

ENROLMENT IN HIGHER EDUCATION

**A TREND ANALYSIS
(1961—75)**

G. D. SHARMA

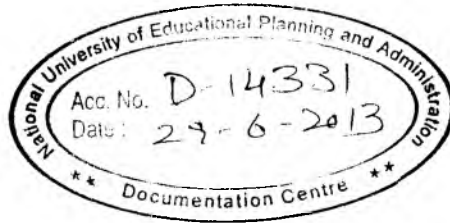
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FOREWORD

From about the mid fifties to the late sixties, India had an unprecedented rate of expansion at the college and university level. Sometimes it was as high as 13-14% per year. The experience of the rest of the world in this regard is pertinent. The highest rate of growth experienced anywhere has never exceeded 5-6 % per year. No wonder this proliferation of numbers imposed an intolerable strain on the system. Fortunately for the last 4-5 years the rate of expansion has come down to 4-5% per year now. How this has come about is not that much of a mystery as some people would like to believe. Of the various factors responsible for it, the following three may be mentioned in particular.

One, with the introduction of the 10+2+3 system, the basis of calculations has undergone a change. 3-4 years ago it was customary to talk of 3.5 million students at the post-secondary level. Now this figure is put at 2.5 million. The remaining million or so are now being counted amongst those who are doing the +2 stage.

Two, unemployment among the educated has risen all these years. In 1967, for instance, the Employment Exchanges had 2.7 million persons registered on what they called the 'live register'. According to the latest data available this figure has crossed 10 million. When employment is that difficult to secure, it discourages people from going on with their education. Till the middle sixties or so, this fact was not given particular importance because people hoped that 'somehow' they would eventually land a suitable job. It did happen in quite a number of cases. But the accumulated backlog of those who eventually found it difficult to get any job kept on increasing. It has now gone beyond even 10 million. Even if college education is relatively cheap, as it is in our country, it does not necessarily guarantee a job to every one who manages to get a degree. Consequently the rush for admissions has started declining.

Three, while the first two explanations can be quantified to some extent, the third explanation is more in the nature of a hypothesis. Till the end of the sixties the middle class was proliferating at quite a fast rate of development. For the last several years now, its rate of development has come down. And so indeed has the rate of expansion in education. The needs of the children of the middle class who are the principal clients of tertiary education are more or less met by the existing institutions. Therefore, not many new institutions are being established. On the contrary some of the existing ones, not very many though, have had to close down. In any case with the growth of the +2 sector there has been a certain amount of shuffling and reshuffling. All this has therefore meant that enrolment has tended to get stabilised at 4-5% per year. If this rate of growth continues to prevail over the next decade or so also, as seems likely, perhaps the university system would have breathing time to consolidate and take care of some of its deficiencies. Not much thought or attention or even investment have gone into this aspects of the problem but awareness of the need for doing something to improve quality is growing.

I commend this brief monograph to the attention of those interested in higher education as well as the policy makers. There is a lot of useful data presented most of which was unavailable before. It is hoped that the analysis offered here would be taken into account while drawing up projections and plans in respect of the Sixth Plan period.

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New Delhi

P R E F A C E

This occasional paper examines the trends in enrolment in higher education over a period of 15 years i. e. 1961-75. Since the declining rates of growth in enrolment is observed during the period 1971-75, the study also attempts to examine the factors associated with the variation in enrolment during 1961-75. Quantifiable factors namely, expenditure on higher education, students' fees, per capita net domestic product and growth in employment among degree holders, have been regressed on enrolment data. Some of the non-quantifiable factors namely, government policies, new developments in education that might have influenced trend in enrolment have also been examined. At the end it offers some policy suggestions.

I am grateful to Dr. Amrik Singh for his guidance and encouragement at every stage of this study and to Vice-Chancellors S.N. Sen, I.J. Patel for their valuable suggestions. I am also grateful to Dr. Y.K. Alag for going through the draft and making some very useful suggestions.

I am thankful to Prof. Ruddar Dutt and Drs. K. N. Kabra, Balvir Singh and the staff of the Sardar Patel Institute of Social and Economic Research for their suggestions in the course of discussion on this paper. I, however, owe the responsibility of lapses, if any, in the study.

I wish to thank Mr. Sutinder Singh and the Library Staff for their help.

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G. D. SHARMA

CONTENTS

<u>SECTION I</u>	<u>Page No.</u>
Background	1
The Problem	2
Objectives of study	3
<u>SECTION II</u>	
Analysis of the problem	4
Trend Analysis, by faculty	7
By stages	17
By states	22
By faculty and states	41
Pattern analysis	43
<u>SECTION III</u>	
Factors influencing enrolment	45
Study of quantifiable factors	46
Statement of hypothesis	46
Statistical model	47
Independent variables	48
Dependent variables	48
Test of hypotheses	48
Study of non-quantifiable factors	53
Future trend	56
<u>SECTION IV</u>	
Implications	60
Employment	60

Output of graduates	60
Economy	63
<u>SECTION V</u>	
Summary, conclusion & policy suggestions	64
Summary	64
Conclusions	65
Policy suggestions	66
Appendices	76
Bibliography	114

LIST OF TABLESPage No.

1. Enrolment in higher education, India 1960-61-75	5
2. Enrolment in Higher education, by faculty India, 1960-61-75	10
3. Enrolment in higher education (excluding PUC/Inter/Pre-professional), India, 1960-61-75	18
4. Rates of growth in enrolment, by stages India, 1961-62-74	20
5. Annual percentage rates of growth, by stages, India, 1960-61-75	21
6. Enrolment in higher education, by states, 1961-62-74	28
7. Enrolment in correspondence courses, India, 1971-76	43
8. Correlation Matrix of Independent variables	49
9. Regression coefficients of correlation, standard error, T values, R and F value of 4 variables on enrolment, India 1961-75 (constant prices)	50
10. Correlation Matrix of independent variables (log function)	51
11. Regression coefficients, standard errors, T values, R ² and F value of four variables on enrolment (log function), India, 1961-75 (constant prices)	52
12. Original admission targets and actual intakes, engineering faculty, India, 1963-64-65	54

13.	Projected enrolment in higher education, India, 1960-61-2000 A. D.	57
14.	Growth in employment of teachers, higher education, India, 1965-66-75	62
15.	Output of graduates, India, 1960-61-73	64

LIST OF APPENDICES

A.	Enrolment in higher education, India, 1950-51-60	76
B.	Enrolment in higher education by faculty and by states, 1961-62-74	77
C.	Pattern of enrolment in higher education by faculty, 1950-61, 1970-71 and 1973-74	111
D.	Distribution of under-populated colleges by states, 1976	112
E.	Grants paid by UGC under Rupees three lakh schemes to affiliated colleges, 1974-75	113

LIST OF GRAPHS

1.	Annual percentage rates of growth in enrolment in higher education, India, 1962-64	6
2.	Annual percentage rates of growth in enrolment in higher education, by faculty-India, 1962-74	12
3.	Annual percentage rates of growth in enrolment, excluding PUC, Inter Arts and Pre-professional, India, 1962-75	19
4.	Annual percentage rates of growth in higher education by states, 1961-62-74	32

SECTION 1

Background

As in the case of economic activities in general, investment and expenditure on education services influence income generation, distribution and consumption in the economy. The same is true of expenditure on higher education. The expansion of education services results in a demand for educated man power, raw-material and consumable goods. In turn that leads to income generation, distribution and consumption through the agents engaged in education.

The process may be identified in two ways:

1. The impact on income generation, distribution and consumption through the agents used for production of educated and trained manpower.
2. The impact on the economy through spill-over effect of education and use of educated and trained manpower for production purposes. Also the impact on the economy through the research and development by educated persons. It is, however, very difficult if not impossible to measure the impact of the latter.

The magnitude of impact on the economy due to the first process would depend on the amount spent on education. That in turn would depend on the demand for education and the resource availability. Initially, it is likely that the supply for education services might precede the demand. But as soon as the importance and need of education is realised by the public, the demand will assert its pressure. The size of the education service industry would, therefore, depend on the demand made by the citizens for it. That in turn would depend on the demand for educated and trained persons in the economy (which includes the demand by various organizations for gainful employment of the individuals) and the status of

education in a particular social setup.¹ At any particular point in time the size of the education service industry may be determined by the number of persons enrolled in educational institutions.² The parts of the industry are education at the primary, secondary and higher levels. We are concerned with the impact on the economy due to the amount spent on higher education. The variation in magnitude of the size of this part will have impact on the total education industry and in turn on the economy. That is to say that the expansion of higher education is likely to have a positive effect on income generation and distribution and on consumption and negative one if there is a decline in the size of this part.

The trend analysis of the enrolment in higher education may, therefore, be viewed in this light. We shall not try to measure its impact on the economy. We shall, however, examine a related problem, namely the relationship between the growth and decline in enrolment in higher education and the economy as a whole and the specific socio-economic determinants involved.

The Problem

Recently it has been observed that the growth rate in enrolment in higher education has declined to 3% in 1973-74 from 14.5% in 1969-70 over 1968-69.³ This situation raised several questions:-

1. What was the rate of growth in enrolment in higher education during the 1960's and the 1970's?
2. Did trends vary among the different faculties and the States?

-
- 1 Sometimes education, particularly higher education may be demanded for social prestige/status
 - 2 Here we are only concerned with the educational institutions which are recognized by the various authorities.
 - 3 India, Ministry of Education, Social Welfare & Culture. Annual Report, 1975-76, New Delhi, Author, 1976 : pp. 19

3. What are the factors responsible for the decline in the rates of growth?
4. What are the implications of this declining trend?
5. How should the declining rates of growth in enrolment be viewed?

We discuss some of these issues in this study.

Objectives of the study

The objectives of this study, therefore, are to:

- a. examine the problem particularly in its locational or regional aspects;
- b. trace out the factors responsible for the declining trend;
- c. examine the implications of such trend;and
- d. suggest possible measures to arrest the declining trend if necessary.

SECTION II

Analysis of the Problem

In a developing economy expansion in education at all levels is inevitable. This is partly because of the need of the economy for educated and skilled manpower, and partly because of government policy to universalize education coupled with the desire of people to get themselves educated.⁴ Thus enrolment in educational institutions is likely to grow during the early period of development. The same is also true of enrolment in the institutions for higher education. An analysis of trend of rates of growth in enrolment in the institutions of higher education during the 1960's supports this view.

Incidentally we have also examined the rate of growth in enrolment in higher education during the 1950's. The data regarding rates of growth are given in Appendix 'A' to this section. It may be observed from the table that the annual percentage rate of growth during the 1950's have ranged between 7 and 13%. The annual average percentage rates of growth for the same level in the 1960's works out to 14.7%. Thus as compared to the 1950's and the 1960's, rates of growth in the 1970's have come down.

In India during the 1960's enrolment in higher education had grown at about 12 per cent annually. The rates of growth in enrolment during early seventies declined. In 1973-74 it registered only 3.7 per cent rate of growth over 1972-73. The details may be seen in Table No. 1 and Graph No. 1.

4 The desire for education comes from the fact that education offers better job opportunities and also because it carries prestige in society.

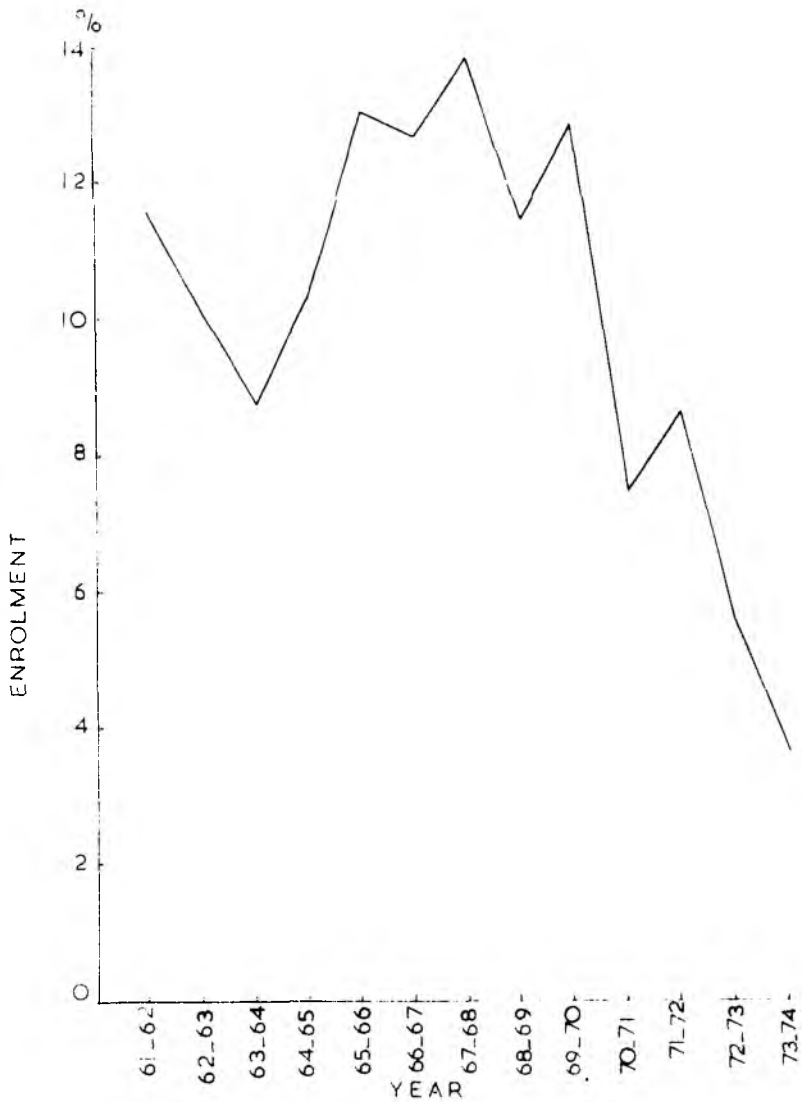
Table 1

Enrolment in higher education, India, 1960-61-74

Year	Enrolment	Percentage rate of growth
1960-61	1,034,934	...
1961-62	1,155,380	11.60
1962-63	1,272,666	10.15
1963-64	1,384,697	8.80
1964-65	1,528,227	10.36
1965-66	1,728,773	13.12
1966-67	1,949,012	12.73
1967-68	2,218,972	13.85
1968-69	2,473,264	11.45
1969-70	2,792,630	12.91
1970-71	3,001,292	7.47
1971-72	3,262,314	8.69
1972-73	3,456,096	15.9
1973-74	3,583,986	3.7

SOURCE: University Grants Commission, Annual Reports 1960-75, New Delhi, Author.

GRAPH NO.1 ANNUAL PERCENTAGE RATES OF
GROWTH IN ENROLMENT IN
HIGHER EDUCATION INDIA, 1962-74.



Trend Analysis — by Faculty

The rates of growth in enrolment in higher education by faculty is presented in Table No. 2 and Graph No. 2. The faculty-wise trend analysis is discussed below:

Arts

In arts faculty the rate of growth in enrolment showed a sort of a concave curve wherein the enrolment rate reached its peak in the year 1967-68. The high rates of growth in enrolment in this faculty till late sixties and then declining rate may be because of the (i) expansion of service sector till mid sixties which created a demand for arts graduates, and (ii) growth in number of arts colleges during this period to meet the pent up demand for higher education. By late sixties the demand for arts education appears to have reached the point of saturation. By this time the signs of unemployment among arts graduates were visible. Therefore, it may be said that poor economic conditions coupled with graduate unemployment in India appear to have adversely affected the rate of growth in enrolment in this faculty in the early seventies.

Science

In science faculty the peak in the rate of growth in enrolment was reached in the year 1965-66 two years before the arts faculty. Thereafter, barring some exceptions, it registered a declining rate of growth. It may be mentioned that enrolment in this faculty is generally related to rates of growth in enrolment in medicine, engineering and other professional faculties. This is because most of the science students branch out to these faculties. The enrolment in engineering, medicine and other professional faculties registered a declining rate of growth in the early sixties. It may be due to unemployment of such degree holders. The rate of growth in this faculty was also adversely affected. Besides this, as the demand for general science graduates in the Indian economy is (because of limited number of laboratories) necessarily limited, unemployment among science graduates also increased during this period. Therefore, both the declining rates of growth in professional faculties and limited scope of employment adversely affected the rate of growth in this faculty.

Commerce

In commerce faculty the rate of growth in enrolment as against the trends observed for arts and science faculties declined sharply in early sixties and then increased, reaching its second peak in the year 1967-68, and then declining slightly. But the rate of growth in this faculty was around 8 to 16 per cent during early seventies, when arts and science faculties registered very low and negative rates of growth. This may be because of the fact that trade and commerce activities in our economy have grown throughout the period under study, although with some fluctuations. This increasing rate in trade and commerce appears to have kept up the demand for commerce graduates in the economy. Hence the rate of growth of enrolment also.

Engineering

In engineering faculty the rate of growth sharply came down in the early sixties. Because of emphasis on industrialization in the second plan in the late fifties and early sixties, enrolment in this faculty was considerably high. But by 1961-62 it was observed that the supply of engineering graduates was much more than what the economy could absorb. The policy of restriction in enrolment was also suggested by I.A.M.R. Therefore, the enrolment rates in this faculty declined in early sixties. After 1965-66 when, in the fourth plan emphasis was shifted to industrialization, enrolment in this faculty again increased. But during late sixties it again declined sharply and registered more than 5 per cent negative rate of growth. In seventies because of a breakthrough in electronics engineering and chemical technology in our economy, the demand for engineering graduates appears to have again picked up. This in turn appears to have increased the rates of growth in enrolment in this faculty.

Medicine

In medicine faculty the rate of growth was consistently low but a major decline was registered in the year 1974-75. This may be due to the fact that supply of medicine degree

holders had considerably increased and unemployment among them was also observed.

Agriculture

The agricultural faculty enrolment declined, except for one or two years, regularly after the year 1962-63. This is the reflection of the lower rates of growth in this sector during the period after 1961 to 1968. Besides the demand for agricultural graduates seems not to have picked up. Even the rich farmers depend on traditional technology or self training rather than on employing a trained graduate.

Veterinary

The demand for veterinary degree holders, as in the case of agriculture graduates, does not appear to have made much headway. As a result of this the rate of enrolment in this faculty is consistently low.

The general trend in rates of growth was, however, reversed during 1970-74, the annual rate of enrolment declined to 3.7%. Except in the Commerce faculty, the annual percentage rate of growth in enrolment declined in all the faculties. In fact Arts, Science, Engineering and Medical faculties registered negative rates of growth during this period. In 1975 these faculties registered negative rates by 7.20, 13.10, 2.36 and 22.22 per cent from the previous year in that order. The rate of growth in Commerce faculty was, however, positive although it fluctuated and declined slightly over this period.

Limitations

The enrolment trend in higher education discussed above includes the enrolment in PUC/Inter/Pre-professional courses. Since these courses are taught in colleges as well as universities they are very much part of higher education. There is, however, some difference in the method through which students can gain admission to higher education in the various States of India. Therefore, the above analysis may not give a very correct picture. To give some examples, it may be mentioned

TABLE 2

Enrolment in Higher Education, by faculty, India, 1960-61-75

Year	Arts	Annual %age of Growth	Science	Annual %age of Growth	Commerce	Annual %age of Growth
1960-61	487, 016	...	294, 329	...	92, 802	...
1961-62	511, 940	5. 11	336, 722	14. 40	125, 142	34. 80
1962-63	535, 291	4. 56	390, 174	15. 87	121, 971	-2. 54
1963-64	597, 049	8. 17	435, 925	11. 72	130, 578	7. 05
1964-65	641, 186	10. 73	478, 702	9. 81	147, 789	13. 18
1965-66	706, 641	10. 20	565, 254	18. 08	165, 283	11. 83
1966-67	786, 124	11. 24	654, 899	15. 85	184, 452	11. 59
1967-68	918, 345	16. 81	737, 858	12. 66	219, 831	19. 18
1968-69	1055, 238	14. 90	802, 369	8. 74	255, 568	16. 25
1969-70	1218, 022	15. 42	914, 739	14. 00	296, 325	15. 94
1970-71	1329, 626	9. 16	948, 009	3. 63	344, 108	16. 12
1971-72	1473, 979	10. 85	988, 089	4. 22	396, 009	15. 08
1972-73	1583, 903	7. 45	1008, 517	2. 06	432, 886	9. 31
1973-74	1657, 228	4. 62	986, 135	-2. 22	484, 594	11. 94
1974-75	1537, 956	-67. 20	856, 995	-13. 10	527, 886	8. 93

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TABLE 2(Contd.)

