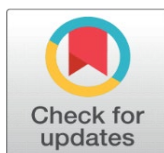
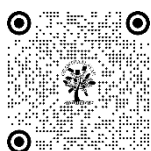


GOVERNMENT SPENDING ON HIGHER EDUCATION IN INDIA: AN ECONOMIC PERSPECTIVE

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ABSTRACT

This paper attempts to estimate the contribution of public expenditure on education to economic growth by using the central government expenditure on education. It has been observed that the public expenditure on higher education is positively associated with increasing gross enrollment ratio and growing higher educational institutions in India. The cumulative growth rate of public expenditure on higher education is 16.18 per cent per annum and GER in higher education growing at 5.75 per cent in every year during the 1991 to 2022. This work suggests to the government that focus must be given on small towns, rural areas, remote villages and backward regions where GER is very low compare to the urban area. Government should allow ability to pay fee policy after studying the unit cost of education at different levels, programmes, quality and scale of higher education. An essential aspect of the fee policy should be discrimination in favour of poor and full cost recovery from the rich.

Keywords: Higher Education, Government, Trend Analysis, Human Capital, Enrollment

1. INTRODUCTION

Education is an important and basic input required to improve the quality of human resources. Indeed, education is the most important factor required to make labour, a productive factor. Labour without education and skill cannot be graded as human resources. It becomes a hindrance to development. Therefore, one of the necessary conditions for development is the improvement in the quality of human resource through education. Government expenditure on education is justified mainly on this ground and as matter of fact an increased proportion on education is justified mainly on this ground and as a matter of fact an increased proportion of expenditure on education is advocated to achieve a higher rate of economic growth.

However, expenditure on education does not yield immediate return to the individual as well as to the economy. The time lag and the size of return depend on many economic and non-economic factors. Moreover, time lag and the size of return may also vary from time to time and from economy to economy.

2. EDUCATION IN THE THIRD WORLD

The educational systems in India, Pakistan and Bangladesh are highly developed, giving an over production of teachers, administrators, entrepreneurs, even scientists and doctors, who are generally in short supply in the Third World. There is an ancient and still influential cultural base. But the present system of education does little or nothing to encourage rural development. If there were to be the kind of transformation that appears to be essential for the future development, then education would have to undergo a profound change in order to play a key role in the transformation, where as the present educational system is perpetuating a deep rooted imbalance. The balance sheet of the inflated educational system has strong credit-side as well as debits. The concept of education has broadened in recent years, and education was one of the human rights set out in the United Nations Charter. The aim of education is twofold, first is to raise the level of human skills, and second is to support economic growth, and it can be seen as an important key to the riddle of national economic development.

3. EDUCATION AND ECONOMIC GROWTH

Economists right from Adam Smith have realized that education plays an important role among the factors that contribute to economic development. Marshall regarded education as a national investment and most valuable of capital and the most valuable of all capital is one that is investment in human beings. Studies in this regard are many and recent studies made by Schultz, Kuznets, Denison & Bowman started a new era of economics – “Economics of Education”.

Schultz analyzed the contribution of education to growth in national income in the United States from 1900-56 and came to the conclusion that investment in education contributed 3.5 times more to the increase in gross national income than investment in physical capital. Denison estimated that investment in education contributed 25 per cent of the growth of the real income and 42 per cent of the growth of total national income per person employed in United States.

According to the estimation of economist Strumlin, education at primary and elementary level resulted in as much as 79 per cent increase in the output and wages of a labourer in the erstwhile Soviet Union. Further studies have established that secondary level prepares people for pre-vocational and vocation skills, while higher education contribute significantly to the expansion of output in engineering, architecture and machine building etc.,

Stirred up with the revolutionary economic thought of human investment, India too, like many other newly independent developing economies made heavy investment on education. The government accorded special importance to education not only in the country's constitution but also in the Five Year Plans. However, the Education Commission (Kothari 1966) that stressed relationship between education and productivity and considered education as one only instrument of social change on grand scale in India.

In nutshell, as people become more health and educated, they contribute more to economic growth as education enhances their capabilities, efficiency and productivity. Its importance lies in the fact that development does not yield education, but education yields development.

