University (1922) and a large number of colleges. The funding of these universities and colleges depended primarily on philanthropic effort, with some support from the state. By 1951, India had 28 universities and less than colleges imparting higher education with less than half a million enrolled students. By 2005-06, there were over 325 universities, including Central, State, and Deemed)[1] and more than 17,000 colleges, enrolling an estimated ten to fifteen million students.

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[1] Central Universities and Institutions of National Importance (such as the Indian Institute of Technologies and the Indian Institute of Science are formed under the Central Act and are funded by the Centre, whereas the State Universities are formed by the State legislatures. The latter can be state-funded or privately funded (private). Deemed universities are recognized under a provision of the University Grants Commission Act. In general, they cater to a smaller range of degrees and specializations and are not automatically eligible to receive Central or State grants.

Sources of Finance for Higher Education

Three major sources of finance for higher education can be distinguished. The first is state finance (Central and Provincial). The second source comes from charitable and philanthropic non-governmental sources. The third source is profit-seeking non-governmental finance, both domestic and foreign. The contribution of each of these sources and the role assigned to them has been different in different periods.

Since 1951, education has primarily been a responsibility of the states, but in the case of higher and technical education, a greater responsibility was placed with the Central government. The Constitution of the Republic of India made education a state subject. The responsibility of only certain categories of education/institutions and subjects continues to vest in the Central government (Central universities, S&T institutes of national importance, regulation of higher education were placed in List 1 of the Seventh Schedule of the Constitution dealing with subjects in the purview of the Central government).

However, in 1976, the omnibus 42nd Amendment to the Constitution brought "Education, including, technical education, medical education and universities" into List 3 of the Seventh schedule dealing with subjects in the joint purview of both central and state governments. More recently, the Constitution 73rd and 74th Amendments have recognized the rural and urban local bodies in India as the third tier of government and "education, including primary and secondary schools", "technical training and vocational education" and "adult and non-formal education" have been placed in the purview of the local bodies in Article 243G of the Constitution. However, higher education is not in the purview of local bodies.

The impact of the 42nd Amendment was felt only after 1985-86, when the Central government gradually increased its contribution, after formulating the New Policy of Education (NPE) in 1986, and began to give greater priority to primary and elementary education. This thrust continued after the Alma Ata Declaration on 'Education for All' and the revised Policy on Education (1992). At the same time, while structural adjustment and liberalization put fiscal resources of the Centre and the State under stress, on the one hand, the dominant strand in thinking differentiated between elementary education which was treated as a merit good while higher education was treated as a private good.[2]

While the State has been the dominant source of finance for higher education, non-governmental finance provided by religious endowments, charitable trusts and others has been an important source of funding. Many of these institutions are able to receive regular state grants to meet a large proportion of their recurrent expenditure after they meet eligibility criteria. Privately managed institutions, which receive regular grants from government are known as 'private- aided' institutions.

Privately managed institutions which do not receive government funding could be both non-profit institutions or for-profit institutions, which either are not eligible for state funding or do not wish to receive the same. Since about a decade or more, most state governments have virtually ceased to expand the list of government aided institutions, thereby increasing the percentage of 'self-financed' or 'private unaided institutions'. These institutions have now become an important source of finance for higher education and dominate some segments of technical and professional education.[3]

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[2]   The government now recognizes higher education as a Merit-2 good while elementary education is recognized as a Merit-1 good (MHRD 2005).

[3]   About 85 percent of engineering colleges and 40 percent of medical colleges are in the private unaided segment (NIEPA 2005a, Kapur and Mehta 2004).

Trends in Government Financing of Higher Education

Of the two levels of government, the bulk of expenditure on education comes from the state governments, although the Centre shares a greater proportion of the expenditure on higher education. The annual shares of the Central and state governments in total public expenditure on education and on higher education since 1950-51 is given in Figure 1.

Since the late 1980s, the Central government has slowly reversed its declining share in education expenditure, although its share in expenditure still continues to be lower than that in the first two decades. The share of the Central government in total expenditure declined from 24.7 during 1970-71 to 1980-81 to 21.1 during 1981-82 to 1991-92 and further to 20.3 during 1992-93 to 2003-04.

Figure 1 also reflects the fact that the Central government also spends a greater proportion of its education expenditure on higher education. This is indeed consistent with the role set out for the Centre in the Constitution.

The share of the government's development spending on education can be estimated by its *plan* spending. [4] There has been a steady decline in the percentage of plan spending to total spending by both Central and state governments – from 23.2 during 1970-71 to 1980-81 to 19.2 during 1981-82 to 1991-92 and further to 16.6 during 1992-93 to 2003-04.[5]