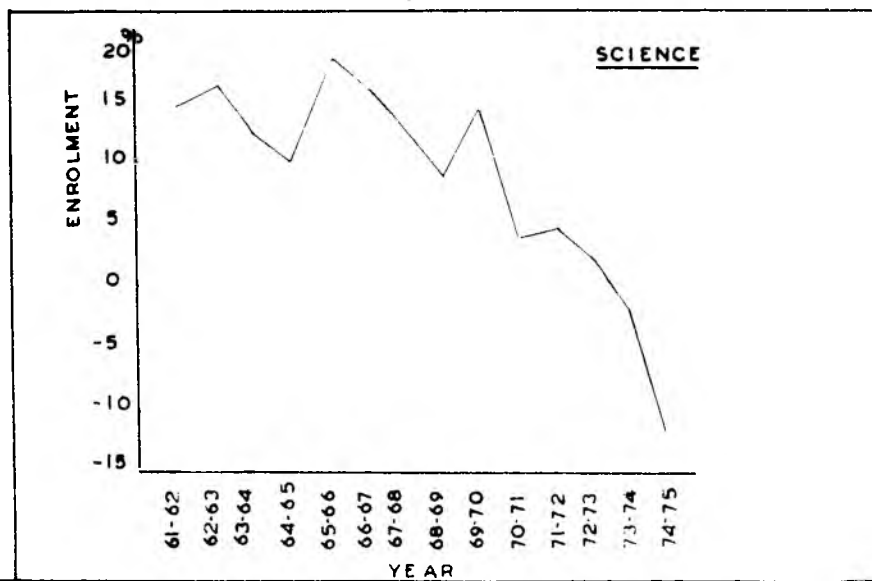
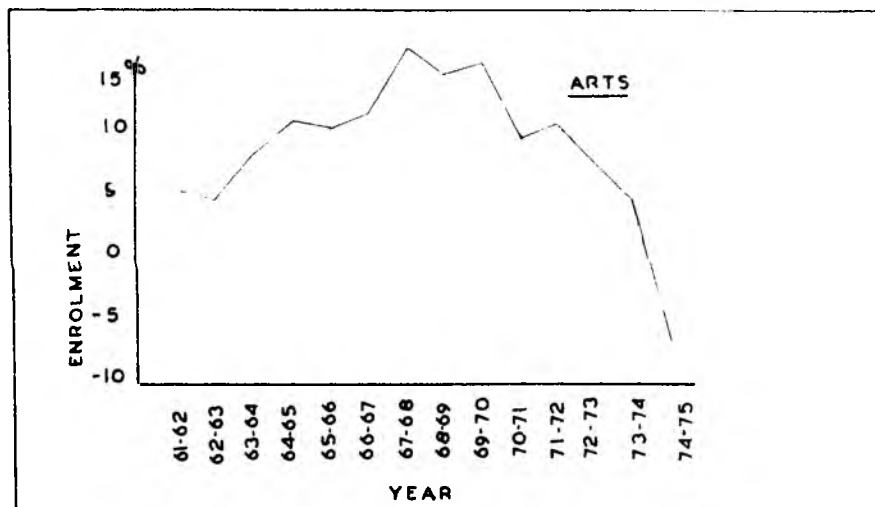
Enrolment in Higher Education, by faculty, India, 1960-61-75

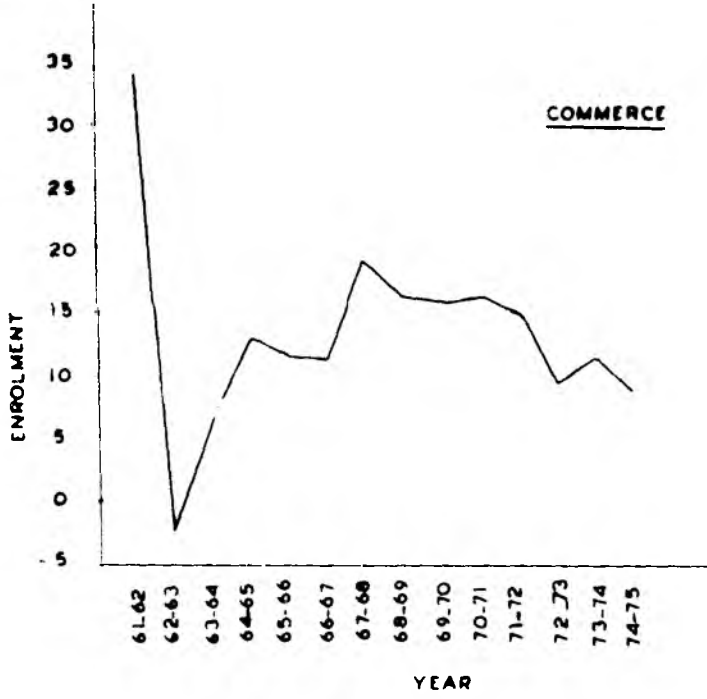
Year	Engg. Tech.	Annual %age of Growth	Medicine	Annual %age of Growth	Agri- culture	Annual %age of Growth	Vet. Science	Annual %age of Growth
1960-61	45,139	...	34,139	...	23,889	...	4,788	...
1961-62	58,168	28.86	39,569	15.90	24,794	3.78	5,214	8.89
1962-63	68,583	17.91	49,546	25.21	31,427	26.75	5,524	5.94
1963-64	73,015	6.45	54,708	10.41	41,116 ^a	30.83	5,624	1.81
1964-65	78,114	6.98	61,742	12.85	44,228	7.56	5,711	1.54
1965-66	85,555	9.52	70,088	13.51	51,190	15.74	6,257	9.56
1966-67	95,422	11.53	77,285	10.26	52,935	3.40	8,553	4.73
1967-68	104,206	9.26	83,422	7.93	51,639	2.45	6,610	0.86
1968-69	101,380	-2.77	90,470	8.44	53,120	2.86	6,590	0.31
1969-70	97,889	-3.45	95,017	5.02	43,415	-18.27	6,131	0.97
1970-71	90,034	-8.03	97,601	2.71	43,352	0.15	6,222	1.48
1971-72	85,543	-4.90	102,446	4.96	42,184	...	6,086	...
1972-73	85,224	-0.30	107,811	5.23	...	...	...	...
1973-74	89,215	4.68	110,410	2.41	...	...	...	...
1974-75	87,116	-2.35	85,881	-22.22	...	...	...	...

- SOURCE :
1. India, Ministry of Education & Social Welfare, Educational statistics at a glance, 1974-75, New Delhi, Author, 1975.
 2. University Grants Commission, University development in India: Basic facts and figures, 1962-63 to 1971-72, New Delhi, Author.
 3. University Grants Commission, Annual Reports, 1960-75, New Delhi, Author.

GRAPH NO.2

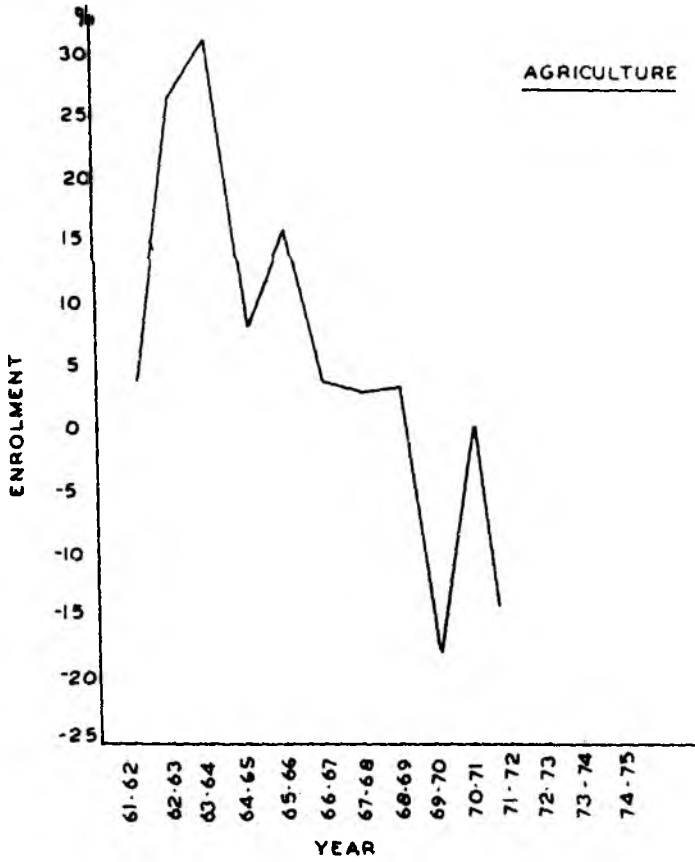
ANNUAL PERCENTAGE RATES OF GROWTH IN ENROLMENT IN
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1962-74



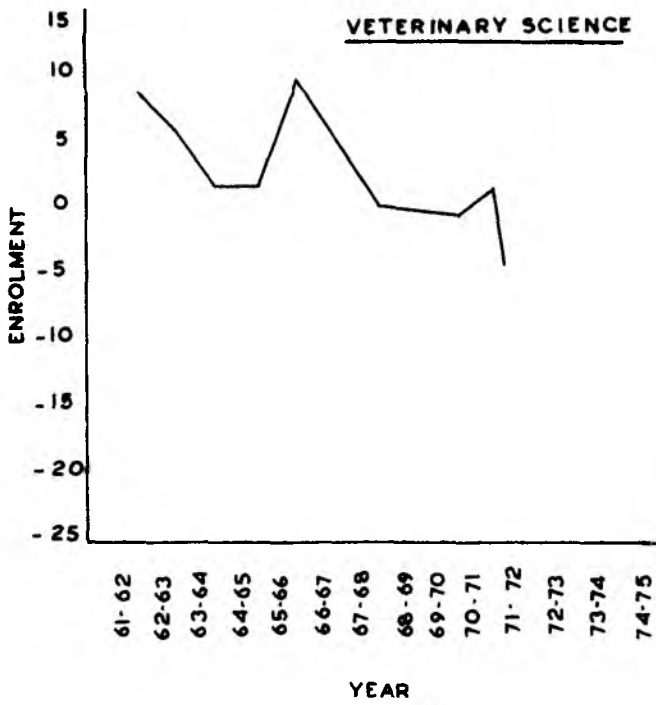
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that in Rajasthan there are two ways to qualify for higher education. One is to secure admission in PUC after passing the secondary examination; the another is to get admission in the 1st year of the 3 years degree course after passing the higher secondary. Therefore, the growth and decline in enrolment may also depend on the number of students coming through these two channels i. e. secondary and higher secondary courses. In Maharashtra the admission to higher education is possible after passing higher secondary examination. And the degree course is of four years divided in two parts namely Intermediate and B. A. /B. Sc. In Madhya Pradesh and Uttar Pradesh, the Intermediate is with the Higher Secondary Board, whereas some other States have already introduced 10+2+3 pattern. Unless this new change is carried out throughout the country these differences would render comparison difficult. With a view, therefore, to be on the neater side, we exclude the enrolment in PUC/Inter and Pre-Professional courses and examine the trend of enrolment in higher education.

Analysis-Excluding PUC/Inter and Pre-professional

Table 3 gives the rate of growth in enrolment in higher education for all India for the year 1961-75. It may be observed that during the 1960's the annual percentage rate of growth in enrolment in higher education ranged between 11.6 and 19.2 per cent. During 1970-75 this annual percentage rate of growth declined. The magnitude of rate ranged between 3.1 and 9 per cent. For details please see graph No. 3.

The rates of growth analysis reveals that during the 1960's enrolment in higher education grew 11-15% annually. In 1970-75 the annual percentage came down to much less than half.

With a view to finding out the locale of the problem we shall examine the enrolment trend by stages and States.

Trend Analysis — By stages

The stage-wise analysis reveals that except for research the rates of growth in enrolment have increased at all stages

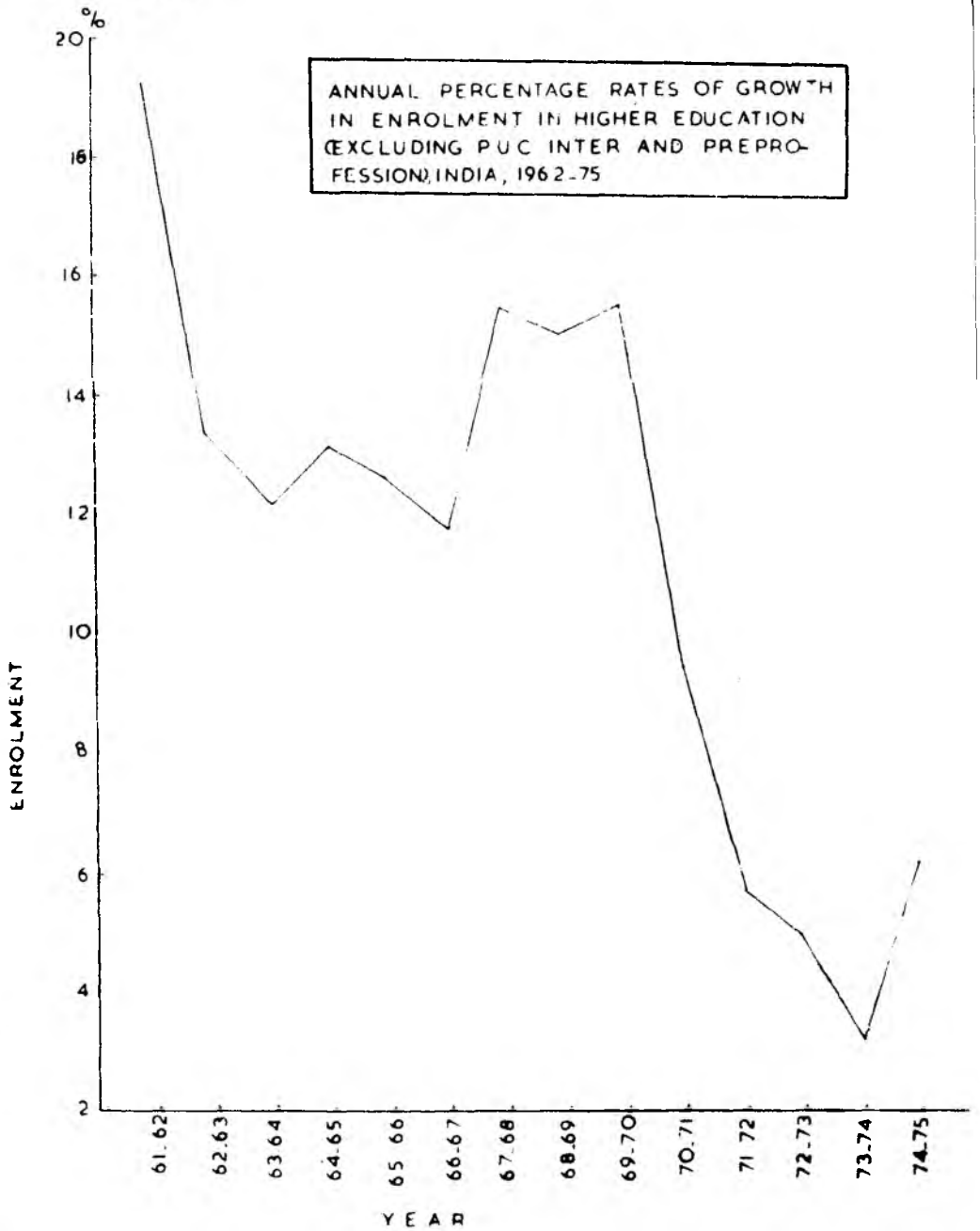
TABLE 3

Enrolment in higher education
(Excluding PUC/Inter/Pre-Professional),
India, 1960-61-75

Year	Total Enrolment	Increase over the previous year	Increase %
1960-61	5, 56, 559	75, 025	...
1961-62	6, 63, 661	1, 07, 102	19. 2
1962-63	7, 52, 095	88, 434	13. 3
1963-64	8, 42, 110	90, 015	12. 0
1964-65	9, 50, 277	1, 08, 167	12. 8
1965-66	10, 66, 884	1, 16, 607	12. 3
1966-67	11, 90, 713	1, 23, 829	11. 6
1967-68	13, 70, 261	1, 79, 548	15. 1
1968-69	15, 66, 103	1, 95, 842	14. 3
1969-70	17, 92, 780	2, 26, 677	14. 5
1970-71	19, 53, 700	1, 60, 920	9. 0
1971-72	20, 65, 041	1, 11, 341	5. 7
1972-73	21, 68, 107	1, 03, 066	5. 0
1973-74	22, 34, 385	66, 278	3. 1
1974-75	23, 66, 541	1, 32, 156	5. 9

SOURCE: University Grants Commission. Annual Report, 1974-75, New Delhi, Author, 1976. p. 93

GRAPH NO-3



till 1971. Annual percentage rate of growth in enrolment for research degrees during 1961-62-66 was 16.1 per cent, whereas in 1965-66-71 it was only 10 per cent. Rates of growth in enrolment during 1970-71-74 as compared to 1961-62-66 and 1965-66-71 were low at all stages. The lowest rate was observed for graduate courses. In this case the rates of growth came down to 4.2 per cent in 1973-74 over 1970-71 from 17.0 per cent during 1965-66-71. Rates of growth in enrolment for postgraduate, research, diploma and PUC was lower by 4.3, 3.7 and 2 per cent respectively over the same period. The details may be seen in Table 4. (Year-wise details are given in Table 5).

TABLE 4

Rates of growth in enrolments, by stages, India, 1961-62-74

Stages/Years	1961-62 to 1965-66	1965-66 to 1970-71	1970-71 to 1973-74
Pre-university	8.7	11.6	9.6
Graduate	16.3	17.0	4.2
Postgraduate	8.9	15.1	11.1
Research	16.1	10.8	7.8
Diploma	4.0	9.5	5.8
Total	12.4	14.7	6.5

SOURCES:

1. University Grants Commission, University development in India: Basic facts and figures 1962-63 to 1971-72, New Delhi, Author.
2. University Grants Commission, Annual Reports, 1960-75, New Delhi, Author.
3. India, Ministry of Education & Social Welfare, Educational statistics at a glance, 1974-75, New Delhi, Author, 1975.

Table 5

Annual percentage rates of growth in enrolment, by stages, India, 1960-61-75

Year	Pre University	Rate of Growth (%)	Inter- mediate	Rate of Growth (%)	Pro- fessional	Rate of Growth (%)	Graduate	Rate of Growth (%)
1960-61	181,631	...	300,793	...	8,335	...	464,848	...
1961-62	250,352	37.83	231,985	-22.88	9,382	12.56	571,485	22.94
1962-63	265,879	6.20	233,881	0.81	20,811	121.81	651,805	14.05
1963-64	295,424	11.11	233,124	-0.33	14,039	-32.55	739,607	13.47
1964-65	320,566	8.51	244,395	4.83	12,989	-7.48	835,804	13.00
1965-66	369,373	15.22	277,285	13.45	15,231	17.26	944,015	12.94
1966-67	430,954	16.67	308,485	11.25	18,860	23.82	1053,750	11.62
1967-68	485,271	12.60	343,807	11.45	19,633	4.09	1211,083	14.93
1968-69	517,021	6.54	375,558	9.23	14,582	-25.73	1388,335	14.63
1969-70	562,947	8.88	423,174	12.67	13,809	-5.31	1603,898	15.52
1970-71	560,809	-0.38	474,869	12.21	11,974	-13.29	1746,090	8.86
1971-72	398,104	-29.12	782,646	64.81	16,523	37.99	1835,077	5.09
1972-73	...	...	...	...	11,645	-29.53	1920,364	4.64
1973-74	357,241	...	980,926	...	11,434	-1.82	1964,432	2.29
1974-75	618,027	...	435,986	...	...	...	1682,470	...