4. ECONOMICS OF HIGHER EDUCATION

Access to higher education needs to be widened in the country, in the formal system through effective innovative measures, such as a truly open system and networking of Universities. It is now imperative on the part of Indian Universities to generate their own resources to a large extent. This could be done through several methods, like raising tuition fee and collecting capitation fee (both having severe limitations); and others like, launching courses for foreign students, obtaining donations from philanthropists, etc., which have a good potential.

In the globalized World, the State-protected educational system cannot withstand the pressure without making itself competitive. There seem to be four reasons to new policy initiatives should be taken by the Government in this connection. They are: (i) the economic returns of primary education far exceed the returns of higher education; (ii) the private returns on higher education far exceed the social returns; (iii) that the State funding for higher education is insufficient in countries like India; and (iv) since private sector benefits the most from higher education, it is only just that it should make a decisive contribution.

Whether one accepts the Government's rationale or not, new strategies need to be developed for the survival and well being of the higher education system in the present scenario. Taking the problem of resource crunch in higher education at face value, some alternative ways were considered at the present situation, such as: research grants from industries, donations for admissions etc. which were found to be inadequate. It was observed that an organized structure for higher-educational fund raising and creating a culture of giving are the only possible solutions.

5. OBJECTIVES OF THE STUDY

- 1) To estimate the trend of expenditure, number of institutions and enrollment in higher education in India.
- 2) To compare the trend and changes in first and second decade after economic reforms.
- 3) To analyse the relationship between public expenditure of higher education and gross enrollment of students in higher education.

5.1. STATISTICAL TOOLS USED

Frequency table were used to understand the divergence in various levels of growth of higher education in India. Various functional forms like Linear Regression Model and Log Linear Model were used to estimate the cause and effect relationship between the dependent and independent variables.

Table - 1 Growth of Number of Recognized Educational Institutions and Budgeted Expenditure on Higher Education in Government of India

Year	Colleges for General Education	Colleges for Professional Education	Universities	Total No. of Colleges and Universities	Budgeted Expenditure on Higher Education (Rs. in crores)
1999	4862	886	184	5932	2157
2000	5058	950	196	6204	2986
2001	5334	989	207	6530	3854
2002	5639	1125	213	6977	4122
2003	6089	1230	219	7538	4714
2004	6569	1354	226	8149	5161
2005	6759	1770	228	8757	5738
2006	7199	2075	229	9503	6482
2007	7494	2113	237	9844	8190
2008	7782	2124	244	10150	10707
2009	7929	2223	254	10406	11723
2010	8737	2409	272	11418	10647
2011	9166	2610	304	12080	11679
2012	9427	2751	304	12482	12518
2013	10377	3201	343	13921	19959
2014	11698	5284	350	17332	24582
2015	11458	8354	371	20183	28759
2016	13381	9718	406	23505	32916
2017	15852	12030	440	28322	40286
2018	16958	14097	482	31537	44686
2019	19368	14898	642	34908	55896

2020	19790	15048	712	35550	59174
2021	20528	15420	723	36671	73064
2022	21583	15716	757	38056	81891

Source: Analysis of Annual Reports (Various Years), Ministry of Human Resource Development, New Delhi.

Various Annual Reports (1999-2000 to 2021-2022), University Grants Commission, New Delhi.

All India Survey on Higher Education 2021-2022, MHRD, New Delhi.

Economic reforms initiated in India in the beginning of 1990's consist of structural adjustment and stabilization policies. Following the structural adjustment policies, a fiscal squeeze is experienced in all social sector investments in many developing countries, including in India. This has trickled down to public expenditure on education in general and higher education in particular on account of the cut in the budget for higher education, there are severe pressures for the higher education system to mobilize resources from non-governmental resources, including privatization. The data found that Education expenditure accounted for 2157 crores in 1999 and it has grown 81891 crores in 2022.