PERCENTAGE OF STATE AND CENTRAL EXPENDITURE ON EDUCATION 1951-52 to 2003-04

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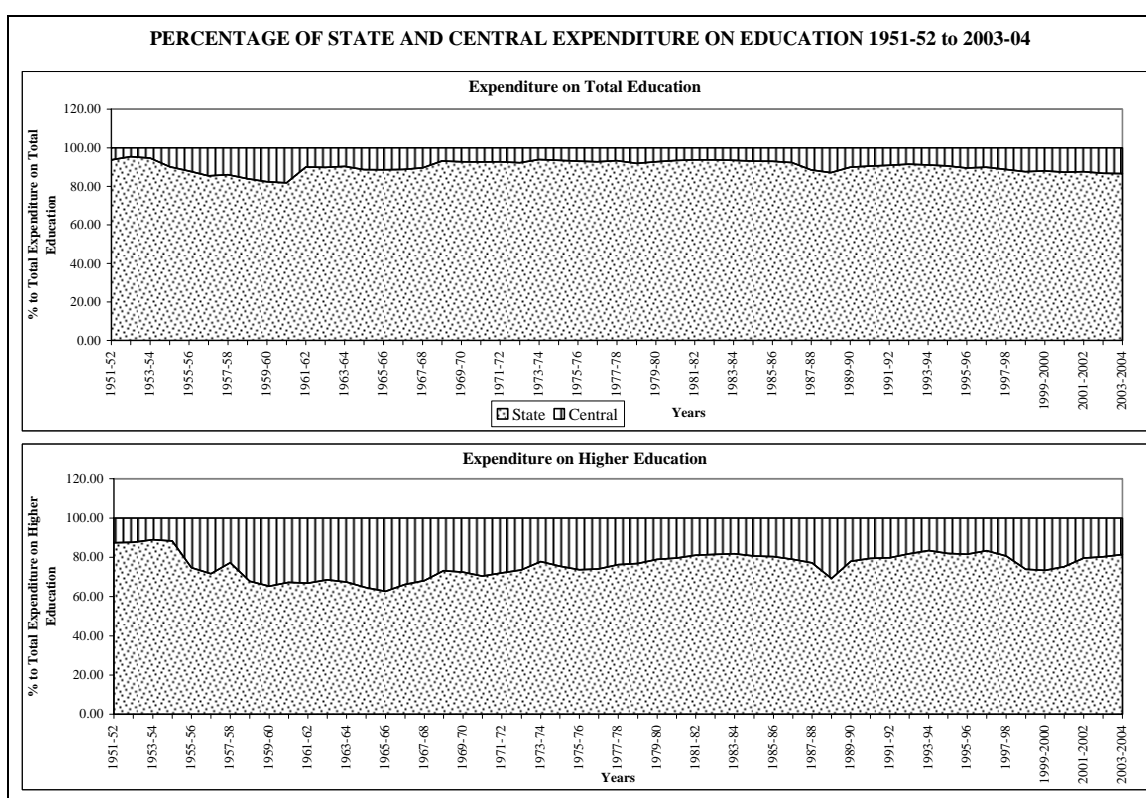
[4] Total public spending is divided into plan and non-plan spending. The latter represents committed spending of government on account of recurrent heads, the former represents fresh commitments (which go towards expansion of capacity of the system, infrastructure etc.)

[5] The share of plan expenditure on higher education to total plan expenditure also declined in each successive plan (NIEPA 2005a).

The proportion of State and Central expenditure devoted to higher education relative to the total expenditure on education at each level of government is shown in Figure 2 and the period-wise average shares are given in the Table below.

Table 1: State and Central expenditure on Higher Education

	State	Centre	Total
1952-1961	9.3	20.7	10.6
1962-1971	8.9	40.3	11.8
1972-1981	11.5	47.9	14.0
1982-1992	12.2	36.2	14.2
1993-2004	11.4	23.3	12.7

As far as Central government is concerned, the share of higher education in its total expenditure on education was well over 40 percent between 1960-61 and 1985-86 but has been below 20 percent after 2000-01. The share of higher education in the states' spending on higher education has, however, fluctuated between 9 and 12 percent, reaching an average of 12.2 percent during 1982-1992. The share of higher education in total education expenditure of both Central and State governments rose to 14.2 percent during 1981-82 to 1991-92, but fell to 12.7 percent during 1992-93 to 2003-04. Thus by all accounts, the relative priority given to higher education declined after 1992-93.

Total government finance for higher education has grown significantly since 1951. But the trend in growth of expenditure on higher education has been different from that of total education. The trend is also different between the Central and State governments. Both total education and higher education grew at the highest rate in the first two decades (1951-1971) and decelerated sharply during the 1970s. During 1982-83/1992-93, and 1992-93/2003-04 the Central government again stepped up the rate of growth of expenditure on both total and higher