TABLE 5 (Contd.)

Annual percentage rates of growth in enrolment, by stages, India, 1960-61-75

Year	Post Graduate	Rate of Growth (%)	Research	Rate of Growth (%)	Diploma / Certificates	Rate of Growth (%)	Total	Rate of Growth (%)
1960-61	58,908	...	5,165	...	10,704	...	1030,384	...
1961-62	67,610	14.77	5,249	1.62	19,317	80.46	1155,380	12.13
1962-63	71,297	5.45	5,297	0.91	23,696	22.66	1272,666	10.15
1963-64	76,685	7.55	5,895	11.28	19,923	-15.93	1384,697	8.80
1964-65	84,201	9.80	7,104	20.50	23,168	16.28	1528,227	10.36
1965-66	91,830	9.06	8,633	21.52	22,406	-3.29	1728,773	13.12
1966-67	101,798	10.85	9,668	11.98	25,497	13.79	1949,012	12.73
1967-68	117,250	15.17	11,479	18.73	30,449	19.42	2218,972	13.85
1968-69	135,459	15.53	12,145	5.80	30,164	-0.94	2473,264	11.45
1969-70	146,804	8.37	12,474	2.70	29,524	-2.13	2792,630	12.91
1970-71	161,182	9.79	13,311	6.70	33,057	11.96	3001,292	7.47
1971-72	180,343	11.88	14,995	12.65	34,626	4.74	3262,314	8.69
1972-73	195,307	8.29	15,629	4.22	36,807	6.29	3456,096	5.94
1973-74	214,691	9.92	16,417	5.04	38,845	5.53	3583,986	3.70
1974-75	186,354	...	13,825	...	...	...	3284,238	...

- SOURCES: 1. University Grants Commission, University development in India; Basic facts and figures, 1962-63 to 1971-72, New Delhi, Author.
 2. University Grants Commission, Annual Reports, 1960-75, New Delhi, Author.
 3. India, Ministry of Education & Social Welfare, Educational statistics at a glance, 1974-75, New Delhi, Author, 1975.

By States

Table No. 6 and Graph No. 4 depicts the picture of rates of growth in enrolment by states.

Andhra Pradesh

It may be seen from the Table No. 6 and Graph No. 4 that in Andhra Pradesh the rates of growth in enrolment slightly declined during 1961-62 to 1964-65 from around 13 to 8 per cent and then started picking up. The peak in the rate of growth in enrolment in this state was reached in the year 1969-70 when it registered 25 per cent rate of growth. In subsequent years it declined and dropped to the lowest ebb in 1972. After this year it started picking up again. This trend of growth in enrolment may be due to the fact that in Andhra Pradesh industrialization took place during the period, 1961-70. After 1970-71 in this state a saturation point appears to have been reached.

Assam

In Assam the rate of growth in enrolment in higher education reached its peak in the year 1963-64. In 1964-65 it declined sharply. In subsequent years the rate of growth slightly increased and moved between 5 to 10 per cent. The lower rate of growth in enrolment in Assam as compared to other states may be explained in terms of slow rate of growth in the economy as well as little industrialization in the state.

Bihar

In Bihar the rate of growth in enrolment fluctuated considerably. However, during 1961-62—68 it increased except in the years 1964-65 and 1966-67 when it declined. It reached its peak in the year 1967-68, with around 21 per cent. In 1968-69 it declined to the level of 1964-65. It picked up again and reached its second peak in the year 1971-72. Again the rate of growth was around 20 per cent. However, in subsequent years it again registered

such a sharp decline that the rate of growth was minus 4 per cent. The fluctuation in rate of growth in enrolment in Bihar may be explained in terms of famine and floods and some political upheavals in the state during these years.

Gujarat

In this state the rate of growth in enrolment fluctuated over the period under study. In early sixties it declined slightly, in mid and late sixties it fluctuated around 7 to 17 per cent. But in the seventies it again picked up. Barring exceptions the rate of growth in this state was fairly high and steady. This may be explained in terms of the steady economic growth and industrialization in this state. The fluctuations may be because of drought and lean economic years which this state experienced during 1961-74.

Jammu & Kashmir

The rate of growth in this state reached its peak in the year 1962-63 when it touched almost 4 per cent. During 1963-67 it fluctuated and stood at below 5 per cent. Barring few years the slow rate of growth in enrolment may be due to slow rate of growth in the economy and little industrialization in this state.

Kerala

In Kerala the rate of growth in enrolment reached its highest peak in the year 1965-66 when it was around 35 per cent. But in 1966-67 it sharply declined and stood at only 6 per cent. In subsequent years barring some fluctuations, it continued to decline and registered around 4 per cent on the negative side during the year 1973-74. In this state education expanded considerably in the fifties and the early sixties. However, the higher education did not pick up faster rate of growth mainly due to the fact that industrialization in this state could not take place even till 1973-74. The decline in the rate of growth may also be due to the migration of a large number of persons with SSLC qualifications from this state to the other states for jobs.

Madhya Pradesh

In this state the rate of growth in enrolment declined from 24 to 1 per cent during 1962-63 to 1967-68 and remained at the same level in 1968-69. During 1969-70 it increased sharply and reached its peak by touching as much as 30 per cent. In the year 1970-71 it again declined sharply and showed a 10 per cent negative rate of growth. In the subsequent years it picked up slightly registering a positive 2 and 1 per cent. It appears that in Madhya Pradesh the rates of growth in enrolment in higher education had reached saturation point even before 1962-63. The fluctuations in the subsequent years may be due to the specific situation in the state of Madhya Pradesh.

Maharashtra

In Maharashtra the rate of growth in enrolment in higher education has been more or less steady. During 1963-64 it slightly declined from 12 to 9 per cent. Then it started increasing and reached its peak in the year 1965-66 by registering about 15 per cent. In subsequent years it moved around 12 to 13 per cent. The rate of growth in enrolment in this state may be due to the fact that industrialization, trade and commerce increased considerably during this period in Maharashtra. Hence the demand for graduates and enrolment have also continuously increased.

Mysore

In this state in the year 1963-64 the rate of growth in enrolment increased to around 20 per cent but in 1964-65 it declined to 5 per cent. During 1965-70 the rate of growth in this state increased, reaching its second peak in the year 1966-67, touching 26 per cent, and then started declining slightly. By 1971-72 it declined to 4 per cent. In subsequent years it again picked up to about 6 per cent. Due to industrialization the rate of growth in enrolment increased in the early sixties. After 1969-70 it seems to have reached a saturation point. Therefore, a comparatively less increase in the rate of growth in enrolment was registered.

Orissa

In Orissa the rate of growth in enrolment reached its peak in the year 1964-65, touching 22 per cent. In subsequent years the rate of growth in this state fluctuated and in 1971-72 it declined to 6 per cent. During 1972-74 it again registered increasing rate. As against Mysore, in this state the rate of growth formed a sort of a convex curve.

Punjab

In Punjab the rate of growth in enrolment in higher education steadily increased after the year 1963-64 and reached its peak in the year 1966-67, touching 26 per cent. Then it started declining. By 1973-74 it registered about 1 per cent rate of growth. This may be due to the fact that during the sixties due to the green revolution, industrialization in state gave rise to considerable hopes and aspirations. Hence the higher enrolment. It seems after 1967-68 a saturation point was reached and hence the rate of growth in enrolment declined.

Rajasthan

In Rajasthan enrolment in higher education steadily grew during the period 1965 to 1968-69 from less than 5% to 16%. After this year it fluctuated and moved around 6 per cent. By this year it seems a saturation point was reached. Hence the slow rate of growth in enrolment during first part of seventies.

Tamil Nadu

The rate of growth in enrolment in this state increased till 1967-68 and then slowly declined in the subsequent years. In 1973-74 it declined to 3 per cent from 18 per cent in 1967-68. The trend behaviour in this state also showed a sort of concave curve. During sixties due to industrialization and economic development in this state the demand for graduates might have increased and hence

the higher rate of growth in enrolment. By late sixties and early seventies saturation point also seems to have reached in this state.

Uttar Pradesh

In this state rate of growth in enrolment declined to 5 per cent in the year 1964-65 from 15 per cent in 1962-63. Then it increased to about 13 per cent in 1965-66. In the subsequent years it moved between 8 to 14 per cent. The rate of growth in enrolment in this state was fairly high during the period of this study.

West Bengal

The rate of growth in enrolment in West Bengal fluctuated till 1964-65 between 5 to 13 per cent. After this year it moved around 9 per cent till 1969-70. In 1970-71 it increased to around 13 per cent. In the subsequent years it declined. By 1973-74 it registered a negative rate of growth by 4 percent. Decling rate of growth during 1971-74 may be due to some political disturbances in the state as well as growing unemployment among the graduates. In fact as compared to the early sixties rate of growth in enrolment in this state gives a very gloomy picture. This may be partly due to the fact that after sixties many industries and business offices due to political disturbances moved out of West Bengal to some other states. This in turn might have affected employment of graduates. Hence the decrease in rate of growth in enrolment.

Delhi

In Delhi enrolment in higher education increased from less than 5 per cent in 1963-64 to 13 per cent in 1965-66. During subsequent two years it declined to 9 per cent. It again registered a sharp increase to 21 per cent in 1968-69. After this year the rate of growth in enrolment continuously declined till 1972-73. But in 1973-74 rate of growth again picket up to 9 per cent in this territory.

TABLE 6

Enrolment in higher education, by States, 1961-62-74

Year	Andhra Pradesh		Assam		Bihar		Gujarat	
	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)
1961-62	59,986	...	32,157	...	103,976	...	54,159	...
1962-63	67,564	12.63	34,976	8.76	106,496	2.42	63,498	17.24
1963-64	73,072	8.15	46,239	32.20	113,951	7.00	73,316	15.46
1964-65	78,691	7.68	48,197	4.23	113,903	-0.05	83,787	14.28
1965-66	84,927	7.92	53,340	10.67	124,987	9.73	92,560	10.47
1966-67	97,866	15.23	58,113	8.94	133,051	6.45	108,980	17.73
1967-68	113,389	15.86	65,666	12.99	160,800	20.85	117,442	7.76
1968-69	134,786	18.87	71,055	8.20	161,850	0.65	126,021	7.30
1969-70	167,827	24.51	75,539	6.31	168,924	4.37	141,824	12.53
1970-71	168,023	0.11	81,544	7.94	190,024	12.49	151,512	6.83
1971-72	177,174	5.44	90,408	10.87	230,000	21.03	162,888	7.50
1972-73	Data not available with U. G. C.							
1973-74	213,090	10.13	107,413	9.40	209,551	-4.45	202,425	12.13

Contd.

TABLE 6 (Contd.)

Enrolment in higher education, by States, 1961-62-74

Year	Jammu & Kashmir		Kerala		Madhya Pradesh		Maharashtra		Mysore	
	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)
1961-62	7,962	...	50,544	...	51,294	...	124,456	...	51,715	...
1962-63	10,997	38.11	56,038	10.86	62,860	22.54	139,083	11.75	57,145	10.49
1963-64	11,407	3.72	66,323	18.35	74,824	19.03	151,207	8.71	68,082	19.13
1964-65	12,023	14.16	83,452	25.82	89,264	19.29	161,334	10.00	71,676	5.27
1965-66	13,309	2.19	112,305	34.57	105,104	17.74	190,576	14.57	78,884	10.05
1966-67	15,683	17.83	121,414	8.11	119,530	13.72	214,903	12.76	99,605	26.26
1967-68	17,657	12.58	138,695	14.23	121,720	1.83	240,694	12.00	118,100	18.56
1968-69	20,039	13.49	150,722	8.67	123,232	1.24	268,593	11.59	137,857	16.72
1969-70	22,972	14.63	166,584	10.52	159,888	29.74	299,698	11.58	163,753	18.78
1970-71	24,975	8.71	172,519	3.56	142,403	-10.94	339,601	13.31	183,050	11.78
1971-72	26,745	7.08	181,016	4.92	146,284	2.72	382,444	12.61	190,372	4.00
1972-73			Data not available with U. G. C.							
1973-74	31,081	8.10	166,643	-3.97	147,239	0.32	453,774	9.32	213,672	6.11

Contd.....

TABLE 6 (Contd.)

Enrolment in higher education, by States, 1961-62-74

Year	Orissa		Punjab		Rajasthan		Tamil Nadu	
	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)
1961-62	16,442	...	61,940	...	33,587	...	63,511	...
1962-63	18,628	13.29	68,956	11.32	36,547	8.81	67,273	5.92
1963-64	22,379	20.13	68,358	- .87	37,809	3.45	74,193	10.28
1964-65	27,202	21.55	79,830	16.78	40,591	7.35	88,278	18.98
1965-66	29,234	7.47	93,206	16.75	45,128	11.17	101,446	14.91
1966-67	34,286	17.28	113,062	21.30	49,506	9.70	118,204	16.51
1967-68	38,794	13.14	141,737	25.36	57,201	15.54	140,429	18.80
1968-69	42,488	9.52	167,896	18.45	66,388	16.06	162,330	15.59
1969-70	46,672	9.84	196,757	17.18	70,872	6.75	185,266	14.12
1970-71	52,207	11.85	203,046	3.19	80,736	13.91	201,070	8.53
1971-72	55,590	6.47	207,706	2.29	85,311	5.66	217,270	8.65
1972-73	Data not available with U. G. C.							
1973-74	71,574	14.37	212,012	1.03	99,516	8.32	231,995	3.38

Contd.

TABLE 6 (Contd.)

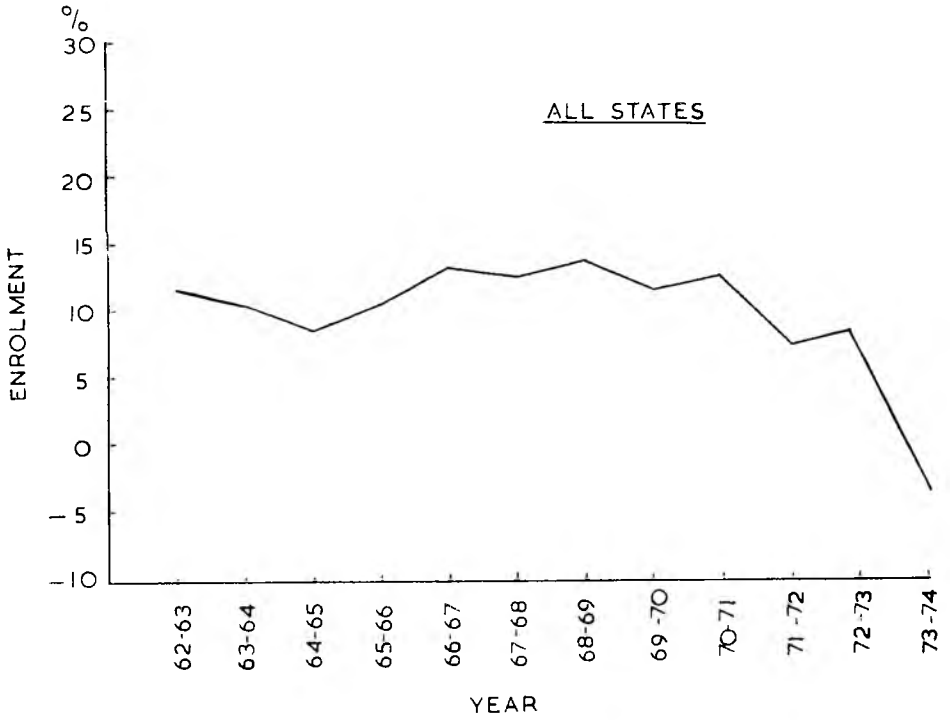
Enrolment in higher education, by States, India, 1961-62-74

Year	Uttar Pradesh	West Bengal		Delhi		Total		
	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)	No. of students	Rate of Growth (%)
1961-62	...	...	136,275	...	24,181	...	1,151,036	11.70
1962-63	277,343	...	150,472	10.41	25,149	4.00	1,272,666	10.56
1963-64	318,165	14.71	158,440	5.29	26,932	7.08	1,384,697	8.80
1964-65	334,122	5.01	179,446	13.25	30,431	12.99	1,528,227	10.36
1965-66	374,447	12.06	195,470	8.92	33,850	11.23	1,728,773	13.12
1966-67	414,902	10.80	212,817	8.87	37,090	9.57	1,949,012	12.73
1967-68	467,137	12.58	234,572	10.22	44,939	21.16	2,218,972	13.85
1968-69	532,427	13.97	255,174	8.78	52,406	16.61	2,473,264	11.45
1969-70	588,052	10.44	279,967	9.71	58,035	10.74	2,792,630	12.91
1970-71	632,922	7.63	315,439	12.67	62,221	7.21	3,001,292	7.47
1971-72	691,536	9.26	336,226	6.58	66,624	7.07	3,262,314	8.69
1972-73	...	...	...	...	...	...	3,583,986	6.47
1973-74	...	...	311,359	-3.70	78,361	8.80	3,583,986	-2.27

- SOURCES: 1. University Grants Commission: University development in India, Basic facts and figures, 1962-63 to 1971-72, New Delhi, Author.
2. University Grants Commission: Report, 1973-74, New Delhi, Author, 1974

GRAPH NO. 4

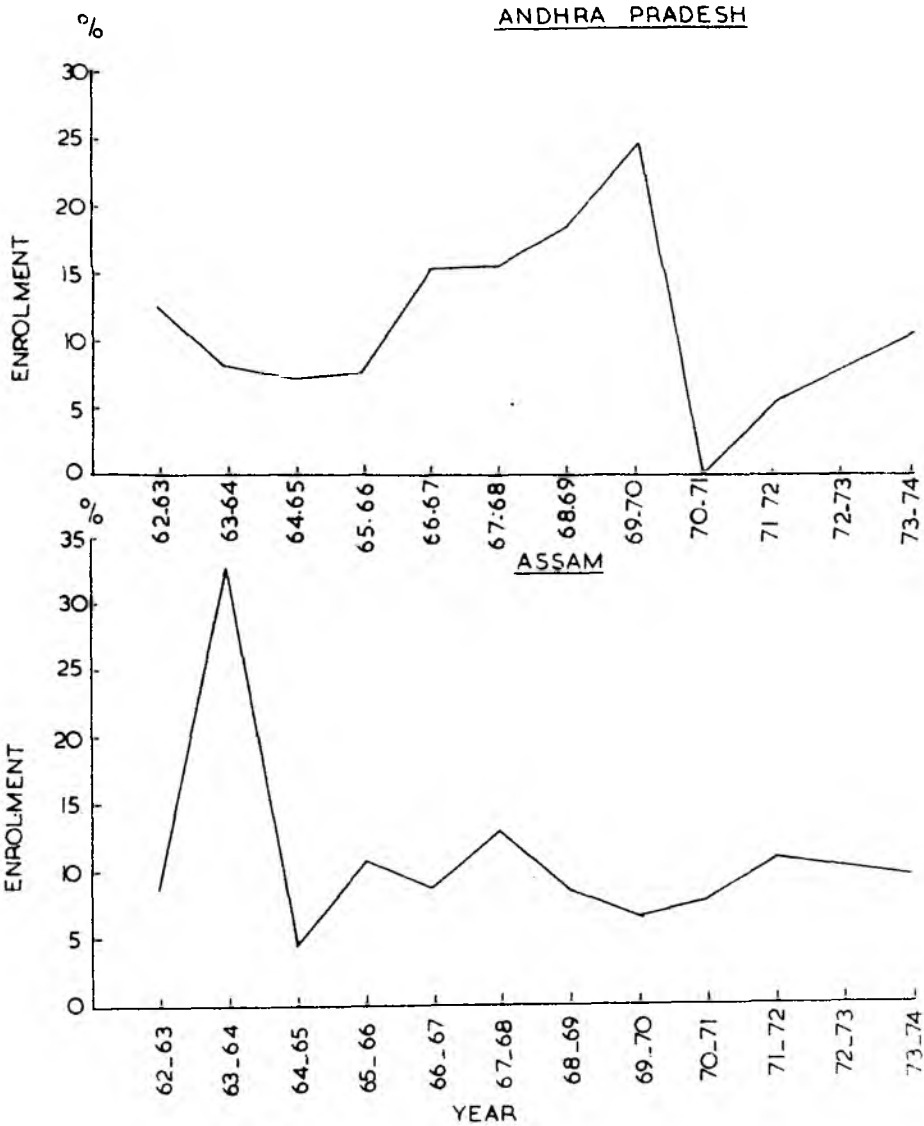
RATES OF GROWTH
IN
ENROLMENT IN HIGHER EDUCATION 1962-74