6. GROSS ENROLLMENT RATIO (GER) IN HIGHER EDUCATION IN INDIA

Another parameter of the size of the Indian higher education system is reflected in the current enrolment of students in the institutions of higher learning. The number of students enrolled in the universities and colleges (formal system) has increased since independence to 13,642 million in the beginning of the academic year 2021-2022, with 1,669 million (12.24%) in the university departments and 11.973 million (87.76%) in the affiliated colleges. This does not include enrolment in higher education offered through Open and Distance Learning. Table – 2 provides the information about the drifts in gross enrollment in higher education for last two decades.

Table – 2 All India Growth of Student Enrollment 1991 to 2014

Year	Gross Enrollment in Higher Education	Year	Gross Enrollment in Higher Education
1999	49,98,457	2011	95,16,773
2000	52,65,886	2012	1,00,49,712
2001	55,34,966	2013	1,06,62,744
2002	58,17,249	2014	1,13,38,253
2003	61,13,929	2015	1,21,02,521
2004	65,74,005	2016	1,29,81,179
2005	68,42,598	2017	1,37,82,837
2006	72,60,418	2018	1,46,24,990
2007	77,05,520	2019	1,78,36,758
2008	80,50,607	2020	2,02,37,746
2009	83,99,443	2021	2,34,98,456
2010	89,64,680	2022	2,65,76,146

Source: Analysis of Annual Reports (Various Years), Ministry of Human Resource Development, New Delhi.

Various Annual Reports (1999-2000 to 2021-2022), University Grants Commission, New Delhi.

All India Survey on Higher Education 2021-2022, MHRD, New Delhi.

7. TREND ANALYSIS

This model is like any other linear regression model in that the parameters α and β are linear. The only difference is that regressand is the logarithm of Y and the regressor is "time", we can write this model as:

$$\ln Y_t = \alpha + \beta (\text{Time}) + U_t$$

Adding that the simple growth rate term as

$$SGR = \hat{\beta} \times 100$$

And the compound growth rate term as

$$CGR = (\text{anti Ln } (\hat{\beta}) - 1) \times 100$$

8. GROWTH OF GROSS ENROLLMENT IN HIGHER EDUCATION

$$\text{Ln (GEHE)}_t = \alpha + \beta(\text{time}) + U_t$$

$$\text{Ln (GEHE)}_t = 15.35 + 0.056 (\text{time}) + e_t$$

$$t (105.27) \quad \text{sig} (0.001) \quad r^2 = 0.99 \quad F = 1108$$

The above result shows the percentage increase in gross enrollment in higher education over twenty four years (1999-2022) is 5.6 %. The R^2 value of 0.99 shows the co-efficient of determination. The gross enrollment in higher education has increased at the rate of 5.6 percent per annum. And also gross enrollment in higher education has increased at the compound growth rate of 5.75 per cent per annum during the 1999 to 2022.

9. GROWTH OF COLLEGES FOR GENERAL AND PROFESSIONAL EDUCATION

$$\text{Ln (CG\&PE)}_t = \alpha + \beta(\text{time}) + U_t$$

$$\text{Ln (CG\&PE)}_t = 8.456 + 0.083 (\text{time}) + e_t$$

$$t (17.051) \quad \text{sig} (0.001) \quad r^2 = 0.942 \quad F = 1027$$

The above result reveals the percentage increase in colleges for general and professional institution over twenty four years (1999 to 2022). The R^2 value of 0.942 shows the co-efficient of determination. The colleges for general and professional institute on have increased at the rate of 8.3 percent per annum and also colleges for general and professional institution have increased at the compound growth rate of 8.6 per cent during the 1999 to 2022time periods.

10. GROWTH OF UNIVERSITIES AND INSTITUTIONS OF NATIONAL IMPORTANCE

$$\text{Ln (U\&NII)}_t = \alpha + \beta (\text{time}) + U_t$$

$$\text{Ln (U\&NII)}_t = 5.124 + .047 (\text{time}) + e_t$$

$$t (18.591) \quad \text{sig} (0.001) \quad r^2 = 0.950 \quad F = 345.618$$

The result found that after the new economic policy (1999 to 2022) number of Universities, Deemed Universities, Research Institutes and National Importance Institutions has grown 4.7 per cent per annum and also researcher calculated compound growth rate which is 4.82 per cent per annum during the 1999 to 2022time periods.