education. However, the states' expenditure on education experienced a lower growth rate, particularly during the last period. As a result, as far as higher education is concerned, the rate of growth of public expenditure has continued to fall during every successive decade, and for both total and higher education, the rate of growth of expenditure was lower in the post-reform period as compared to the preceding decade.
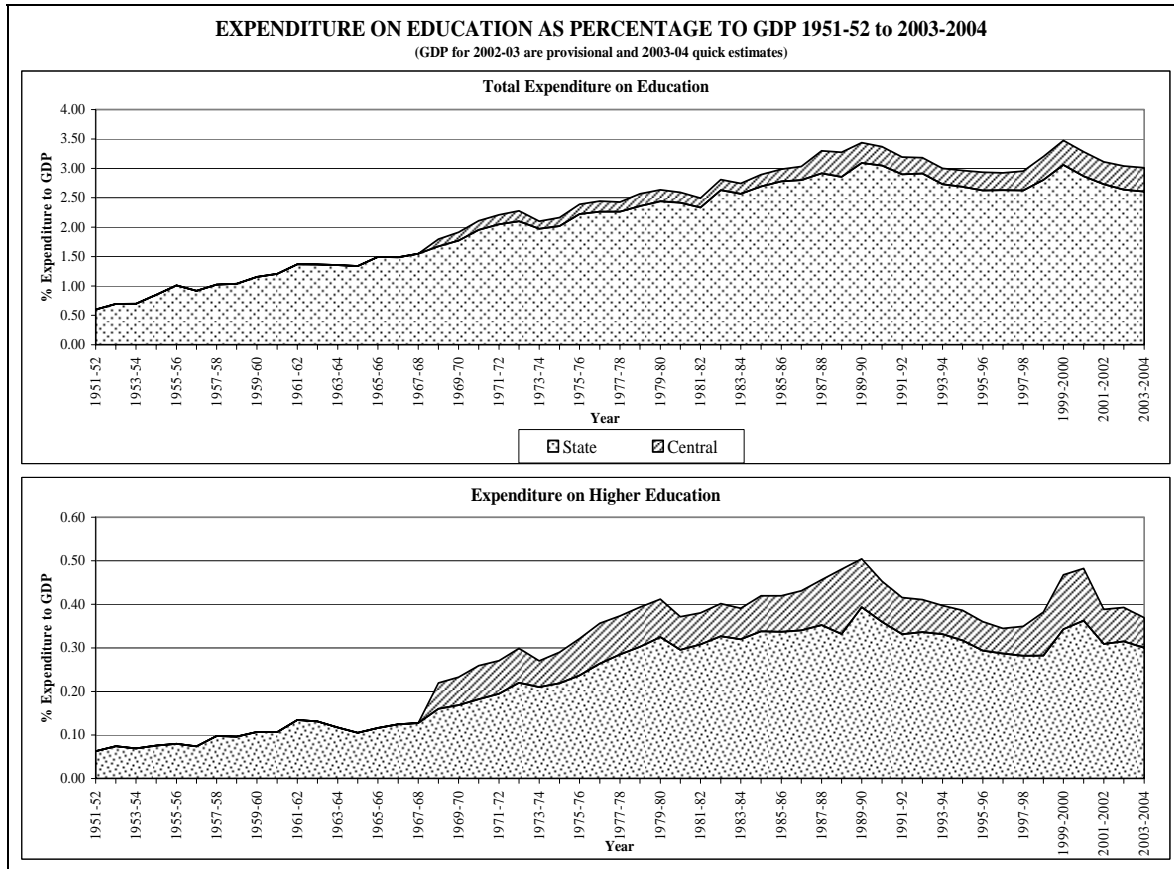
EXPONENTIAL GROWTH RATE FOR EXPENDITURE ON EDUCATION, 1950-51 -- 2003-04

Expenditure on Total Education

| III 1951-52--1970-71 | N 1971-72--1981-82 | X 1982-83--1992-93 | ☐ 1993-94--2003-04 |

Note: 2003-04 onwards are projected values

Expenditure on Higher Education, 1951-52 -- 2011-12

The rate of growth of expenditure on total as well as higher education was significantly higher than the rate of growth of national income in the first two decades. Total educational expenditure continued to be higher than the growth of national income till the beginning of the reform period. However, expenditure on higher education as a percentage of GDP showed an upward trend till the 1970s but plateaued thereafter. The trend in the ratio of public expenditure to GDP since 1951 is shown in Figure 4.

As can be seen from the figure, both total expenditure on education and higher education increased as a percentage of GDP till the 1980s. There was an upward movement in the total education expenditure to GDP ratios during 1987-88 to 1988-00 and then a decade later in response to pay commission awards, but abstracting from these, the expenditure to GDP ratio has remained virtually constant. In the case of higher education, expenditure to GDP ratios were 0.43 percent on average during the 1980s and also during 1992-93 to 2003-04. Thus despite various pronouncements, the state has not been able to increase the expenditure/GDP ratio for education.

As we noted initially, enrolment in higher education has been expanding at a brisk pace, even as the tempo of public expenditure has not been maintained. Particularly in the reform phase since 1992-93, the increase in real expenditure has lagged behind the rate of increase in student enrolment in general education. As a result, during

this phase, the rate of growth in per student expenditure has been negative. The year wise trend for the period 1981-82 to 2003-04 is shown in figure 5. Per student public expenditure has registered a negative rate of growth both for Central as well as State expenditure. Overall, per student expenditure has declined at a rate of 2.4 percent since 1992-93. The average real expenditure on higher education per enrolled student declined from Rs 8322 in the period 1981-82 to 1991-92 to Rs. 6790 in the period 1992-93 to 2003-04.

EXPENDITURE ON EDUCATION AS PERCENTAGE TO GDP 1951-52 to 2003-2004
(GDP for 2002-03 are provisional and 2003-04 quick estimates)

Some broad conclusions regarding public financing of higher education in India are, therefore as follows:

- Public expenditure on higher education grew at a very rapid rate till the early 1970s but continued to exceed the rate of growth of national income till the mid-1980s. As a result, the share of public expenditure in higher education to GDP rose on this period. Thereafter, the trend is towards stagnancy or decline.

- The most noticeable feature is a decline in per student real expenditure on higher education in the period after 1992-93.

- Per student expenditures on higher education were low in India to begin with. With the modernisation of education, these should have grown at a high rate to provide infrastructural support of the necessary quality. This, however, did not happen.

Private Finance for Higher Education

As shown earlier, private initiative and funding of education has always been an important source of the funding of higher education. But till the phase of liberalisation and economic reforms, private funding of education was generally considered to be of a non-profit character. Due to the high cost of financing higher education, except in a small number of cases, the trajectory generally followed by private managements was to start the educational institution by putting into place the requisite teaching and physical infrastructure and to then seek public funding to meet the major part of the recurring costs, especially the salary costs. This, however, subjects the educational institution to the regulatory provisions and financial discipline of the funding entity, which may be the state government or the University Grants Commission.