GRAPH NO: 4

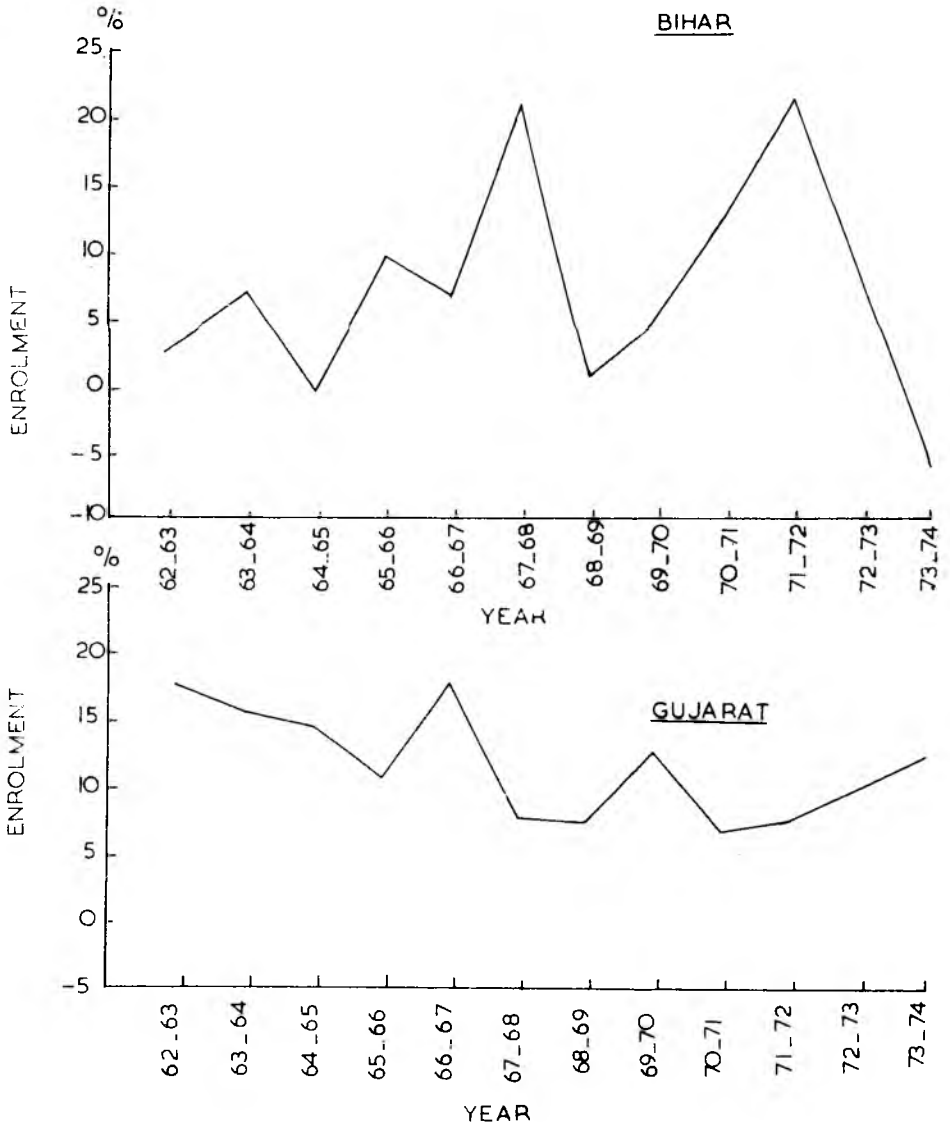
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RATES OF GROWTH IN
ENROLMENT IN HIGHER EDUCATION, BY STATES, 1962-74



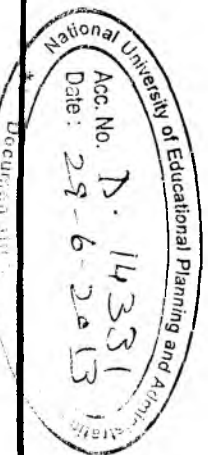
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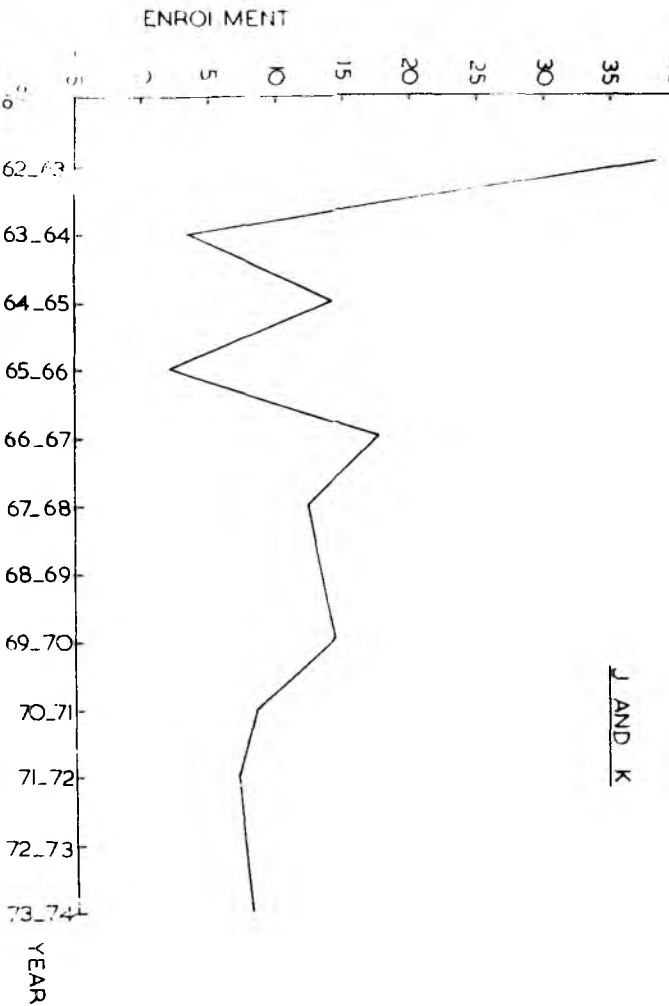


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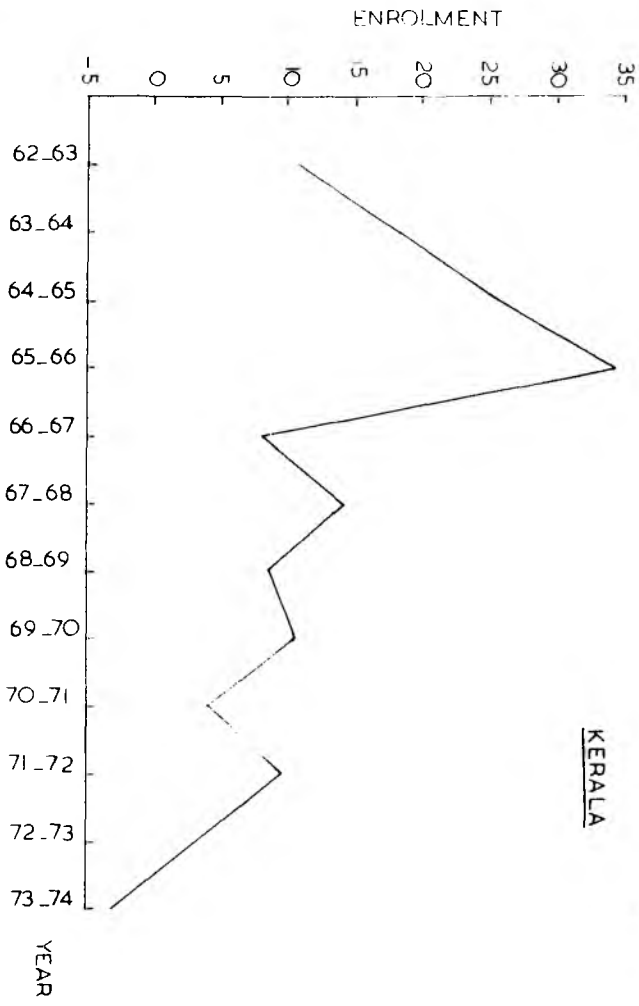
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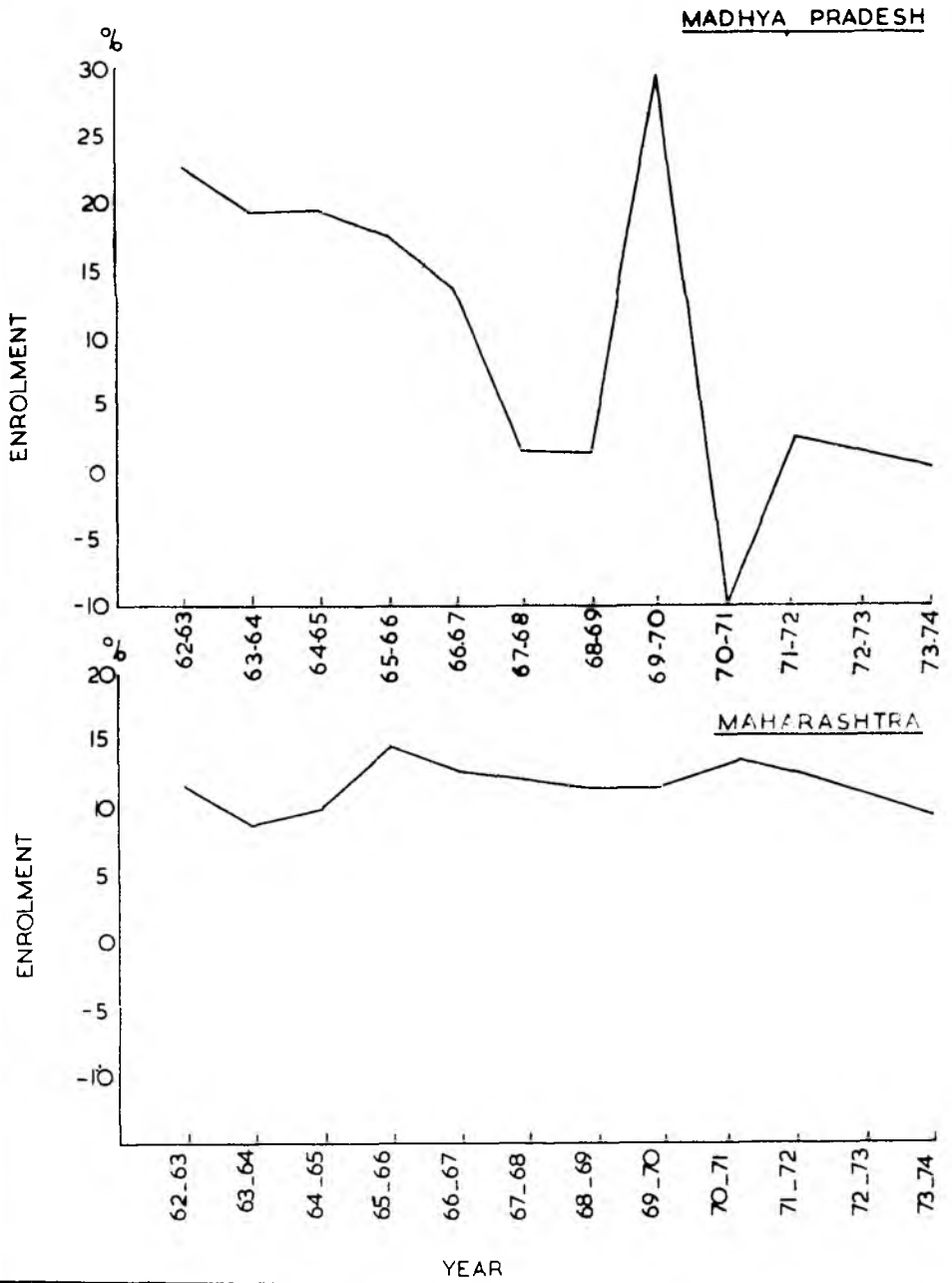


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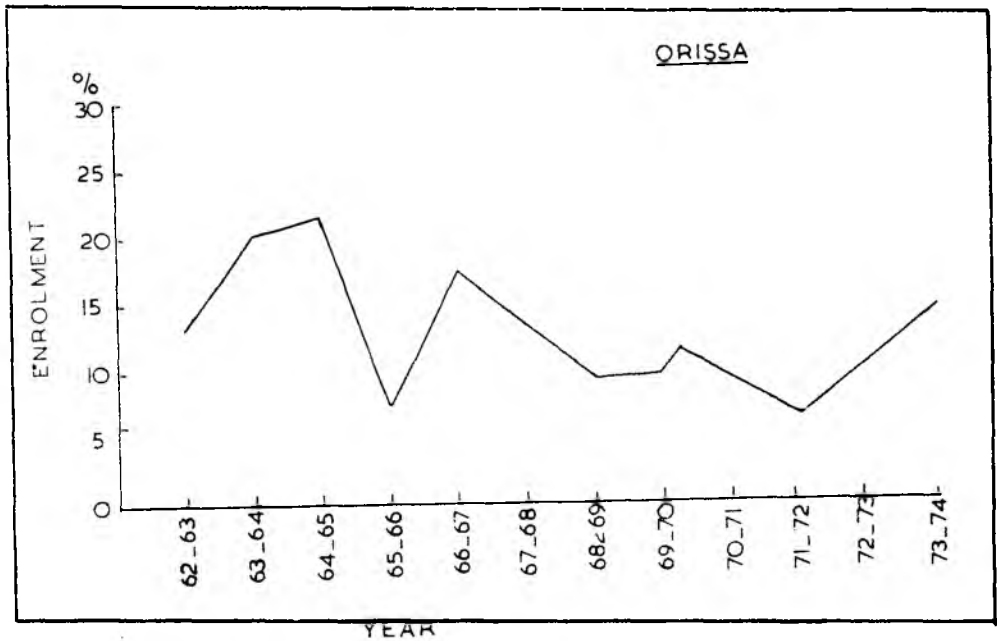
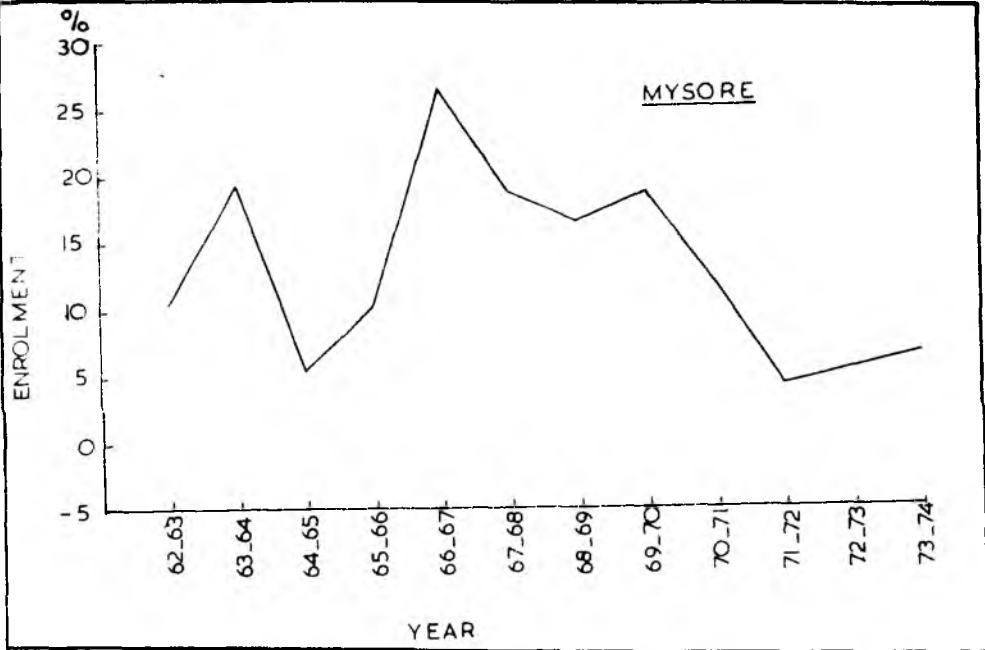


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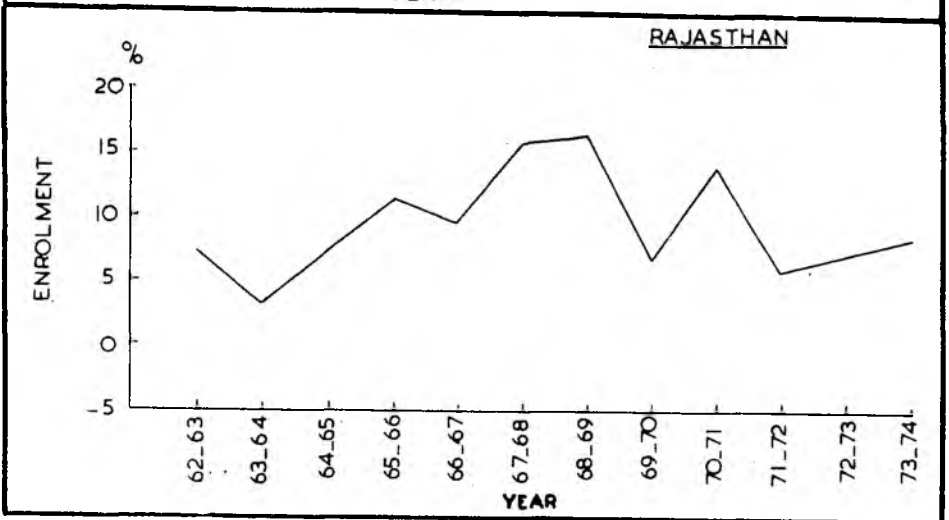
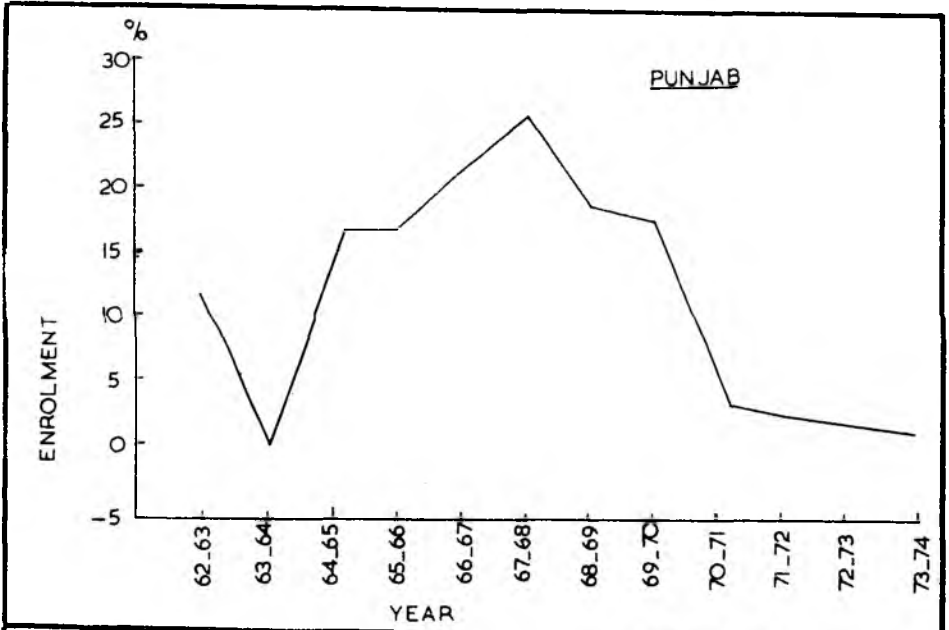


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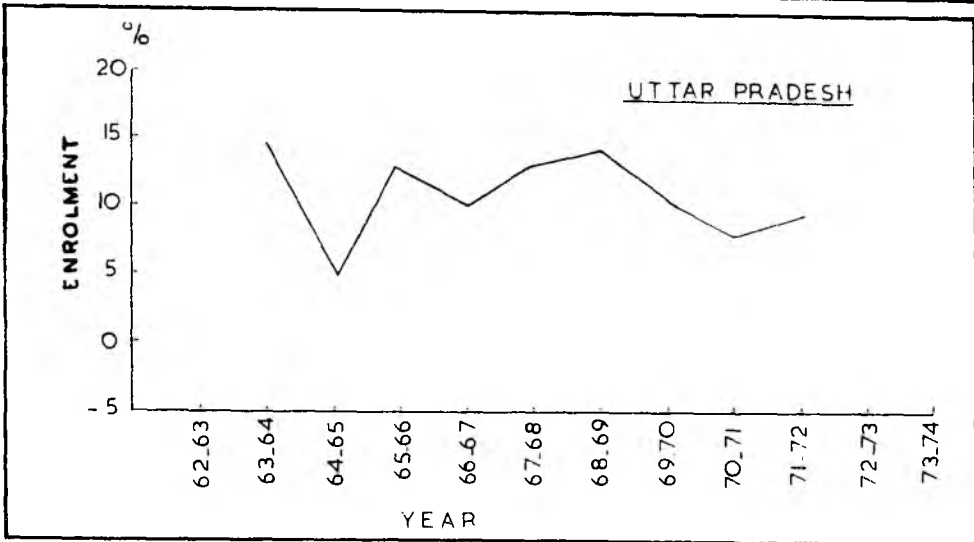
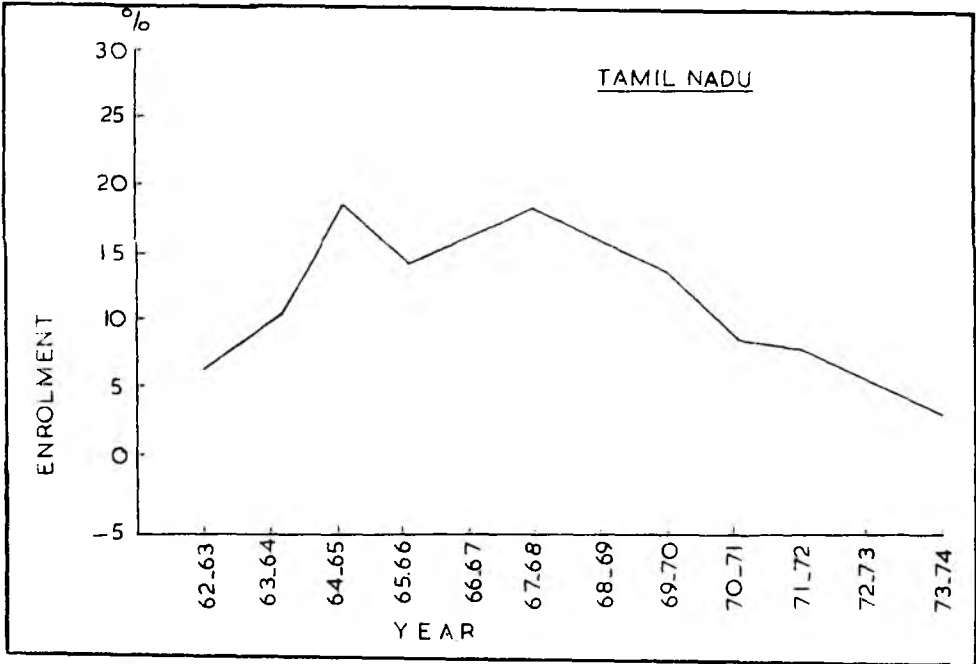


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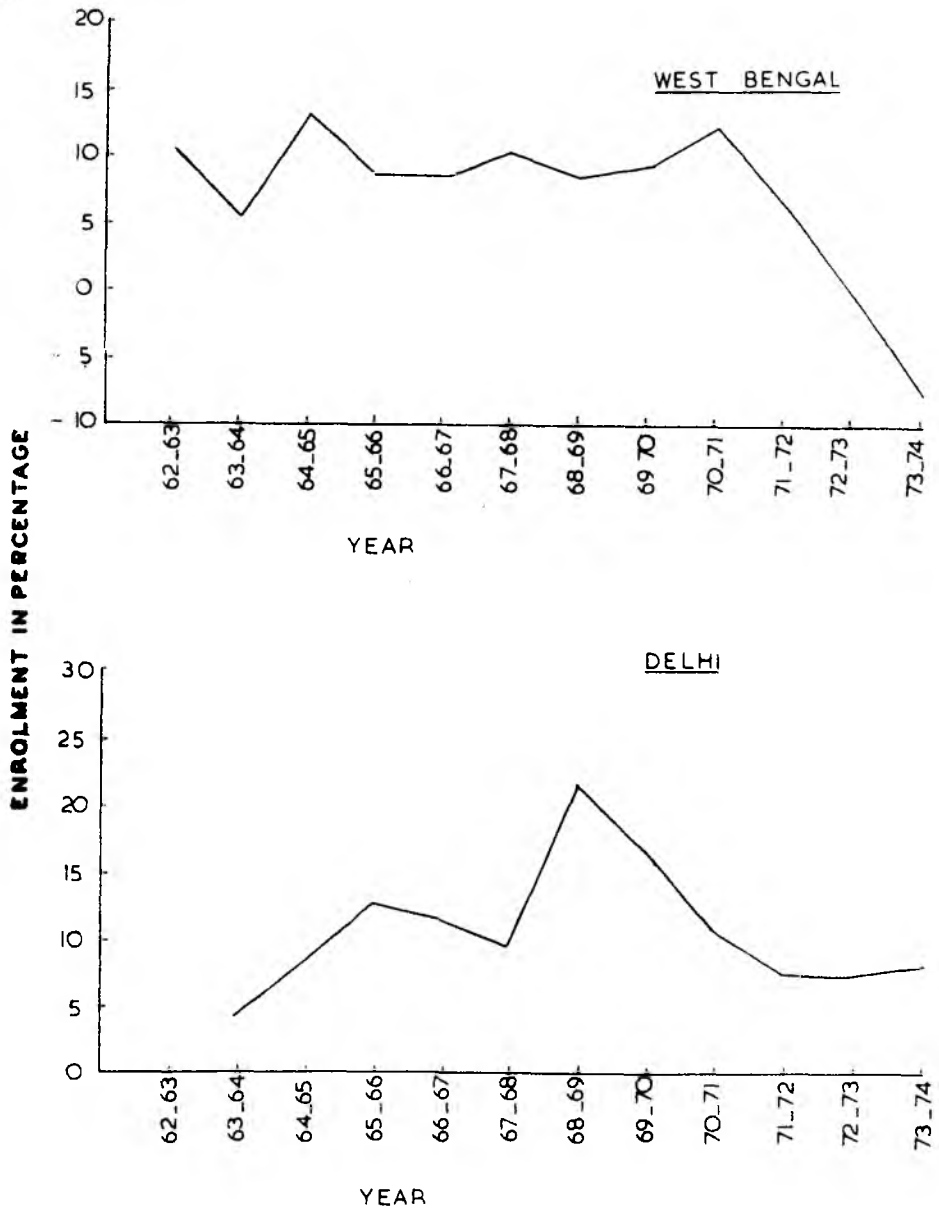
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All States

Aggregate picture of all states shows a slight decline in 1964-65 and then increase till 1970. After this year the rate of growth continuously declined and registered negative rate of growth of 2 per cent. Thus the period of sixties was a period of increasing rates of growth, and the first part of seventies a period of declining rates of growth.

To sum up during the 1960's the enrolment in higher education in almost all the States increased; although rates of growth varied from state to state. But during 1970-71-75 the states of Bihar and Kerala and West-Bengal experienced negative rates of growth and in Madhya Pradesh, Punjab and Tamil Nadu the rate of growth was the least in the year 1973-74 over 1971-72. There was slight decline in the rates in the case of Assam. In Maharashtra rates of growth showed more less a steady trend. But five states viz. Andhra Pradesh, Gujarat, Mysore, Orissa and Rajasthan, picked up the rates of growth during the end of the period under study.

Analysis by Faculty & States

The break-down of the data by faculty and by State is available only upto 1971-72. The following analysis is, therefore, limited upto this year.

1. Barring a few exceptions there was high rate of growth in enrolment for Arts, Science and Commerce in almost all the States. Enrolment in the Arts faculty in the State of Madhya Pradesh declined after 1969. Similarly, enrolment in the Science faculty also declined after 1969 in Andhra Pradesh, Gujarat, Madhya Pradesh and Punjab. But the Commerce faculty has not shown any decline in any of the States in India.
2. In the Engineering Technology faculty only one State namely Maharashtra showed an increasing

trend, while all the other States have shown a decline after 1967-68.

3. The rate of growth in enrolment in Education and Medical faculties showed an increasing trend in most of the States except Orissa, Andhra Pradesh and Jammu & Kashmir. In Orissa the decline was recorded only in the Medical faculty whereas in Andhra Pradesh and Jammu & Kashmir it was seen in both the faculties.
4. The faculties of Agriculture, Veterinary Science, Law etc., showed either a constant rate of growth or an increase of a small rate in all the States. The details may be seen from Appendix 'B' to this study.

The trend analysis may be viewed again in the wake of some new developments in higher education. Some of the universities have started correspondence courses and some have allowed candidates to appear in examinations privately. Also a new pattern of education i. e. 10+2+3 has been introduced in some of the States. Since the data regarding students appearing privately for examinations and the impact of the new system are not available, we are obliged to exclude these developments from a general and detailed analysis.

The data limitations regarding these developments are very serious. Data are, however, available for correspondence courses. Since we are not sure whether these data are included in the general statistics or not we should analyse them separately as well as by combining them with general enrolment data. Table No. 7 gives statistics about the growth in enrolment in correspondence courses for the years 1971-75. It may be seen from the table that in 1972-73

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5. This point is not clear. The Ministry believes that correspondence courses are not included in the general enrolment figures. But the thinking in the U. G. C; is that they must be included since they are part of university education.

over 1971-72 the enrolment declined by 4.82 per cent. In subsequent years it increased by 24.25 and 13.22 per cent over the previous year.

If we look at the rate of growth in enrolment for higher education by combining the enrolment figures for correspondence courses, it may be observed that the rate of growth in enrolment has improved very slightly. But it continues to show a declining trend.

TABLE 7

Enrolment in Correspondence Courses,
India, 1971-76

Year	Enrolment	Rate of Growth (%)	Total Enrolment (Correspondence + General)	Rate of Growth (%)
1971-72	48,333	...	33,10,647	10.30
1972-73	46,008	-4.81	35,02,104	5.78
1973-74	57,166	23.09	36,41,152	3.97
1974-75	...	...	...	...
1975-76	73,477	14.26	...	...

SOURCE:

University Grants Commission, University development in India: Basic facts and figures, 1962-63 to 1971-72, New Delhi, Author.

Pattern Analysis

We have also examined the pattern of enrolment in universities/colleges by faculties for the years 1950-51, 1970-71 and 1973-74. Data regarding pattern analysis are given in

Appendix 'C'. It may be seen from the Appendix that as on 1950-51, the enrolment in the Arts Faculty was the highest. This was followed by Science and Commerce Faculties. These three faculties accounted for 86% of total enrolment in 1950-51, 91.61% in 1970-71 and 92.62% in 1973-74. The table also reveals that during 1971-74 there has been slight change in percentage of enrolment in these three faculties. In 1973-74 percentage enrolment in the Arts and Commerce Faculties increased, but that in the Science Faculty declined slightly. Faculties of Education, Engineering and Technology, Medicine, Agriculture, Veterinary Science, Law and others accounted for less than 5% each in 1950-51, 1970-71 and 1973-74.

The issue before us is to discover the factors responsible for this declining trend. In the following section an attempt will be made to examine the same.

SECTION III

Factors influencing Enrolment

One may conjecture that demand for higher education is influenced by the demand for graduates and that the decline in demand for employment of graduates during recent years may have in turn adversely influenced the enrolment in higher education. But this conjecture is only partially correct.

One reason for the decline in rates of growth in enrolment may be the non-availability of seats for students seeking admission. This non-commensurate increase in the number of seats with the demand for them may be due either to government policy to restrict the growth or to non-availability of funds. It may as well be due to the slackness in the growth of privately supported institutions of higher education.

Decline in rates of growth may also be due to decline in number of students passing higher secondary examinations with the percentage of marks which would normally make them eligible for admission to higher education.

Decline in rates of growth may also be due to deterioration in the economic condition of persons who patronize higher education. Higher education is generally patronized by the middle and upper middle classes. The deterioration in their economic condition is, therefore, likely to adversely influence the demand for higher education.

It is possible that some or all of these conjectures are true. Any judgment based solely on them may not, therefore, be proper. To establish the authenticity of these conjectures, it would be necessary to examine them statistically. In other words, this exercise is meant to find out how far they explain the variation in rates of growth in the enrolment in higher education.

It has to be hoped that there are some data limitations which preclude an exact enquiry. These are:

1. Data about the number of applications filed for admission and the number of applicants given admission are not available. Therefore, the inclusion of this factor is ruled out.
2. Growth in expenditure on constant prices has been taken as a proxy variable for the growth in seats in old as well as new institutions.
3. Government policy, social and political factors and new developments in the education system are not quantifiable therefore, these aspects are excluded from statistical analysis. They will be discussed separately, where evidence for them is available.
4. Per capita net national product, is taken as representative of the economic condition of the people, although this is admittedly a crude method. This variable has been taken as a proxy variable for the deterioration and improvement of the economic condition of persons belonging to the middle and upper middle classes which generally patronize higher education.⁶

Study of Quantifiable Factors — Statement of Hypotheses

1. The increase in employment of degree holders is likely to influence the demand for higher education positively. This is because most students seek higher education mainly with the object of securing better jobs. If the employment among graduate degree holders increases, enrolment is also likely to increase and vice-a-versa. We, therefore, formulate a hypothesis that there is positive
-
6. Data regarding income-wise distribution of population and the change in them would have been more appropriate. Since data about this aspect are not available we have to resort to this crude variable.

association between employment among degree holders and the enrolment in higher education.

2. As the expenditure (in real terms) on education increases in -take capacity of institutions also increase. This association is however, qualified by an assumption that there is no major change in the wage bill of the staff engaged in higher education. We, therefore, formulate that there is a positive association between the expenditure on higher education and the enrolment.
3. As the economic conditions of the citizens improve, they are able to send their children for higher education. This is more true of persons who are on the margin. If the net per capita product declines, it might affect the enrolment adversely. This is because in poor economic conditions parents prefer to find immediately gainful employment for their children. We may, therefore, state that there is a positive association between per capita net national product and the enrolment.
4. It is likely that due to increase in fees many parents may not be able to afford to give higher education to their children. We, therefore, formulate a hypothesis that there is negative relationship between per-student fee and the enrolment.

Statistical Model

With a view to testing these hypotheses we use a multi-variate regression model. The form of equation used is given below:

$$Y = (a + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_nx_n) u_i$$

The independent and dependent variables considered by us may be given as below:

Independent Variables

- x_1 = Expenditure on higher education (1961 prices)
 x_2 = Student's fees (1961 prices)
 x_3 = Per capita net national product (1961 prices)
 x_4 = Employment among degree holders

Dependent Variable

Y = Enrolment in higher education

The period of the study is 1961-74.

Correlation Matrix

The correlation matrix is given in table 8. It may be seen from the table that there is correlation among the variables considered.⁷

Table No. 9 given below reveals that our four variables model explains 99 percent of variation in enrolment. In other words variation in enrolment over time may be attributed to the variation in these factors.

Test of Hypotheses

There is a high positive relationship between expenditure on higher education and the enrolment. This indicates that

7 There is a correlation among the independent variables. The results of the study should therefore be taken with caution. It may, however, be mentioned that this relationship appears to be mainly due to the nature of data. On this aspect Christ says that the covariance in independent variables may not pose a problem if the behaviour of independent variables is likely to be the same in future - Christ Econometric Models & Methods. Willey Eastern, New Delhi, 1967. p. 387.

as the expenditure on education increases the number of seats for higher education also increase. This in turn helps in the increase in the enrolment. Our hypothesis that there is a positive association between expenditure on higher education and enrolment is statistically supported at 0.05 level of significance.

TABLE 8

Correlation Matrix of Independent Variables

Variables	Expenditure on higher education	Student's Fees	Per capita net national product	Employment
1. Expenditure on higher education		0.969	0.829	0.978
2. Students' fees			0.765	0.954
3. Per capita net national product				0.849
4. Employment				

Our hypothesis that there is a negative relationship between students' fees and enrolment is supported by statistical evidence. The regression co-efficient in this case is significant at 0.05 level. This suggests that private cost of education plays a significant role in influencing enrolment in higher education.

The per capita net national product was not found statistically significant in influencing the variation on the enrolment in this case.

TABLE 9

Regression, Coefficients, Standard Errors, T values,
 R^2 and F value of 4 variables on enrolment, India, 1961-75. (Constant prices)

Variable		Regression coefficient	Standard Errors	Value of t	Partial R
Expenditure	x_1	112.56800	26.33990	4.27369°	.669900
Student's fee	x_2	-11077.60000	2333.05000	-4.74811°	.714689
Per capita net national product	x_3	3712.75000	2204.24000	1.68436	.239677
Employment	x_4	2.48794	2.40504	1.03447	.106267
Constant = 1177980		$R^2 = 0.995,992$	F = 559.189		

° Denotes significance at the 0.05 level.

It may be seen from the table that employment and enrolment are correlated. But the association is very poor. However, from the positive sign it may be inferred that this variable possibly influences the variation in enrolment. As the coefficient is not statistically significant nothing can be said very confidently about their relationship.

We have also tried a variable, like results of secondary and higher secondary examinations, which is the catchment area for higher education. Since no association between enrolment and higher secondary passes was found, we dropped this variable from this study.

With a view to finding out the relationship between the rates of growth in enrolment and the rates of growth in independent variables, we have used a double log regression equation of the following form:⁸

$$\text{Log } Y \doteq f (\text{Log } x_0 + B_1 x_1, B_2 x_2 \dots, B_n x_n) \text{ ul}$$

The correlation matrix and regression equations are given in Table Nos. 10 and 11. In this case we have used the one

TABLE 10

Correlation Matrix for four variables

	x_1	x_2	x_3	x_4
Expenditure on higher education	x_1	0.951	0.801	0.943
Student's fee	x_2		0.724	0.961
Per capita income	x_3			0.620
Employment (with one year lag)	x_4			

8 In the course of discussion this alternative method was suggested by Dr. Balvir Singh. I wish to thank him for the same

TABLE 11

Regression Coefficients, Standard Errors, T values,
 R^2 and F value of 4 variables on enrolment India, 1961-75

Variable		Regression Coefficients	Standard Error	T Value	Partial R^2
Expenditure on Higher Education	x_1	1.0545	0.2200	4.7920	0.7416°
Student fee	x_2	-0.07230	0.2182	-3.3132	0.5784°
Per capita income	x_3	-0.4926	0.6509	-0.7567	0.0668
Employment	x_4	-0.3760	0.2149	-1.7494	0.2767
Constant		6.6354	2.2004	3.0155	
$R^2 = 0.9908$		$R^{-2} = 0.9862$		$R = 0.9954$	$F = 216.10^\circ$

° Significant 0.05% level

year lag employment variable with a view to seeing the effect of last year's rates of growth in the employment of graduates on enrolment in higher education.