PER STUDENT EXPENDITURE ON HIGHER EDUCATION, 1980-81 to 2003-04
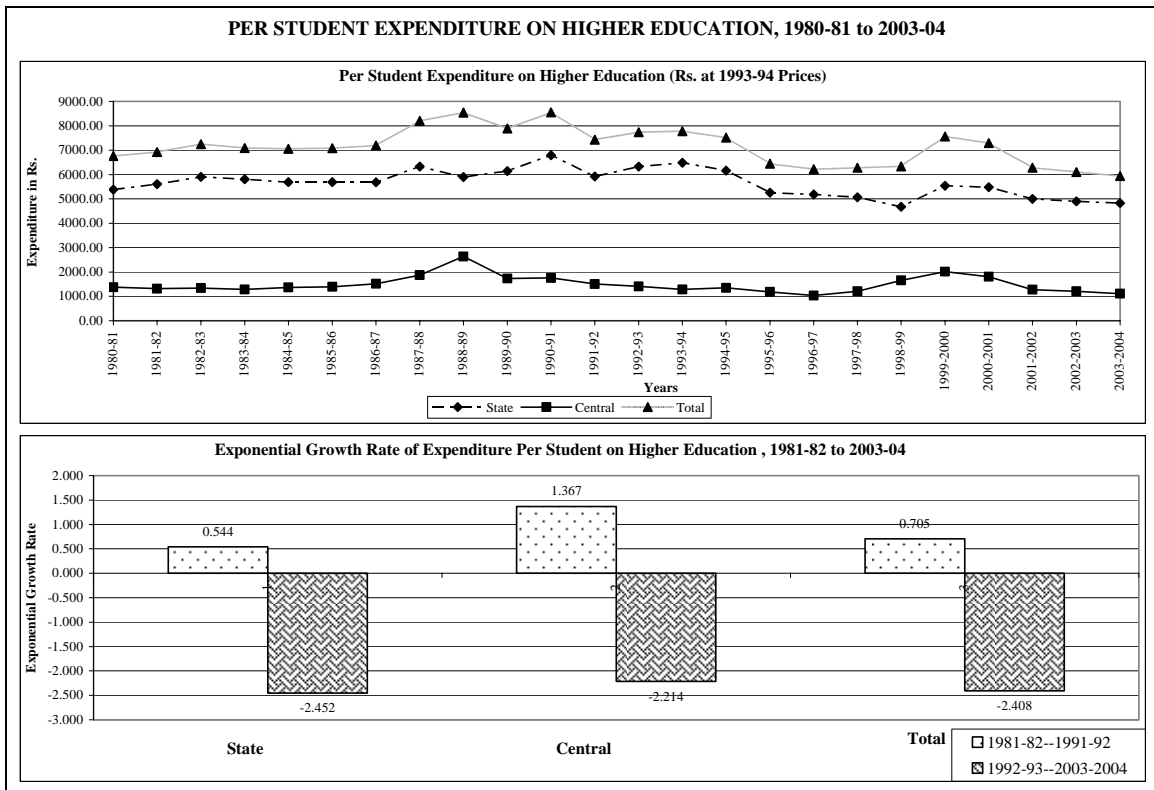
The last decade and a half has seen the strong emergence of for-profit educational institutions, principally in the areas of professional education (engineering, technology, medicine and para-medicine, management etc.) but also in other streams of general education. The private institutions which are not affiliated to universities are accredited to grant degrees/diplomas by the All India Councils, or by the respective universities to which they are affiliated. Private ('recognized') institutions, which do not seek government funding are expected to adhere to minimum standards but are subject to fewer regulations with respect to fees, admissions etc.

No firm estimates are available of the expenditure on financing education by private managements. The National Sample Survey occasionally carries out household surveys to estimate participation in education and household costs of education. Household costs are divided into different types of fees (tuition, examination, other fees) and other costs (private tuition, transport, lodging etc.).

The survey results are available for 1995-96, and capture the initial impact of liberalization on the higher education sector. As can be visualised, costs per student in higher education are considerably higher in privately managed colleges, especially in unaided colleges. Fees are also much higher in engineering and other professional

courses compared to general courses and arts/humanities. The details of annual fee per student in general education and all higher education (including technical education are given below):

Table 2: Total Fee per Student, 1995-96 (Rs.)

	General education	General & Tech. education
Government / Local body	851	877
Private – aided	1374	1497
Private – unaided	3331	3495
All	1198	1276

Source: Computed from NSS, 52nd Round, unit record data.

While, in any case, participation in higher education is concentrated among better-off households, the net result of the different cost implications of higher education across state funded and private colleges is to further concentrate the access to the well-off. The 1995-96 survey shows that in government funded and managed institutions, the poorest 40 percent households comprised only 9.9 percent students, but this percentage shrank to 5.8 percent in the case of private institutions.

Table 3: Percentage Students in Higher Education (By Type of Management)

MPCE Groups	Government + Local body	Private aided	Private un-aided	Total
Bottom 4 deciles	9.9	5.8	5.8	8.3
5th & 6th deciles	12.8	8.9	8.1	11.0
Top 4 deciles	77.3	85.4	86.1	80.7

Source: Computed from NSS, 52nd Round, unit record data.

Government funding finances an overwhelming proportion of expenditure in government institutions. In private-aided institutions, government finances contribute to a major part of the recurrent expenditure (with some part of the fee being debited against specific types of expenditure) (and in some cases, part of the capital expenditure) but the revenue accruing to these colleges is supposed to cover other types of expenditure. In the case of private un-aided colleges, their entire revenue goes towards the maintenance of these institutions. Thus, the total fee realised by the private colleges can be considered to be an approximation of the expenditure incurred by these private entities.