The table reveals that the expenditure variable emerges very clearly as an important explanatory variable followed by tuition fee i. e. a part of private cost of education. No relationship with per capita net national product, was, however, clearly revealed. But employment variable improved its explanatory power. In this case this variable had a negative sign. This goes against our earlier finding. However, it was not significant O. 05 level. Hence it can not be relied upon. It may be stated that the negative sign of this variable partly explains that even when employment opportunities among graduates slacken, enrolment continues to increase. This may be due to the fact that in India people enrol for higher education with a view to standing first in the queue for jobs as well as for utilizing the waiting time for a job. This explanation should be taken with care because in the long run employment is likely to influence the enrolment in higher education. The effect of increase in the unemployment among graduate has started showing up adversely on the rates of growth in enrolment in the recent years.

Study of Non-Quantifiable Factors

Though factors such as Government policy, change in the pattern of education and other developments might have also influenced the rates of growth in enrolment, we could not consider them in our quantitative analysis mainly due to non-availability of such data/information over time. We may, however, discuss briefly their influence on rates of growth in enrolment.

Regarding enrolment for the engineering degree courses, the growth in enrolment has been affected due to the restrictive policy of the government. This policy had its source in planning for manpower. Because of over-estimation of the need of engineers the capacity to produce engineers was expanded.⁹ Later on, since there was a great incidence

9 IAMR Report, 1963 B, Pt. II, New Delhi, Author, p. 30.

of unemployment among engineering degree holders, it was decided that the growth of engineering institutions should be restricted and the intake of engineering graduates reduced. The IAMR report stated that "The demand and supply position has taken a new turn and the position now warrants some change in order to reduce the large supply of engineering graduates. We are now confronted with the problem of their likely unemployment. In order to avoid this unhappy situation in the near future, it is imperative at this juncture that intake capacity at the degree level should be checked".¹⁰

This type of warning was very necessary, although it went against the policy of growth in enrolment. In the absence of this change the market forces would have operated though late against such growth.

The declining trend in enrolment for engineering courses, therefore, should not cause any worry. It only calls for a policy to make alternative use of the resources and manpower released. However, in spite of IAMR suggestions the intake capacity continued to be more than originally planned. The same can be seen from the table given below:

TABLE 12

Original admission targets and actual intake, India, 1963-64-66

Year	Original targets	Actual intake
1963-64	16,800	20,744
1964-65	17,900	22,214
1965-66	19,000	23,315

SOURCE: IAMR, Report, 1968, New Delhi, Author - p. 24-34

10 IAMR, Report, 1963, New Delhi, Author

This would suggest that external pressures also work in making admissions to courses. The pressures, however, must have declined later due to market forces of demand and supply. The prospect of employment among engineering graduates must have affected the aspirants, hence the decline in enrolment? It may be further mentioned that in the case of such specific manpower needs the output should always be regulated on a realistic basis. The demand should be worked out in detail and the intake should be adjusted accordingly.

Regarding the enrolment in other faculties, it is feared that the new pattern of education i. e. 10+2+3 would affect the growth in enrolment for higher education.¹¹ So far, however, its full impact is not known since very few states have introduced the new system. Even after its introduction the effect of this policy on enrolment in future will depend upon what number of students get jobs immediately after completion of the two years course.¹² Looking to the present and likely economic growth and the rate of unemployment among vocational diploma and degree holders, the possibility of a greater number of jobs being available to this level of training seems very remote. The regular flow system is likely to resume again after a couple of years.

Besides it may be observed from Table No:4 that the decline in rates of growth in enrolment is higher at the graduate and postgraduate stages than at the pre-university and Intermediate stages. The impact of the 10+2+3 system of education is likely to be on the PUC/Inter classes. Hence the full effect of this policy will be evident only after 2-3 years. The problem would remain more or less the same even after giving due recognition to this factor.

It is also conjectured that the new development in university education of allowing candidates to appear privately might also affect the rates of growth in enrolment in higher

11 Shukla P. D. Towards the New Pattern of Education in India, New Delhi, 1976.

12 Once the figures are adjusted for this change one would get the same picture.

education. With a view to discovering the impact of this development on the enrolment we looked into the regulations regarding the types of candidates who are allowed to appear privately by the universities in India. We found that as on 1975 only 75 of the total 96 universities allowed private candidates. But most of them allow only women candidates, teachers, staff employed in the education department in their respective jurisdiction and members of the Defence Services. Thus only persons in jobs or women candidates got this facility. The effect of this development on the rates of growth in the enrolment of day scholars can be considered very marginal.

The conclusion would, therefore, be that the influence of non-quantifiable factors on enrolment was inconsiderable.

Future trend

It is hard to predict about the future trend of rate of growth in enrolment because a change in economic or educational structure might falsify any prediction. But by looking into the past rate of growth in the enrolment and assuming that no structural change takes place, it may be safely guessed that the future rate of growth will be around 5 to 6 per cent per annum. We have estimated the future enrolment in higher education for the year 1961 to 2000 A.D. These estimates are done through linear form and quadratic form. In the linear form the rate of growth progress on the basis of past linear trend, whereas in quadratic form the fluctuations in the past rates of growth are also taken care of. The projected figures for enrolment through these forms are presented in Table No 13. The estimate through quadratic form, however, appears to be reasonable. According to this estimate by 1985-86 about 80 lakhs students (including PUC Inter and Pre-professional) would enrol for higher education. By 2000 A.D. the figures of enrolment in higher education would be around one crore fifty lakh students. The rate of growth during these years works out again to 7 to 4 per cent per annum. Figures of enrolment of students (excluding PUC, Inter and Pre-professional) for these years work out to 47.50 lakh and 84.39 lakh. The rate of growth for these figures works out to 7 to 4 per cent per annum.

Table No. 13
Projected Enrolment in Higher Education, India, 1960-61—2000 AD

Year	Linear Function				Quadratic Equation			
	Enrolment including PUC, Inter, Pre-profes-sional	Rate of growth (%)	Enrolment excluding PUC, Inter, Pre-profes-sional	Rate of growth (%)	Enrolment including PUC, Inter, Pro-profes-sional	Rate of growth (%)	Enrolment excluding PUC, Inter, Pre-profes-sional	Rate of growth (%)
1960-61	824532	34.63	457362	44.27	972064	15.80	520100	25.77
1961-62	1036607	25.72	597687	30.69	1116046	14.82	681469	21.42
1962-63	1248682	20.46	738012	23.48	1271377	13.92	747664	18.40
1963-64	1460747	16.99	878337	19.02	1438057	13.11	868685	16.19
1964-65	1672832	14.52	1018662	15.98	1616085	12.38	994532	14.19
1965-66	1884907	12.68	1158987	13.78	1805462	11.72	1125205	13.14
1966-67	2096982	11.26	1299312	12.11	2006187	11.12	1260704	12.05
1967-68	2309057	10.12	1439637	10.80	2218261	10.57	1401028	11.12
1968-69	2521132	9.19	1579962	9.75	2441684	10.08	1546179	10.36
1969-70	2733207	8.42	1720287	8.89	2676456	9.62	1696156	9.70
1970-71	2945282	7.76	1860612	8.16	2922576	9.20	1850959	9.13
1971-72	3157357	7.20	2000937	7.55	3180045	8.81	2010588	8.63
1972-73	3369432	6.72	2141262	7.02	3448863	8.46	2175042	8.18

Contd.

Table No. 13 (Contd.)
Projected Enrolment in Higher Education, India, 1960-61—2000 AD

	Linear Function				Quadratic Equation			
	Enrolment including PUC, Inter, Pre-professional	Rate of growth (%)	Enrolment excluding PUC, Inter, Pre-professional	Rate of growth (%)	Enrolment including PUC, Inter, Pro-professional	Rate of growth (%)	Enrolment excluding PUC, Inter, Pre-professional	Rate of growth (%)
1986-87	6338482	3.47	4105812	3.54	8403923	5.37	4984137	4.89
1987-88	6550557	3.35	4246137	3.42	8842972	5.23	5220981	4.76
1988-89	6762632	3.24	4386462	3.31	9293368	5.10	5462652	4.63
1989-90	6974707	3.14	4526787	3.20	9755114	4.97	5709148	4.52
1990-91	7186782	3.04	4667112	3.10	10228208	4.85	5960470	4.41
1991-92	7398857	2.95	4807437	3.01	10712651	4.74	6216619	4.30
1992-93	7610932	2.87	4947762	2.92	11208443	4.60	6477593	3.20
1993-94	7823007	2.79	5088087	2.84	11715583	4.53	6743393	4.11
1994-95	8035082	2.71	5228412	2.76	12234072	4.43	7014020	4.02
1995-96	8247157	2.64	5368737	2.69	12763910	4.33	7289472	3.93
1996-97	8459232	2.58	5509062	2.62	13305096	4.24	7569750	3.85
1997-98	8671307	2.51	5649387	2.55	13857631	4.16	7854855	3.77
1998-99	8883382	2.45	5789712	2.49	14421515	4.07	8144785	3.70
1999-2000	9095457	2.39	5930037	2.43	14996747	3.99	8439541	3.62

Table No. 13 (Contd.)
Projected Enrolment in Higher Education, India, 1960-61—2000 AD

Year	Linear Function				Quadratic Equation			
	Enrolment including PUC, Inter, Pre-professional	Rate of growth (%)	Enrolment excluding PUC, Inter, Pre-professional	Rate of growth (%)	Enrolment including PUC, Inter, Pro-professional	Rate of growth (%)	Enrolment excluding PUC, Inter, Pre-professional	Rate of growth (%)
1973-74	3581507	6.30	2281587	6.56	3729029	8.13	2344323	7.79
1974-75	3793582	5.93	2421912	6.15	4020544	7.82	2518430	7.43
1975-76	4005657	5.59	2562237	5.80	4323408	7.54	2697362	7.11
1976-77	4217732	5.30	2702562	5.48	4637620	7.27	2881121	6.82
1977-78	4429807	5.03	2842887	5.20	4963182	7.02	3069706	
1978-79	4641882	4.79	2983212	4.94	5300092	6.79	3263116	6.30
1979-80	4853957	4.57	3123537	4.71	5648350	6.57	3461353	6.08
1980-81	5066032	4.37	3263862	4.50	6007957	6.37	3664416	5.87
1981-82	5278107	4.19	3404187	4.30	6378913	6.18	3872304	5.68
1982-83	5490182	4.02	3544512	4.13	6761218	6.00	4085019	5.50
1983-84	5702257	3.87	3684837	3.96	7154871	5.83	4302559	5.33
1984-85	5914332	3.72	3825162	3.81	7559873	5.66	4524926	5.17
1985-86	6126407	3.69	3965487	3.67	7976224	5.51	4752118	5.02

Contd.

SECTION IV

Implications of the Declining Trend

The analysis revealed that during 1970-75 the rates of growth in enrolment in higher education have declined as compared to the rates of growth during 1960-70. Some of the faculties have also registered negative rates of growth. The declining rates have some implications for the employment, output of graduates as well as the share of this sector in the national economy. We shall, therefore, examine the impact of the declining rates on these aspects.

Employment of Teachers

A high rate of growth in enrolment in higher education implies the higher rate of growth in the employment of teachers in the colleges and universities. The opposite is true for low rates of growth. This statement is subject to the qualification that the student - teacher ratio is always kept within a certain fixed range. The data regarding employment of teachers during 1966-71 and 1971-75 are given in Table No. 14.

It will be seen from the table that rates of growth in employment of teachers in the colleges and the universities came down from 10.44 per cent annually during 1965-71 to 5.41 per cent annually during 1972-75. Thus the immediate impact of this declining rate of growth in enrolment has been on the employment of teachers.

Output of Graduates

The declining rates of growth in enrolment are likely to influence the output of graduates. The Table No. 15 reveals that during 1961-70 the rate of growth in the output of graduates was about 22 per cent per annum. In 1970-71-73 it came down to 7.25 per cent. In the Indian economy where supply of graduates is much higher than the economy can absorb, the declining rates of growth in enrolment and output may be considered a happy sign.

TABLE 14

Growth in Employment of Teachers, Higher Education,
India, 1965-66-75

Year	No. of Teachers	Rate of Growth (%)	Rate of Growth in 1965-71 and 1971-75 (%)
1965-66	84,676		
1966-67	93,251	10.12	
1967-68	1,02,454	9.86	
1968-69	1,10,943	8.28	10.44
1969-70	1,19,052	7.30	
1970-71	1,28,876	8.25	
1971-72	1,39,204	8.01	
1972-73	1,45,524	4.54	
1973-74	1,56,562	7.58	5.41
1974-75	1,61,782	3.33	

SOURCE:

UGC, Annual Reports, 1965-75, UGC, New Delhi, 1965-75.

TABLE 15

Output of Graduates, India, 1960-61-73

Year	Output of Graduates in number	Annual rate of growth (%)	Average rate of growth 1961-65 1965-70 & 1970-73 (%)	Average rate of growth between 1961-70 & 1970-73 (%)
1960-61	93,249	...		
1961-62	1,04,244	12.79		
1962-63	1,09,982	5.50		
1963-64	1,33,064	20.99		
1964-65	1,50,882	13.39	12.36	
1965-66	1,54,295	2.26		
1966-67	1,86,731	21.02		
1967-68	2,31,027	23.72		
1968-69	2,43,169	5.26		
1969-70	2,98,148	22.61	18.65	21.97
1970-71	3,52,754	18.32		
1971-72	...			
1972-73	4,03,819	7.24	7.25	7.25

SOURCE:

- a) India, Ministry of Education and Social Welfare, Education in India, 1961-65, New Delhi, Author.
- b) University Grants Commission, Annual Reports, 1960-61—75, New Delhi, Author.

Economy

Declining rates of growth may also be related to the share this sector has in the total economy. If the past pattern of allocation of resource on various sectors in the economy is considered optimal, the declining trend is likely to upset it. If the investment on higher education is viewed as favourable for income generation and distribution, the present trend is likely to adversely affect it. If the opposite is true then one can be content with the declining trend. The working out of the actual effect on income generation and distribution due to investment on higher education is essential before any definite conclusions can be drawn in regard to this aspect. As there is no such study, published in India to our knowledge we have to content ourselves with this indefinite statement.

SECTION V

Summary, Conclusions and Suggestions

We may now summarise the findings of the study, draw our conclusions and attempt some policy suggestions.

Summary

The study has analysed the enrolment trends in higher education during the period 1961 to 1975.

Broadly speaking the enrolment in higher education aggregately as well as by faculties, during the 1960's grew by 12 % per year. During 1971-75 the rates of growth declined to 5 % per year. Negative rates of growth are also observed in some faculties such as Science, Engineering Technology, Arts, Medicine and Agriculture.

Statewise analysis showed that during the 1960's rates of growth in enrolment in almost all States had increased by 12 %. But during 1971-75 the rates slackened, and in some of the States e.g., Bihar, Kerala and West Bengal, negative rates of growth were observed. Three States namely, Madhya Pradesh, Punjab and Tamil Nadu experienced small increases. In five States, namely, Andhra Pradesh, Gujarat, Mysore, Orissa, Rajasthan the rates of growth picked up during the last year of the period under study. In Maharashtra rates of growth showed comparatively a steady trend.

Factors associated with the rates of growth have also been examined. The quantifiable factors namely, per capita net national product, expenditure on higher education, employment among degree holders and students' fees were regressed on the enrolment data. The four variables model explained the variation in enrolment data. The R^2 was .99 at 05 level of significance. Variables such as expenditure and students' fees were found to be significantly associated.

The expenditure on higher education variables appears to be the important determining factor in the rates of growth in enrolment.

The regression result has to be taken with great caution because the independent variables were found to be correlated. Some of the factors which are non-quantifiable, such as Government policy, new developments in education such as correspondence courses, permitting non-collegiates to appear for degree examinations and the new 10+2+3 system of education have also been discussed where evidence for these factors was available. It is observed that new developments in education have diverted students from regular colleges and have also affected the enrolment to some extent. But their impact is marginal and they do not appear to explain the recent declining trend.

The future trend analysis showed that by 1985-86 about 80 lakhs students (including PUC, Inter and Pre-profession) would be enrolled for higher education. By 2000 AD figures of enrolment would be 1.50 crores. The figures of enrolment (excluding PUC, Inter and Pre-profession) for these years work out to 47.50 lakhs and 84.39 lakhs:

The declining rates of growth in enrolment in higher education had some impact on the rates of growth in employment of teachers in the institutions of higher education and also on the rates of growth in the output of graduates. The rates of growth in the employment of teachers have come down to 5.41 per cent per annum in 1971-75 from 10.44 per cent per annum in 1966-71. Those in output of graduates came down to 7.25 per cent in 1971-73 per annum from 22 per cent per annum, in 1961-70. Looking to the growing unemployment among degree holders the declining rate of output of graduates may be viewed as a favourable sign.

Conclusions

From the above analysis it may be concluded that:

- a) there have been declining rates of growth in enrolment in higher education during 1970-75.

- b) among the factors considered, the expenditure on higher education is an important determining variable in the rates of growth in enrolment.
- c) recent developments in higher education had a very negligible impact on the rate of growth in enrolment.
- d) the declining trend in rates of growth has affected the demand for educated people in the education industry.
- e) declining trends in the rates of growth of enrolment in the case of colleges in urban areas will help in the improvement of student-teacher ratio. That in turn might help in the improvement in the quality of education. But in the case of colleges in rural areas with small enrolment further decline in the enrolment would adversely affect the economic functioning of these colleges. This in turn would call for more grant-in-aid or may as well cause the closure of some of the colleges.

Policy suggestions

The faster rate of growth in the number of institutions of higher education and enrolment during 1950-70 has resulted in:

- a) Deterioration in the quality of higher education,
- b) Establishment of a large number of colleges with small enrolment termed as under-populated colleges,
- c) Larger supply of graduate degree holders than the economy could absorb. That is to say graduate unemployment.

The decline in the rate of growth in enrolment during 1970-75 may be considered as a welcome sign in so far as it reduces the pressure of enrolment on the colleges in the urban areas and on the demand for establishment of new colleges in urban as well as rural areas. Resources released in this way can now be used for improving the

quality of education and increasing enrolment in the under-populated colleges. The policy measures suggested below, therefore, intend to help in this process of improvement. Some suggestions are also made about dealing with the problem of graduate unemployment and the rising aspirations for higher education among the people.

Quality of Education

During the last two decades the number of colleges has increased tremendously. In 1952-53 there were only 824 colleges with an enrolment of 2.37 lakhs students. In 1974-75 this number had increased to 4388 with an enrolment of 23.66 lakhs students.¹³ This growth was to meet the pent-up demand for higher education from middle, upper middle as well as lower classes. Increase in number of colleges was also partly due to the fact that there was a sort of competition among the States for creating institutions of higher learning during the post-independence period. Some of them were genuinely needed. Some of them grew out of the desire of local leaders to provide higher educational facilities in their native areas. As a result of the rapid growth in the number of institutions there was a greater demand of teachers in these colleges during the last two decades. Since initially the supply of teachers with appropriate qualification and adequate training was essentially small the increasing rate of growth of the institutions and enrolment in them called for recruitment of teachers with less qualification and inadequate training.