In 1995-96, a total of Rs. 320 crores was realised as fees by the government institutions, and an equal amount of fee was realised by private-aided institutions, while Rs. 147 crores was realised as fee by private unaided institutions. Thus, the private institutions in general educations realised a total of Rs. 467 crores, equivalent to only 0.045 percent of GDP. During the same year, the Central and state governments together spent Rs. 3871 crores. Thus, under the assumption discussed above, the expenditure by private managements was probably only around 10.8 percent of public expenditure. However, the private sector has been making higher investments in higher education, which would not be reflected through cost recovery in existing institutions.

The general point here is that although firm estimates of financial expenditure by private institutions in higher education are not available, available indirect estimates suggest that these may have amounted to just over 10 percent of the total public expenditure on education. These estimates need to be improved upon, and it is very likely that they have increased significantly in the last decade, but they do suggest that the public sector clearly

dominates spending on higher education in India, except perhaps in some segments of professional and/or technical education.

Financial Requirements for Higher Education

The National Accreditation Council (NAC) grades universities and colleges in India based on an assessment of various dimensions of their education performance. In order to be graded, institutions have to come forward voluntarily thus rendering a self-selection bias in the grading. Nonetheless, a large number of these institutions do not come up an average level of performance and the deficiencies are largely related to sub-optimal size and infrastructure. As shown earlier, real per student public expenditure in India is not only low, it has also been declining over recent decades.

At the same time, the need to increase enrolments and expand the coverage of higher education is strongly felt and this is considered to be closely linked to the goal of national development. Recently, the National Planning Commission and the University Grants Commission have both stressed the need to expand enrolment in higher education by five percent of India's Five Year Plan period (2006-07 to 2011-12).

Improvement in quality along with expansion in enrolments has to take place along with provision of equitable access to all sections of society. This puts the primary burden on public expenditure, as private education can not be expected to take care of social goals and a policy of private-for-profit provisioning based on public subsidies is likely to sub-optimal.

We have estimated the requirement of public expenditure in order to achieve a target increase of 5 percent in Gross Enrolment Rate, under different scenarios. The assumption and results of this exercise are briefly discussed below.

(a) Current Enrolment Scenarios. There are large variations in the estimates of enrolment according to various sources of data, leading to various base level scenarios. At present, the Ministry of Human Resource Development compiles detailed enrolment data, by type of course, based on data provided by states and councils of education. These are published annually in the Selected Education Statistics (SES). This data source is the most comprehensive annual source on enrolment in higher education. The latest year for which provisional results are currently available is 2003-04. A projection of the enrolment data of the SES for 2006-07 shows that the total reported student intake in 2006-07 is likely to be 1.28 crores (GER: 9.7 percent), with the intake of students in the general stream (including B. Ed.) being 1.04 crores. The fitted trend shows that during 1993-94 to 2003-04, general student grew at a rate of 8.3 percent whereas enrolment in technical enrolment grew at a rate of 12.4 percent annually.

The Selected Educated Statistics are likely to underestimate total student intake in higher education for a number of reasons. The likely underestimation of enrolment by the SES is brought out sharply by two alternative sources of education enrolment viz. the National Sample Survey and the Population Census. These figures have been analysed by us separately and details ate not reported here. However, it may be pointed out that a projection of the growth rate of enrolment in the 1991 and 2001 Census provides an estimate of total enrolment in higher education of 2.07 crores or a GER of 15.6 percent. With the proposed 11th Plan target, the total enrolment is estimated to increase to 2.97 crores (by 90.7 lakhs) and the GER to 20.6 percent in the terminal year of the Eleventh Plan. *The Census estimates may be treated as upper bound estimates, covering both the formal and informal, public and private systems, as also recognised diploma and certificate education.*

However, for the purpose of this paper, we have constructed scenarios based on the premise that despite limitations, the SES is the best possible source of data on formal higher education with a fairly large coverage of the government supported sector in education. Since no other source of data provides disaggregated trend values of enrolment in this sector, this note builds two different scenarios based on SES data to form the basis of the estimates of public financing for the Eleventh Plan.

Table 4: Projected Enrolment (in 000) based on SES with a Target of Five Percent Increase in GER

year	Academic Year	Pop 18-23	Total Higher Education	Total GER	Addl. Total Enrolment	Share of Tech in Total Enr (%)	Tot Tech & Prof Ed	Tot Gen	Addl General Enrolment
	Base Year								
2006	2006-07	132243	12817	9.7		0.20	2418	10399	
11 th Plan									
2007	2007-08	135440	13950	10.3	1133	0.22	3069	10881	**482**
2008	2008-09	138318	15353	11.1	1403	0.24	3685	11669	**787**
2009	2009-10	141257	17092	12.1	1739	0.26	4444	12648	**980**
2010	2010-11	144259	19186	13.3	2094	0.28	5372	13814	**1166**
2011	2011-12	144287	21210	14.7	2024	0.30	6363	14847	**1033**
					8393				**4448**

Source: Projections based on SES data; assuming a 5 percent increase in GER and an increase in share of technical and professional education from 20 to 30 percent.

Almost all the enrolment estimates show that the technical/professional stream in education has grown at a much faster rate in recent years – varying from 1.5 times (SES) to nearly double (NSS). This is also consistent with the changing demand of the economy. Hence, the composition of enrolment is likely to change over the 11th Plan period. Estimates that have been prepared reflect this change.

Private (unaided) education has also grown at a rapid rate in the last several years. However, no firm estimates are available of the share of private in total enrolments. The only source of such information is the NSS 52nd Round, which gives estimates for 1995-96. According to estimates generated from household data of this NSS Round, 8 percent of enrolment in the higher education sector was in private unaided institutions. The share of private education was higher in technical and professional education (20 percent in engineering, 10 percent in medicine). However, the share of private unaided education in the enrolment figures reported in the SES is likely to be very small and can also be ignored in estimating the financial requirements based on SES estimates. Hence, we have assumed (as stated earlier) that the SES enrolment largely reflects the government supported formal sector in higher education, and not the private unaided and informal sector.

(b) Recurrent and non-recurrent expenditure per student. Normative requirements of recurrent expenditure to meet quality standards, and non-recurrent expenditure to cater to expansion of capacity are difficult to come by. We have, however, benefited by a detailed exercise done by a High Power Committee set up by the Central government (the Oversight Committee) and a subgroup of the Committee(Group on Central Universities). We have particularly considered the benchmarks of the Group for colleges of Delhi University.

The per student expenditures for Central Universities finally recommended by the Oversight Committee for Social Inclusion are 1.62 lakhs (non-recurring) and Rs. 1.21 lakhs (recurring, per year). By revising the benchmarks of the Committee, we have adopted a norm of Rs. 26,250 per student as recurring expenditure, and

Rs. 40,000 per student as non-recurring expenditure. We have also considered an alternative scenario in which the government does not reach the above norm, but is able to raise present per student expenditure in 1993-94 by 25 percent in real terms (to Rs 21,200 per student in 2006-07 prices).

Our calculations are based on the premise that the increased revenue expenditure will be available to about one-fifth of the enrolled students each year over the Plan period in the form of increased support to educational activities. This expenditure includes both Plan and non-Plan, Centre and State. Similarly, we assume that the total non-recurring expenditure will spread over five years in the following ratios: 10%, 15%, 25%, 25% and 25%.

Estimate of Financial Requirement.

Our estimates, based on norm-based requirements for recurring costs are presented in Table 9.4**.** This shows that the total additional outlay required for of achieving the enrolment targets will increase from about Rs 5,474 crores in the first year to Rs. 25,127 crores over the Plan period. As a percentage of GDP, the total outlay on higher education will increase from 0.65% to 1.06 %.

Our estimates, based on a mark-up over existing recurring costs are also presented in the table. These show that the total additional outlay required for of achieving the enrolment targets will increase from about Rs 3,849 crores to Rs. 14,345 crores over the Plan period. The total additional outlay which will be required over the 11th Plan period will be Rs 47,362 crores. As a percentage of GDP, the total outlay on higher education will increase from 0.59% to 0.79 %. The additional outlay required will increase from 0.13 percent in the first year of the Plan to 0.36 percent in the final year.

In addition, the government has already committed itself to a considerable increase in investment in Centrally funded institutions in order to make them socially inclusive. The likely costs to meet this requirement could be about Rs. 3260 crores or only about 0.02 percent of GDP.

The norm based estimate that we have made shows that the cost of higher education will exceed 1 % of GDP in the final year. The recommendations of the Oversight Committee are over and above this expenditure. Although, such an increase is desirable, it may not be immediately forthcoming.

Table 9.5: Estimate of Additional Requirement (Rs. 000 crore)

Year	Enrolment in General Education (000)	Total trend based State exp + Central Non-Plan	GDP Factor Cost	Based on recurrent expenditure of Rs. 26,250 per student			Based on recurrent exp. Of Rs. 21,200 per student		
				Total estimated expenditure	Additional Outlay Required	Additional Outlay as % of GDP	Total estimated expenditure	Additional Outlay Required	Additional Outlay as % of GDP
2006-07	10399								
11th Plan									
2007-08	482	13707	2958686	19181	5474	0.65	17556	3849	0.59
2008-09	787	14588	3195381	24751	10164	0.77	21103	6516	0.66
2009-10	980	15526	3451012	31719	16193	0.92	25797	10271	0.75
2010-11	1166	16525	3727093	37392	20867	1.00	28953	12428	0.78
2011-12	1033	17588	4025260	42716	25127	1.06	31933	14345	0.79
	4448	77933		155712	77779		125296	47362	

Notes: (1) All estimates based on 2006-07 prices (5.5% higher than 2005-06 level) and in Rupees crores

(2) Non-recurrent exp. At Rs. 40000 per student; (3) GDP growth rate conservatively assumed at 7 percent over 11th Plan period.

It may be noted that a Committee chaired by the noted economist, Prof. Tapas Mazumdar, has recommended a target of 1 percent of GDP for higher education, consistent with the commitment of the present government, made in its Common Minimum Programme, of reaching a target spending of 6 percent on education. On the other hand, the Approach paper has recommended has recommended an expenditure increase by 0.25 percent of GDP. This would imply a total expenditure by the Centre of 0.30 to 0.32 percent of GDP (excluding technical education). As per our calculations, an additional outlay of 0.62 percent will be needed over the Plan period with norm based expenditures, and 0.36 percent with the lower mark-up based expenditures.

Three important issues concern the total targeted outlay and the contribution of the Centre and the States. First, the required increase in outlay will have to come from an increase in the *Plan* outlay. Second, since higher education is a concurrent responsibility of both the Centre and the States, a formula needs to be devised by which both the Centre and the States can share this responsibility. This would mean that the States share in the required development outlay, although the major responsibility may remain with the Centre. Third, the required expansion will ultimately transfer the almost entire financial burden to the States unless the Centre also comes up with a scheme by which it can participate in the maintenance of institutions normally fully maintained by the States. In other words, it would be necessary to think of a financing regime in which the Central and State governments share in both development and maintenance costs (Tilak 2006).