Therefore, the emphasis of the revised policy should be on the improvement of the quality of higher education. The Planning Commission has also emphasised consolidation and improvement of higher education. Improvement in the quality of education can be achieved through:

- a) Training of teachers
- b) Provision of library and laboratory facilities
- c) Hostel facilities for students

a) Training of Teachers: The University Grants Commission organises summer schools and seminars, in

13 UGC Annual Report, year 1974-75, New Delhi p. 12.

the various courses for improving the quality of teachers but the number of such courses organised during a year and the number of participants in them are rather few and also most of the teachers are drawn from the colleges in the urban areas who have a fair amount of competence. The revised policy should, therefore, ensure that a large number of participants in these training courses are drawn from the colleges in rural and backward areas. It is also necessary that more courses are organised so as to cover a larger number of colleges.

b) Laboratory and Library Facilities: It is a well known fact that many colleges lack well-equipped laboratory and library facilities. It is obvious that in the absence of adequate laboratory and library facilities any amount of effort by teachers as well as by students will not yield the required results. It is the practice in several colleges that an experiment in science is performed and a large number of students watch it being done rather than carry it out themselves. Regarding library facilities, these are inadequate particularly in colleges in rural areas. Therefore the revised policy should insist on creating better laboratory and library facilities.

c) Hostel facilities for Students: Very few colleges provide hostel facilities for their students. The need for such facilities is greatly felt in the colleges located in rural areas because many students commute from nearby places to attend classes and many others have to stay in private rented accommodation. The latter usually have very poor educational environment. The new policy should, therefore, pay attention to creating necessary hostel facilities in the colleges.

Under-populated Colleges

Another consequence of the rapid growth of colleges is that many of them could enrol only a small number of students. As on 1976 out of 3856 colleges covered by the Third Education Survey, as many as 2236 colleges are with an enrolment of less than 400 students. These colleges are

considered as financially non-viable. ¹⁴ Of these non-viable colleges as many as 280 are in Maharashtra, 268 in Uttar Pradesh, 213 in Bihar and 207 in Madhya Pradesh. In almost all the States except Kerala more than half of the total colleges are with an enrolment of upto 400 students. The highest proportion of such non-viable colleges is in Bihar (76 %). This is followed by Assam (74 %) and Orissa (71%). In Kerala the proportion of such colleges is only 37 %. ¹⁵

These colleges are placed at a disadvantage from two points of view. Firstly, as they have small students' strength they find it difficult to maintain good and specialized faculties and offer other educational facilities. Secondly, because these colleges are with an enrolment of less than 400 students, they are generally not eligible for UGC faculty development and other grants-in-aid. As a result they are not able to attract a large number of students. Thus a sort of vicious circle is formed viz., they cannot provide better facilities because they are small in strength and they cannot increase their strength because they are not able to offer better facilities.

Here a distinction may be drawn between the colleges that are managed by State Governments and those managed by private agencies. The educational facilities and quality of education in these colleges (managed by both) are generally poor. The per student cost is also high. The problems of inadequate facilities and heavy deficit due to small strength are not highlighted in the case of government colleges as they are fully maintained by the State exchequer. Whereas the problems of private colleges are highlighted because these often face serious financial difficulties which sometimes leads even to their closure.

This situation raises three basic questions about the under-populated colleges. These are :

whether these colleges should be closed down ?

14 UGC, Third National Education Survey, New Delhi, 1976.

15 Details may be seen in the Appendix 'D' to this study.

whether they should be allowed to function with heavy deficits and with poor quality of education?

whether they should be provided with extra educational facilities with a view to making them function economically?

It has to be remembered that a large number of such colleges are located in rural and semi-urban areas and serve over 4 lakhs ¹⁶ of students. The closure of these colleges would militate against the policy of developing education among the rural people. Therefore, the closing down of these colleges would hardly be possible.

The question therefore arises whether these colleges should be allowed to function with inadequate teaching and other facilities. In our view, if these colleges are not helped to survive with minimum efficiency, a higher cost will have to be paid in terms of higher per student cost, poor educational quality and the low productivity of the graduates produced by them.

It would be seen that the only way out of the current impasse is to provide these under-populated colleges with better libraries, laboratories and hostels so that they attract more students from neighbouring semi-urban areas and check their tendency to rush to towns and cities in search of better education. This process will be further encouraged if suitable scholarships are also offered to good and serious students both local and from outside. Once this is accomplished it would be possible to attract better qualified teachers from nearby towns and raise the academic status of these colleges. It is then that the present one-way exodus from rural to urban areas will give place to a free flow between the two.

The new policy of helping these institutions would in the long run reduce the demand for more grant-in-aid by the colleges. The provision of additional educational facilities and better qualified staff will also help in improving the quality of graduates produced by these institutions. That

in turn will have a more positive impact on the productivity of these graduates when they are employed.

Two precautions could be taken in order to maintain proper enrolment in these under-populated colleges. In 1964 a Conference of Principals considered the question of discouraging affiliation to new colleges to ensure the strength of the old ones. But it could not reach any definite conclusion. One of the basic condition for affiliation is that the proposed college meets an actual need of the locality and does not unnecessarily compete with an old one to the detriment of both. This condition can be more strictly imposed.

There are at present 49 colleges with a strength of 2500 to 5000. These are in metropolitan areas and UGC's limit of 2000 for a college is relaxed in their cases in view of the pressure of admissions in the locality. If UGC's limit is to be fully observed the colleges in nearby localities have to be encouraged to achieve a proper academic competence. It should then be possible to divert the over flow from the few established institutions to these colleges. The ceilings proposed for colleges will, however, have to be fixed after a thorough study of size, cost and output relationship.

The grants-in-aid policy of the UGC and the State governments has also to be modified to achieve the objectives of improving the quality of higher education and of increasing enrolment in the under-populated colleges.

UGC policy

Under the present policy the UGC gives grant-in-aid to the colleges who fulfil the following two criteria:

- i) they should be permanently affiliated to the university after fulfilling all conditions prescribed for purposes of affiliation by the university (in case of colleges set up after June, 1972), and
- ii) they should have a minimum enrolment of 400 students excluding pre-university/pre-degree/intermediate classes and a staff of at least 20 suitably qualified permanent teachers. In the

case of colleges providing two year degree courses the minimum required enrolment will be 270 and atleast 15 suitably qualified permanent teachers.

The condition of minimum enrolment and staff strength may be relaxed in the case of:

- i) Colleges with innovative educational programme;
- ii) Colleges located in backward areas;
- iii) Colleges for women students; and
- iv) Professional colleges. ¹⁷

The policy of grant-in-aid generally excludes the under populated colleges from availing of the UGC grant for faculty development, construction of hostels etc. Besides the amount paid as grant by UGC to the colleges in general is comparatively small. It forms 4% of the total amount paid as grants, the total being Rs:50 crores. This is due to the fact that the Central Universities and the colleges in the Union Territory of Delhi are the first charge on UGC's funds. (The allocations made to the colleges in general under various heads are shown in Appendix 'E'). Even so, the underpopulated colleges which number over 50% of the total number need special consideration. The revised policy should, therefore, allocate more resources for their faculty development and the improvement of their library, laboratory and hostel facilities. It is also necessary in this context that their teachers should be involved in the UGC's training and refresher courses such as summer schools, seminars etc.

State Government Policy

The method of grant-in-aid by State Government to the colleges varies from State to State. In Andhra Pradesh grant-in-aid to colleges is based on the expenditure incurred on the staff after deducting fees from students. In Assam it is based on the deficit after deducting 40% of the fees receipts. whereas in Bihar grant-in-aid to the

colleges is determined by the State University Grants Commission on the basis of budgets presented by the colleges. These examples can be multiplied. The policies do not specifically take into consideration the size of the college. The States of Gujarat and Maharashtra do take into consideration the size of colleges, but not very effectively. The policy of grants-in-aid of State Governments have more or less been 'size neutral'.

As the methods of grants-in-aid by State Governments vary from State to State, it may be suggested that a systematic and uniform method of grant-in-aid be evolved. In the new situation when education is on the concurrent list, it may be possible to evolve a uniform method of grants-in-aid. This new method should give due consideration to the problems of colleges in backward and rural areas and the colleges of special type. The state government should besides giving grant-in-aid for maintenance, give grants for the specific schemes such as development of library, laboratory and hostel facilities. It should also offer scholarships to under-populated colleges to attract better and serious students. Some extra allowance if paid in these institutions will attract better teachers to serve on the staff of these colleges.

Graduate Unemployment

Another consequence of the faster rate of growth in enrolment in higher education in the past two decades as well as higher graduate output resulted in the supply of more graduates than that could be absorbed by the economy. During recent years a great deal of unemployment among the degree holders has been noticed. As on 1971 the incidence of unemployment was higher among the Science, Arts/Humanities, Technical Engineering and Technical vocational degree holders. The incidence of unemployment among these degree holders was 16.52% - for science graduate, 13.13% - for Arts graduates, 21.79% - for technical vocational graduates and 12.80% - for technical engineering graduates.¹⁸

18 Sharma G. D. & Apte M. D. "Graduate Unemployment in India", Economic & Political Weekly, 25th June, 1976, p. 22.

With a view to avoiding perpetuating of this problem it might be proper if a closer link between the economy's need of graduates and the expansion of higher education in the different faculties is established. This would avoid wastage of resources resulting in the unemployment of graduates, not to speak of frustration among the youth.

In this connection it may also be useful if a survey asking students about the types of courses they want to offer at the degree level and the reasons for their choice is conducted. Such a survey would be helpful in drawing guidelines for faculty development as well as knowing the causes of declining rates in enrolment in faculties such as Science, Arts and Engineering.

Aspiration for higher education

In a growing economy people generally entertain high aspirations. They desire to go up in their job positions as well as acquire better jobs. In the Indian economy higher positions and better jobs are linked with the higher educational qualifications. Moreover, graduate qualification still carries a social prestige in India. Therefore, many young people including working men and women are keen on acquiring higher educational qualifications. To meet their demand for higher education, correspondence courses in more universities need to be started. These courses should also provide more options. At present only 14 universities are offering correspondence courses. Options of subjects offered by them are generally limited to arts and science faculties. If correspondence courses are introduced in more universities and more options are given it will meet the growing demand for higher education. The establishment of open universities which is already under consideration will meet this demand effectively.

To sum up, it may be stated that during 1971-75 rates of growth in enrolment had come down to 5% from 12% during 1961-70. The decline in rates of growth in enrolment was due to the faster rate of growth in the past, the decline in expenditure on education and the decline in rates of growth in employment during last 10 years. The decline in rates of growth in enrolment may be considered as a happy sign

in so far as it reduces pressure on establishment of new colleges in urban and rural areas. The resources released from the expansion of colleges in urban areas and the establishment of new colleges can now be used for improving the quality of education and increasing enrolment in under-populated colleges.

The improvement in the quality of education could be achieved by introducing a larger number of summer institutes, seminars etc. for teachers, particularly for teachers in mofussil areas and by providing better and well-equipped laboratory, library and hostel facilities for students.

Enrolment in the under-populated colleges could be increased by providing these colleges financial aid for faculty development and library, laboratory and hostels facilities. Enrolment in them can also be increased by discouraging the establishment of new colleges in the neighbourhood where under-populated colleges are located and by putting a ceiling on the maximum number of enrolment in a college. As the number of under-populated colleges is very large it may be worthwhile to appoint a study group to go into the problems of these colleges.

The UGC and the State Government may pay special attention to improving the enrolment and quality of education in the under-populated colleges.

For dealing with the problem of graduate unemployment, it may be suggested that the output of graduates by the universities maybe linked with the actual needs of the economy. The contents of courses at the graduate level may also be revised according to the demands of the economy and the society.

For meeting the aspirations of a large number of young and working people for higher learning correspondence courses in more universities may be introduced. These courses should also have more options. The establishment of the open university coupled with correspondence courses would help fulfil the aspirations of people for higher education.

Enrolment in higher education, India,1950-51-60

Year	Enrolment (in lakhs)	Annual percentage Rate of growth
1950-51	4.23	
1951-52	4.75	12.29
1952-53	5.33	12.21
1953-54	6.03	13.13
1954-55	6.75	11.94
1955-56	7.36	9.03
1956-57	8.01	8.83
1957-58	8.62	7.61
1958-59	9.58	11.13
1959-60	10.45	9.08

SOURCE :

G. O. I., Education in India; Vol. I, 1951-65
 Ministry of Education & Social Welfare,
 New Delhi.

APPENDIX 'B' — Enrolment in Higher Education, By faculty,
Andhra Pradesh, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg./Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	16,128	35,552	4,809	1,322	5,510	6,158
1964-65	18,181	37,003	5,526	1,487	6,169	6,915
1965-66	18,944	40,208	6,488	1,702	6,275	7,414
1966-67	21,836	46,221	8,359	1,909	6,935	8,129
1967-68	27,970	51,600	11,320	2,208	7,595	8,367
1968-69	35,656	58,257	17,126	2,536	7,795	8,778
1969-70	51,210	69,359	22,809	3,148	7,501	8,673
1970-71	55,621	61,509	28,170	3,261	5,976	8,929
1971-72	60,173	58,983	35,217	2,971	5,782	8,813
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd) — Enrolment in Higher Education, By faculty
Andhra Pradesh, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	54,159°	
1962-63	...	...	...	...	63,498°	17.24
1963-64	1,137	...	3,447	718	73,316	15.46
1964-65	1,241	100	3,319	690	83,787	14.28
1965-66	1,448	102	3,472	659	92,560	10.47
1966-67	1,745	149	4,804	741	108,980	17.73
1967-68	1,899	181	3,929	838	117,442	7.76
1968-69	1,986	185	4,560	946	126,021	7.30
1969-70	2,004	176	4,277	504	141,824	12.53
1970-71	1,870	150	5,553	930	151,512	6.83
1971-72	1,630	142	6,465	996	162,888	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	202,425°	...

° Break down of data by subjects are not available for these years.

**APPENDIX 'B' — Enrolment in Higher Education, By faculty,
Assam, 1961-62-74**

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	31,931	8,253	2,706	306	983	999
1964-65	32,667	9,464	2,367	391	967	1,177
1965-66	34,992	10,721	2,865	760	982	1,472
1966-67	38,131	12,077	2,784	777	1,099	1,472
1976-68	42,035	14,028	3,580	824	1,355	1,574
1968-69	46,746	14,148	3,401	862	1,213	2,071
1969-70	48,803	15,406	4,042	982	1,152	1,898
1970-71	52,571	17,050	4,520	1,100	1,082	2,030
1971-72	59,137	17,564	5,950	1,245	939	2,164
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Assam, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	59,986°	...
1962-63	...	...	...	...	67,564°	12.63
1963-64	1,283	738	1,215	357	73,072	8.15
1964-65	1,181	626	1,291	312	78,691	7.68
1965-66	1,391	718	1,301	486	84,927	7.92
1966-67	1,595	761	1,879	242	97,866	15.32
1967-68	1,701	752	1,121	767	113,389	15.86
1968-69	1,577	825	1,162	1,074	134,786	18.87
1969-70	1,810	752	1,384	1,145	167,827	24.25
1970-71	1,693	689	1,500	1,175	168,023	0.11
1971-72	1,339	584	1,773	1,539	177,174	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Bihar, 1961-62-74

Year/Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	66,927	27,776	5,831	531	6,508	2,526
1964-65	61,253	31,670	5,774	1,042	6,632	2,941
1965-66	65,490	36,593	6,170	1,072	6,843	3,247
1966-67	66,678	42,049	6,574	1,063	7,125	3,285
1967-68	78,905	55,105	8,401	1,119	6,708	3,821
1968-69	81,430	60,204	8,725	1,117	6,680	3,345
1969-70	82,859	60,204	9,391	1,332	6,211	3,611
1970-71	92,093	69,158	11,214	2,492	5,881	3,702
1971-72	109,577	88,291	12,755	3,473	5,442	4,247
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Bihar, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	32,157°	...
1962-63	...	...	...	...	34,976°	8.76
1963-64	392	246	486	...	46,239	32.2
1964-65	391	246	527	...	48,197	4.23
1965-66	216	271	1,061	...	53,340	10.67
1966-67	216	289	1,263	...	58,113	8.94
1967-68	357	289	1,624	...	65,666	12.99
1968-69	357	271	1,986	...	71,055	8.20
1969-70	468	301	2,487	...	75,539	6.31
1970-71	409	302	2,480	...	81,544	7.94
1971-72	494	336	2,523	56	90,408	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	107,413°	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Gujarat, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	26,857	20,920	9,677	1,131	6,188	3,241
1964-65	30,966	24,289	12,329	1,148	6,019	3,686
1965-66	32,872	26,292	15,114	1,543	6,876	4,182
1966-67	38,450	31,050	18,183	1,720	7,547	4,591
1967-68	40,719	31,819	23,448	2,022	7,940	4,647
1968-69	42,613	33,376	25,866	2,196	7,815	6,478
1969-70	48,323	36,478	31,916	2,847	8,319	6,980
1970-71	47,745	34,420	40,384	3,736	8,727	7,997
1971-72	52,876	32,360	47,810	4,452	8,656	7,501
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty
Gujarat, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	103,976°	...
1962-63	...	...	...	...	106,496°	2.42
1963-64	944	623	2,296	7	113,951	7.00
1964-65	1,089	650	2,846	6	113,903	0.05
1965-66	1,079	816	3,662	15	124,987	9.73
1966-67	1,106	786	4,369	16	133,051	6.45
1967-68	1,058	765	4,902	16	160,800	20.85
1968-69	978	734	3,727	16	161,850	0.65
1969-70	886	428	3,993	9	168,924	4.37
1970-71	829	390	4,253	12	190,024	12.49
1971-72	704	434	5,077	...	230,000	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	209,551	...

°Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Jammu & Kashmir, 1961-62-73

Year/ Faculty	Arts	Science	Commerce	Education	Engg./ Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	4,982	4,049	213	434	782	635
1964-65	5,176	5,237	235	420	971	650
1965-66	4,957	5,478	298	547	971	742
1966-67	5,884	6,306	357	706	1,146	1,039
1967-68	6,794	7,426	316	826	1,125	1,017
1968-69	8,413	8,456	480	750	934	901
1969-70	10,350	9,535	640	514	784	943
1970-71	13,007	8,477	726	712	754	914
1971-72	12,921	10,036	856	543	749	873
1972-73	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty
Jammu & Kashmir, 1961-62-73

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	7,962°	...
1962-63	...	...	...	...	10,997°	38.11
1963-64	312	...	...	...	11,407	3.72
1964-65	334	...	...	...	13,023	14.16
1965-66	286	...	...	30	13,309	2.19
1966-67	245	...	...	...	15,683	17.83
1967-68	153	...	...	...	17,657	12.58
1968-69	105	...	...	...	20,039	13.49
1969-70	84	...	115	7	22,972	14.63
1970-71	74	...	301	10	24,975	8.71
1971-72	74	...	470	223	26,745	...
1972-73	...	...	...	...	31,081°	...

°Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty
Kerala, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	17,451	34,444	4,701	2,409	3,922	2,317
1964-65	28,632	40,978	3,590	2,450	4,008	2,734
1965-66	32,036	63,970	4,884	2,485	4,922	2,963
1966-67	36,320	68,727	4,940	2,432	5,103	2,583
1967-68	46,335	72,684	6,708	2,492	5,337	3,322
1968-69	53,742	77,152	7,358	2,531	5,137	3,687
1969-70	62,567	82,686	8,770	2,418	4,934	3,867
1970-71	67,039	83,307	10,106	2,454	3,567	4,271
1971-72	72,898	86,381	10,243	2,447	3,289	3,729
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty
Kerala, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	50,544°	...
1962-63	...	...	...	...	56,038°	10.86
1963-64	281	318	462	18	66,323	18.35
1964-65	284	252	542	...	83,452	25.82
1965-66	290	247	491	17	112,305	34.57
1966-67	292	239	744	34	121,414	8.11
1967-68	339	234	1,244	...	138,695	14.23
1968-69	307	238	563	7	150,722	8.67
1969-70	246	203	871	22	166,548	10.52
1970-71	202	211	1,330	32	172,519	3.56
1971-72	191	214	1,543	81	181,016	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	166,643°	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Madhya Pradesh, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	51,294°	...
1962-63	...	...	...	...	62,860°	22.54
1963-64	1,600	501	2,533	262	74,824	19.03
1964-65	1,856	492	3,152	420	89,264	19.29
1965-66	1,771	527	4,270	393	105,104	17.74
1966-67	1,738	532	5,445	358	119,530	13.72
1967-68	1,260	466	5,702	679	121,720	1.83
1968-69	1,117	409	6,958	594	123,232	1.24
1969-70	1,022	396	8,029	1,241	159,888	29.74
1970-71	1,123	394	9,145	1,317	142,403	-10.94
1971-72	1,225	411	10,710	1,787	146,284	...
1972-73	...	...	...	...	...	...
1973-74	....	...	...	...	147,239°	...