Issues and Options in the Financing of Education

The imperatives in higher education in India today demand a rapid and significant expansion of the higher education system, keeping in mind concerns of access, quality and relevance. This implies a much greater role for both the public and private sector. Ideally, given the high rate of social return from higher education, the private sector should come forward on a non-profit basis, but in the emerging scenario, with education being slated as a global commodity, policy has to reckon with increased interest in education as a profit-making venture. At the same time, public expenditure will have to continue to play a role in expanding the higher education sector, maintaining quality and relevance, and providing equitable access. This calls for a much higher increase in public expenditure.

In the changed scenario, the higher education confronts the following important issues:

How and to what extent can public expenditure on education be raised?

As we have shown in the preceding sections, the real expenditure on higher education needs to be increased quite significantly. Assuming a rate of growth of GDP of about 7 percent annually, we estimate that public expenditure would have to increase to more than one percent of GDP, from its present level of only about 0.40 percent of GDP. Even if this increase takes place in a graduated manner, as we have projected, it would call for a considerable reprioritisation and fiscal effort on the part of both the Centre and the States. If, as is being envisaged presently, the fiscal position of the centre and the states continues to improve, and national income increases at nine percent over the next five or ten year period, the relative fiscal effort required to achieve a certain target in terms of real per student expenditure would be lower.

The centre already levies a cess on tax for financing elementary education. In the event that general tax revenue is not found to be sufficient, the centre and the states could consider levying such a tax to fund the needs of other education segments, including higher education. Although a segment of opinion does not favour the levy of a cess, for example, the CABE committee (NIEPA 2005a, pp.37-38), cesses are effective in mobilising public opinion in favour of higher expenditure on specific sectors.

At the same time, as we have pointed out, new financing mechanisms may be needed, by which both the central and state governments partake in the development as well as maintenance expenditure on higher education.

How and to what extent can resources to public institutions be supplemented by other sources?

Given the constraint on public resources, several proposals have been put up in the past which focus on increasing resources at the institutional level. These include (a) increase in student fee; (b) starting of self-financing courses; (c) more effective partnerships with industry and more consultancy assignments; (d) philanthropic donations; (e) utilization of land resources for commercial purposes (mooted recently by the National Knowledge Commission or NKC). Of these proposals, (c) and (d) are not particularly controversial, provided that they are not treated as prerequisites and do not substitute for existing resources.[6]

On the issue of fees, there is general agreement that in most cases, the real tuition fee per student has been declining in government institutions. The CABE committee has assessed that total fee formed about 15 percent of recurring cost of universities and colleges in the late 1980s while tuition fee formed only 2-3 percent of such costs. But in some cases total fee realisation was 40 percent or more of cost. (NIEPA 2000, NIEPA 2005a, pp. 31-32): Internationally, fees constituted 15 percent of recurring costs in many developing and developed countries, including public universities in the USA (NIEPA 2005a, ibid.). However, in China fee realisation now constitutes about 30 percent of recurring cost (Carnoy 2006).

In principle, the fee could be raised for better off students, while offering freeships and scholarships to the needy. This is also one of the recommendations of some UGC committees and of the NKC. In courses, where market rate of returns are perceived to be high, needy students could draw upon loans.

In practice, given the size of India's informal economy, assessing the financial status of a student's family is likely to be difficult. Moreover, banks continue to be very conservative in granting student loans, insisting upon collateral and guarantees. The present experience in this respect is not encouraging, although reforms in the system could make the loan system a more effective tool (NIEPA 2005a). Further, one needs to consider the merits of realisation of fee revenue over a system of progressive taxes used to finance education, as is the case for a large number of countries where fee realisation continues to be very low. This is also the recommendation of the CABE committee on education (2005).

The issue of self-financing courses also needs to be examined carefully in the light of experience gained so far. Universities and colleges are now prone to start any 'marketable' degree as a self-financing course with high fees. Apart from the issue of fees, such courses also draw faculty away from the core courses in institutions. Hence, this issue needs to be reviewed in depth.

Should public expenditure subsidise private institutions?

In the past, as discussed, the practise in India has been for the private sector to set up educational institutions and to run these so that they meet the eligibility criteria set by the state governments for funding. Gradually, governments provide regular funding to these institutions to cover a significant portion of their recurrent costs. Although not explicitly stated, the assumption has been that the management of these institutions has established these institutions on a non-profit basis to meet a public cause. In effect, however, private managements may have had a variety of motives to set up these institutions and we discuss below there may be a difficulty in

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6   However, the role of philanthropic funding in both public and private institutions has declined in India (NIEPA, 2005s; Kapu and Mehta 2004). In 1951, such funds constituted 12 percent of the total expenditure on education (NIEPA, 2005a).

distinguishing between those establishing institutions for profit and those doing so for charitable purposes. Kapu and Mehta (2004) have argued that there has been, in recent decades, a decline in philanthropic capital in education, with a rapid increase in 'de facto' privatisation.

As discussed earlier in this paper, most states have placed a virtual moratorium on providing regular funding to private institutions. The expectation, therefore, is that all non-governmental institutions will generate enough resources on their own (through fees, contributions, or other sources) to run these institutions. As far as state funding is concerned, this perspective obliterates the distinction between non-profit and for-profit interests in education. The NKC has now proposed that the state subsidize, private (non-profit) education through a sizeable land grant as well as a generous scholarship policy, which enables them to pursue a needs-blind admission policy.

In principle, state support to non-profit institutions working for public good appears to be well-founded, but will need to be made on a clear distinction between different types of institutions. Recent court judgements (see below) have clouded this distinction.[7] Further, in any case, grants to such institutions (i.e. those which are instituted on a philanthropic basis) need to be open, rather than hidden (as would be the case with land grants).

What should be the role of private for-profit institutions?

The private for-profit or self-financing institutions have acquired a large, and mostly undocumented. presence in the higher education system. The data base for such institutions is extremely weak. As discussed earlier, their presence has been most noted in professional and technical education (Kapu and Mehta 2004) but even here enrolment figures are not available, and analysts rely on the numbers of recognized institutions or permitted intake (see ibid.; also Anandakrishnan, 2006; NIEPA 2005a). But even in general education, there is now a mushrooming of private, self-financing colleges. In one university alone (Kanpur in UP), the number of such colleges outnumbered state assisted colleges in the ratio of 3:1!. The growth of self-financing institutions has been most marked in the three Southern states of Tamil Nadu, Andhra Pradesh and Karnataka, and the Western state of Maharashtra (Kapu and Mehta 2004). In Tamil Nadu, self financing colleges comprised 56 percent of arts and science colleges, and 96 percent of engineering colleges in 2003-04 (Anandakrishnan 2006). The enrolment in these colleges accounts for the major part of the difference between the enrolments reported in the official statistical system and those captured by household surveys. According to the CABE committee report, there is a sense in which the Indian higher education system is one of the most privatised in the world.

These institutions charge commercial fee rates, but besides have in the past been known not to adhere to any transparent admission procedure and in many cases, charge 'capitation fees'. There have been attempts to regulate their fee structure (at least for part of the admissions), and systemize admission procedure in a piecemeal fashion through court judgments and state or national level regulations. But the regulatory framework in relation to them is extremely weak, and an attempt is only now being made to address some of the issues, but without great coherence (Kapur and Mehta 2004). The basic difficulty is that invariably all such institutions are registered as non-profit institutions (trusts, or societies) and are legally permitted to generate revenues which cover their costs and permit accumulation of surpluses[8] Anandakrishnan (2006) finds that only a quarter of such institutions

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[7]   A detailed discussion of the issues involved is in Kapu and Mehta (2004)

[8]   Two judgments of the apex Supreme Court (the Unnikrishnan case in 1992, and T. M. Pai and others vs the State of Karnataka in 2002) have clarified that private managements have the right to establish educational institutions, subject to reasonable regulations in certain matters such as quality, malpractices, general admission procedures etc. The Courts have also ruled that these institutions can not be run as businesses but should be established as charitable trusts or societies, with a non-profit motive. However, these institutions are free to charge fees which cover their operating costs and allow surplus to accrue which can be ploughed back for the development/expansion of the

genuinely function as public trusts or charitable societies, committed to educational excellence and conscious of their responsibility.

In the case of the self-financed institutions, the basic casualty is equity and access, both of which have to be provided through the public education system. The issue now is institute a proper regulatory framework, which can safeguard the interests of all sections and at the same time permit these institutions to add to the capacity of the higher education sector.[9] This is also the case with foreign universities, for whom detailed regulations are required, so that only universities with high international standards and non-commercial motivation, are able to use the WTO/GATS provision to operate in the country.

Conclusion

There is now sufficient evidence to show that higher education generated large positive externalities for growth and that the level of development of a country and the stock of highly educated manpower is related (Tilak 2006, Carnoy 2006). This is also now widely recognized both in India and China. Carnoy (2006) points out that among the BRIC countries (Brazil, Russia, India and China), the enrolment rate in higher education is the lowest in India and also appears to growing the most slowly. Although, it is likely that expansion in enrolments in India is underestimated due to the poor data base regarding private unaided education, still the performance of China in expanding enrolment in higher education stands out as exceptional. The GER in higher education in china increased from 3 percent in 1985 to 16 percent in 2001.

An area of great concern in India is the low level of per student expenditure, reflecting poor educational support and infrastructure. According to Carnoy (ibid.), the per student expenditure in Brazil in 2000 was $5,5000 PPP, whereas in China it was about $11,000 PPP. By contrast, the per student expenditure in India in 2000-01 was only $1300 PPP.

The financing of higher education in India is still largely in the public domain. In India, however, private educational institutions played an important role from the very beginning. A large percentage of these institutions were provided recurrent financial support by governments and were closely regulated by the state. However, the new self-financing institutions which have grown rapidly since the 1990s are poorly regulated and are mainly governed by commercial motives. In China, by comparison, higher education was completely state financed but since the 1990s, nearly 30 percent of total expenditure is financed through fee realization, while in India this element is lower, at about 12-15 percent.

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institutions (Anandakrishnan, 2006). Thus technically, the only bar on the management of these institutions is that they can not invest surpluses in businesses (outside the Trust). This, as we discussed earlier, makes for a very thin legal dividing line between philanthropic and for-profit investments in education (see also Kapu and Mehta 2004). The government was also barred from making any reservations in admission in another court judgment in the Inamdar case, but has introduced a constitutional amendment (Article 15(5)) to nullify this judgment.

[9] One of the suggestions in this regard (Anandakrishnan 2006) is to treat all such institutions as commercial entities, and subject them to reasonable regulation.

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