° Break down of data by subjects are not available for these years

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Madhya Pradesh, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	30,957	18,746	9,144	1,922	5,680	3,479
1964-65	36,696	23,225	10,833	2,326	6,062	4,202
1965-66	44,262	26,805	12,942	2,820	6,704	4,610
1966-67	50,505	30,712	14,748	3,382	7,299	4,811
1967-68	51,098	30,457	14,921	3,439	8,137	5,507
1968-69	53,955	28,266	15,421	2,860	7,926	5,766
1969-70	69,869	43,977	18,361	2,886	7,954	6,153
1970-71	57,226	39,579	17,035	3,500	7,135	5,949
1971-72	56,572	39,539	19,064	4,513	6,367	6,096
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Maharashtra, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	54,048	47,173	25,562	3,312	5,783	6,778
1964-65	59,363	51,682	29,519	3,725	5,781	6,844
1965-66	68,938	57,498	33,737	4,379	6,244	9,303
1966-67	77,195	63,986	38,623	5,474	7,373	10,212
1967-68	89,530	66,033	48,947	6,154	7,782	10,458
1968-69	101,778	69,261	58,637	7,432	8,681	11,036
1969-70	113,860	74,242	70,987	6,509	8,940	12,268
1970-71	136,709	77,219	81,884	7,181	9,103	12,291
1971-72	161,983	78,606	92,784	8,660	9,107	13,310
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Maharashtra, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	124,456°	...
1962-63	...	...	...	...	139,083°	11.75
1963-64	3,382	4,326	4,810	33	151,207	8.71
1964-65	3,909	361	5,050	100	166,334	10.00
1965-66	4,528	408	5,525	16	190,576	14.57
1966-67	4,950	467	6,600	23	214,903	12.76
1967-68	5,294	570	5,857	69	240,694	12.00
1968-69	4,654	591	6,458	65	268,593	11.59
1969-70	5,238	571	6,779	126	299,698	11.58
1970-71	6,454	573	7,969	218	339,601	13.31
1971-72	6,198	526	10,056	1,214	382,444	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	453,774°	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By Faculty,
Mysore (Karnataka) 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	51,715°	...
1962-63	...	...	...	...	57,145°	10.49
1963-64	934	361	1,923	...	68,082	19.13
1964-65	967	437	1,905	...	71,676	5.27
1965-66	1,003	354	1,788	17	78,884	10.05
1966-67	1,005	434	2,128	33	99,605	26.26
1967-68	1,122	448	2,324	132	118,100	18.56
1968-69	1,268	428	4,040	152	137,857	16.72
1969-70	1,344	425	2,649	184	163,753	18.78
1970-71	1,319	440	3,605	299	183,050	11.78
1971-72	1,502	424	4,726	386	190,372	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	213,672°	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Mysore (Karnataka) 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	15,976	29,993	6,031	1,149	7,628	4,087
1964-65	16,703	29,855	6,658	1,371	8,340	6,040
1965-66	18,105	34,395	6,445	1,612	8,815	6,350
1966-67	23,011	44,804	8,532	2,086	9,628	7,944
1967-68	31,390	48,888	11,623	2,445	11,346	8,382
1968-69	40,883	51,443	15,355	2,678	11,959	9,651
1969-70	51,157	62,275	19,381	2,774	12,151	11,413
1970-71	64,485	62,364	24,374	3,148	10,822	12,264
1971-72	70,470	58,286	28,963	3,628	9,534	12,453
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Orissa, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	
Year/ Faculty	Agril.	Vet. Science	Law	Other	Total	Rate of growth in percentage
1961-62	...	...	...	...	16,442°	...
1962-63	...	...	...	...	18,628°	13.29
1963-64	748	238	349	...	22,379	20.13
1964-65	970	259	428	...	27,202	21.55
1965-66	793	396	501	...	29,234	7.47
1966-67	804	307	751	...	34,286	17.28
1967-68	653	353	655	...	38,794	13.14
1968-69	732	266	591	...	42,488	9.52
1969-70	713	271	1,582	...	46,672	9.84
1970-71	971	140	1,960	...	52,207	11.85
1971-72	635	148	2,386	...	55,590	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	71,574°	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Orissa, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	9,604	7,548	565	399	1,420	1,508
1964-65	11,826	8,625	786	611	1,856	1,841
1965-66	12,384	9,786	578	611	1,946	2,329
1966-67	15,346	11,191	699	791	1,923	2,474
1967-68	18,204	12,938	767	921	1,882	2,121
1968-69	20,419	14,062	857	1,070	2,133	2,358
1969-70	22,698	14,923	1,114	1,188	1,830	2,353
1970-71	27,020	15,018	1,426	1,555	1,788	2,329
1971-72	29,690	15,299	1,818	1,566	1,807	2,241
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty
Punjab & Haryana, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	61,940°	...
1962-63	...	...	...	...	68,956°	11.32
1963-64	1,693	365	699	360	68,358	- .87
1964-65	2,023	386	983	423	79,830	16.78
1965-66	2,375	391	1,375	408	93,206	16.75
1966-67	2,940	459	1,587	462	113,062	21.30
1967-68	2,925	415	1,264	496	141,737	25.36
1968-69	2,939	520	1,095	339	167,896	18.45
1969-70	3,325	377	1,596	532	196,757	17.18
1970-71	3,170	525	1,905	731	203,046	3.19
1971-72	2,967	633	2,199	7,818	207,706	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	212,012°	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Punjab & Haryana, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	33,125	15,890	1,023	4,469	6,541	4,193
1964-65	39,900	17,749	1,581	4,069	7,884	4,832
1965-66	47,172	19,550	1,656	4,039	10,013	6,227
1966-67	59,778	22,292	1,944	4,334	11,803	7,463
1967-68	81,283	25,733	2,764	5,697	12,105	9,055
1968-69	104,389	29,696	3,690	6,866	8,627	9,735
1969-70	129,858	32,544	4,615	7,463	7,155	9,292
1970-71	138,934	31,145	5,160	6,452	6,621	8,403
1971-72	144,828	26,529	7,556	6,386	5,549	1,027
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Rajasthan, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	14, 833	9, 275	6, 526	1, 006	2, 482	1, 494
1964-65	16, 614	9, 898	6, 656	1, 425	1, 434	1, 911
1965-66	18, 501	10, 744	7, 136	1, 919	1, 625	2, 222
1966-67	18, 969	12, 178	8, 298	2, 196	1, 693	2, 871
1967-68	21, 057	14, 345	8, 511	2, 503	3, 630	3, 657
1968-69	24, 534	18, 454	10, 050	2, 550	3, 513	4, 283
1969-70	26, 158	19, 719	10, 502	3, 016	3, 317	4, 602
1970-71	30, 435	21, 732	12, 983	3, 664	3, 250	4, 423
1971-72	31, 737	22, 377	14, 295	3, 740	3, 174	4, 717
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Rajasthan, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	33,587°	...
1962-63	...	...	...	...	36,547	8.81
1963-64	1,103	192	848	...	37,809	3.45
1964-65	1,372	180	1,101	...	40,591	7.35
1965-66	1,485	230	1,258	...	45,128	11.17
1966-67	1,514	251	1,532	4	49,506	9.70
1967-68	1,683	294	1,521	...	57,201	15.54
1968-69	1,535	275	1,194	...	66,388	16.06
1969-70	1,299	249	1,844	112	70,872	6.75
1970-71	1,184	239	2,760	64	80,736	13.91
1971-72	1,135	153	3,800	183	85,311	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	99,516°	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Tamil Nadu (Madras), 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	18,301	35,097	4,637	2,110	5,477	5,451
1964-65	23,002	41,673	5,697	1,828	6,580	6,013
1965-66	31,008	47,583	3,287	1,982	7,008	7,188
1966-67	33,709	58,592	3,674	2,174	8,275	8,349
1967-68	43,631	68,539	3,781	2,307	9,716	8,498
1968-69	55,092	76,017	5,070	2,968	9,611	8,994
1969-70	67,247	85,486	6,783	2,968	9,016	9,661
1970-71	75,398	90,077	9,573	2,912	8,370	9,931
1971-72	82,591	94,301	12,001	3,264	9,150	10,238
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Tamil Nadu (Madras), 1961-62—74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	63,511°	...
1962-63	...	...	...	...	67,273°	5.92
1963-64	975	705	1,195	245	74,193	10.28
1964-65	988	705	1,161	631	88,278	18.98
1965-66	1,082	752	1,075	481	101,446	14.91
1966-67	1,138	762	1,002	529	118,204	16.51
1967-68	1,274	721	1,326	636	140,429	18.80
1968-69	1,378	744	1,906	550	162,330	15.59
1969-70	1,379	813	1,076	837	185,266	14.12
1970-71	1,394	830	1,887	698	201,070	8.53
1971-72	1,448	848	2,361	1,068	217,270	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	231,995°	...

Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Uttar Pradesh, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg./ Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	143,981	96,431	23,570	4,000	7,186	5,239
1964-65	151,335	101,219	24,332	4,710	7,560	5,596
1965-66	158,588	127,052	26,968	4,728	7,845	4,785
1966-67	172,443	150,385	27,032	5,125	9,061	4,983
1967-68	200,703	175,583	26,949	5,149	9,793	5,614
1968-69	236,712	196,217	30,253	5,988	9,603	6,074
1969-70	269,796	229,076	25,470	6,635	9,338	5,988
1970-71	291,958	248,206	25,656	7,022	8,877	6,259
1971-72	324,074	265,039	27,803	8,660	8,225	6,623
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Uttar Pradesh, 1961-62--74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	277,343°	...
1963-64	25,944	840	4,973	6,001	318,165	14.71
1964-65	27,029	864	5,230	6,247	334,122	5.01
1965-66	32,700	909	6,155	4,717	374,447	12.06
1966-67	32,732	955	6,903	5,283	414,902	10.80
1967-68	30,374	944	6,853	5,175	467,137	12.58
1968-69	32,615	933	7,890	6,142	532,427	13.97
1969-70	21,928	930	11,427	7,464	588,052	10.44
1970-71	21,257	887	14,428	8,412	632,922	7.63
1971-72	20,969	761	19,316	10,046	991,536	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
West Bengal, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	75,524	41,710	23,895	2,061	6,185	4,430
1964-65	88,309	42,906	30,017	2,284	6,843	4,199
1965-66	95,334	44,686	34,001	3,115	57,593	4,763
1966-67	102,518	49,497	37,508	3,791	8,119	4,939
1967-68	109,334	56,238	44,311	4,204	8,320	4,905
1968-69	114,445	64,342	49,802	5,242	8,154	5,041
1969-70	125,915	69,406	56,777	6,254	7,899	4,927
1970-71	139,206	79,150	65,866	7,016	6,750	5,364
1971-72	151,904	83,038	71,690	6,920	6,333	5,495
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
West Bengal, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1961-62	...	...	...	...	136,275°	...
1962-63	...	...	...	...	150,472°	10.41
1963-64	451	171	3,645	368	158,440	5.29
1964-65	594	153	3,778	363	179,446	13.25
1965-66	743	218	4,655	362	195,470	8.92
1966-67	915	162	4,994	374	212,817	8.87
1967-68	1,034	178	5,576	472	234,572	10.22
1968-69	1,055	171	6,400	522	255,174	8.78
1969-70	1,064	239	6,748	738	279,967	9.71
1970-71	959	452	9,920	756	315,439	12.67
1971-72	908	452	8,471	1,015	336,226	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	311,359°	...

° Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, BY faculty,
Delhi, 1961-62-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg. / Tech.	Medical
1961-62	...	...	...	...	...	...
1962-63	...	...	...	...	...	...
1963-64	18,374	3,068	1,688	184	740	2,173
1964-65	20,563	3,229	2,489	241	1,008	2,161
1965-66	23,058	3,893	2,714	232	893	2,291
1966-67	25,058	4,832	2,197	281	1,293	2,141
1967-68	29,357	6,442	3,484	738	1,507	2,177
1968-69	34,431	8,173	3,477	890	1,590	2,272
1969-70	37,532	9,209	4,767	920	1,334	2,388
1970-71	40,679	9,598	5,029	717	1,371	2,545
1971-72	42,457	9,177	6,992	581	1,333	2,949
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	...	...

Contd.....

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Delhi, 1961-62-74

Year/ Faculty	Agril.	Vet. Science	Law	Other	Total	Rate of growth in percentage
1961-62	...	...	...	...	24,181 ^o	...
1962-63	...	...	...	...	25,149	4.00
1963-64	...	...	690	15	26,932	7.08
1964-65	...	...	705	35	30,431	12.99
1965-66	...	...	729	40	33,850	11.23
1966-67	...	...	964	31	37,090	9.57
1967-68	513	...	683	38	44,939	21.16
1968-69	517	...	990	66	52,406	16.61
1969-70	605	...	1,383	77	58,035	10.74
1970-71	444	...	1,622	216	62,221	7.21
1971-72	410	...	2,448	277	66,624	...
1972-73	...	...	...	...	...	...
1973-74	...	...	...	...	78,361	...

^o Break down of data by subjects are not available for these years.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Total, 1960-61-74

Year/ Faculty	Arts	Science	Commerce	Education	Engg./ Tech.	Medical
1960-61	487,016	294,329	92,802	18,990	45,139	34,139
1961-62	511,940	336,722	125,142	21,718	58,168	39,569
1962-63	535,291	390,174	121,971	25,638	68,589	49,546
1963-64	579,049	435,925	130,578	26,727	73,015	54,708
1964-65	641,186	478,702	147,789	29,528	78,114	61,742
1965-66	706,641	565,254	165,238	33,546	85,555	70,088
1966-67	786,124	654,899	184,452	38,241	95,422	77,286
1967-68	918,345	737,858	219,831	43,102	104,266	83,422
1968-69	1055,238	802,369	255,568	48,536	101,380	90,470
1969-70	1218,022	914,739	296,325	51,854	97,889	95,017
1970-71	1329,626	948,009	344,108	56,922	90,034	97,601
1971-72	1473,979	988,089	396,009	63,658	85,543	102,446
1972-73	1583,903	1008,517	432,886	67,848	85,224	107,811
1973-74	1657,228	986,135	484,594	70,680	89,224	110,410

Contd.

APPENDIX 'B' (Contd.) — Enrolment in Higher Education, By faculty,
Total, 1960-61-74

Year/ Faculty	Agril.	Vet. Science	Law	Others	Total	Rate of growth in percentage
1960-61	23,889	4,788	27,240	2,552	1030,384	...
1961-62	24,794	5,214	29,401	2,712	1151,036	11.70
1962-63	31,427	5,524	28,944	8,152	1272,666	10.56
1963-64	41,116	5,624	29,571	8,384	1384,697	8.80
1964-65	44,228	5,711	32,000	9,227	1528,227	10.36
1965-66	51,190	6,257	37,318	7,641	1728,773	13.12
1966-67	52,935	6,553	44,970	8,130	1949,012	12.73
1967-68	51,639	6,610	44,581	9,318	2218,972	13.85
1968-69	53,120	6,590	49,520	10,473	2473,264	11.45
1969-70	43,415	6,131	56,240	12,998	2792,630	12.91
1970-71	43,351	6,222	70,618	14,800	3001,292	7.47
1971-72	42,184	6,086	84,443	19,877	3262,314	...
1972-73	42,958	5,954	98,855	22,140	3456,096	...
1973-74	43,356	6,334	113,230	22,804	3583,986	...

APPENDIX 'C' — Enrolment in Universities and
Colleges By faculties., 1950-51,
1970-71 and 1972-73.

Subject	1950-51		1970-71		1973-74	
	No.	%age	No.	%age	No.	%age
Arts	182,005	45.9	1329,626	46.51	1627,228	49.07
Science	127,168	32.1	948,009	33.16	986,135	29.20
Commerce	34,067	8.6	344,108	12.04	484,594	14.35
Education	4,135	1.0	-	-	-	-
Engg./Tech.	12,094	3.0	90,034	3.15	89,215	2.64
Medicine	15,260	3.9	97,601	3.40	110,410	3.27
Agriculture	4,744	1.2	43,352	1.52	43,356	1.28
Vet. Science	1,101	0.3	6,222	0.22	6,334	0.19
Law	13,649	3.4	-	-	-	-
Others	2,522	0.6	-	-	-	-
TOTAL	396,745	100.0	28,58,995	100.0	3377,272	100.0

SOURCES:

1. University Development in India, New Delhi
2. U. G. C. Report.
3. Educational Statistics at a glance, 1974-75

APPENDIX 'D'

Distribution of Underpopulated Colleges,
By States, 1976.

States	No. of Colleges with an enrol- ment upto 400 students	No. of total colleges	Percentage of underpopulated colleges to the total colleges
1. Andhra	129	232	55.60
2. Assam	90	121	74.38
3. Bihar	213	281	75.80
4. Gujarat	146	260	56.15
5. Haryana	64	106	60.37
6. H. P.	22	32	68.75
7. J. & K.	19	36	52.77
8. Kerala	48	130	36.92
9. M. P	207	325	63.69
10. Maharashtra	280	503	55.66
11. Manipur	8	15	53.33
12. Meghalaya	10	15	66.66
13. Mysore	173	287	60.27
14. Nagaland	4	4	100.00
15. Orissa	69	96	71.87
16. Punjab	109	173	63.00
17. Rajasthan	80	150	53.33
18. Tamil Nadu	104	223	46.63
19. Tripura	4	9	44.99
20. U. P.	268	445	60.22
21. West Bengal	148	314	47.13
22. Arunachal Pradesh	1	1	100.00
23. Andaman Nicobar	1	1	100.00
24. Goa, Daman, Diu	9	10	90.00
25. Chandigarh	7	13	53.84
26. Dadra Nagar Haveli	0	0	0
27. Lacadive Minicoy	0	0	0
28. Delhi	16	65	24.61
29. Mizoram	2	2	100.00
30. Pondichery	5	7	71.42

SOURCE : UGC, Third Education Survey, 1976, it may be however be pointed out that the third education survey covers only 3856 colleges of the total No. 4388 of colleges as reported by UGC, Annual Report, 1974-75.

APPENDIX 'E'

**Grants paid under Rs. 3 lakh scheme to Affiliated
Constituent Colleges, 1974-75**

Item of Assistance	Number of colleges	Amount paid in Rs.	Percentage
1. Construction of hostels	91	45,96,948	20.47
2. Laboratory and library facilities	445	1,27,57,777	56.87
3. Construction of staff quarters	77	34,29,053	15.27
4. Books and journals	100	2,98,283	1.32
5. Improvement of chalkboards	31	80,411	0.35
6. Overhead tanks	13	1,84,735	0.82
7. Cycle sheds	17	1,18,437	0.82
8. Non resident student centres	64	9,86,437	4.39
Total amount		<u>2,24,52,081</u>	<u>100.00</u>

**Grants paid for the Development of Postgraduate
Studies in the Colleges, 1974-75**

(i) Development of postgraduate studies in science	52	13,87,275	73.47
(ii) Development of post-graduate studies in humanities and social sciences	35	5,00,792	26.53
Total amount		<u>18,88,067</u>	<u>100.00</u>

SOURCE: UGC, Annual Report, 1974-75, UGC, New Delhi, p. 40.

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