11. GROWTH OF TOTAL NUMBER OF HIGHER EDUCATION INSTITUTIONS IN INDIA

$$\text{Ln (THEI)} = \alpha + \beta (\text{time}) + U_t$$

$$\text{Ln (THEI)} = 8.490 + 0.082 (\text{time}) + e_t$$

$$t (17.046) r^2 = 0.942 \quad \text{sig} (0.001) \quad F = 1145$$

The study enlightens that after adopting the new economic policy (1999 to 2022), the total number of colleges and universities in India has grown at 8.2 per cent per annum and also the total number of colleges and universities in India increased at the compound growth rate of 8.5 per cent per annum.

12. GROWTH OF BUDGETED EXPENDITURE FOR HIGHER EDUCATION (RS. IN THOUSAND CRORES)

$$\text{Ln (BE)}_t = \alpha + \beta(\text{time}) + U_t$$

$$\text{Ln (BE)}_t = 7.651 + 0.150 (\text{time}) + e_t$$

t (30.371) sig (0.001) $r^2 = 0.981$ F = 922.377

The above result reveals the percentage increase in budgeted expenditure on higher education in India over twenty four years (1999 to 2022). The R^2 value of 0.981 shows the co-efficient of determination. The budgeted expenditure on higher education in India has increased at the rate of 15 percent. On other view also budgeted expenditure on higher education in India has increased at the compound growth rate of 16.8 per cent during the 1999 to 2022 time period.

Table – 3 Comparison of Growth Rate in First and Second Decade after Economic Reforms

Variable	First Decade		Second Decade		Total	
	S.G. R	C.G.R.	S.G. R	C.G.R.	S.G. R	C.G.R.
Budgeted Expenditure for Higher Education (Rs. in Crores)	15.3	16.5	17.7	19.3	15.0	16.18
Gross Enrollment in Higher Education	5.4	5.5	6.2	6.3	5.6	5.75
Colleges for General Education and Professional Education	6.6	6.82	13.1	13.9	8.3	8.6
Universities and National Importance Institutions	2.8	2.83	6.8	7	4.7	4.82
Total No. of Higher Education Institutions	6.5	6.7	12.9	13.7	8.2	8.5

S.G.R. – Simple Growth Rate, C.G.R. – Compound Growth Rate

Table - 3 explains the differences in Growth Rate of budgeted expenditure for higher education between second (1999-2009) and third Decade (2009-2022) after Economic Reforms. Budgeted expenditure for higher education has grown significantly 15.3 per cent and 17.7(S.G.R) and 16.5 to 19.3 per cent respectively. But gross enrollment of student in higher education has not increased significantly.

The researcher found that the total number of higher education institutions has grown 6.5 per cent per annum in first decade and 12.9 per cent per annum in second decade, but gross enrollment of students in higher education institutions shows 5.4 per cent in first decade and 6.2 per cent in second decade. Even though the number of educational institutions rate of growth is good, the growth in enrollment rate is not satisfactory.

The result elucidates that during the ten years period (1999 to 2009), the increase in the colleges for general and professional education of higher education has grown at the rate of 6.6 per cent (SGR) and 6.82 per cent (CGR) per annum. In the second decade after economic reforms from 2009 to 2022, it leads to 13.1 per cent (SGR) in simple growth rate and also calculate compound growth rate which is 13.9 per cent (CGR).

13. PUBLIC EXPENDITURE AND ENROLLMENT OF HIGHER EDUCATION

The researcher attempts to find out the relationship between budgeted expenditure on higher education and enrollment of students in higher education. Regression analysis has been used to find out the relationship.

Table – 4 Budget Expenditure and Gross Enrollment in Higher Education

Linear Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	R^2	F
	β	Std. Error	Beta				
(constant)	5.604E6	273122.349	-	20.518	0.001	0.93	243.04
BEHE	220.936	14.172	.965	15.589	0.001		

Dependent Variable: Gross enrollment on higher education.

BEHE: Budgeted Expenditure on Higher Education.

$$Y_t = \beta_1 + \beta_2 X_t + U_t$$

$$(GEH)_t = 560400 + 220.936(\text{Pub.Exp.}) + e_t$$

$$t (15.589) \quad \text{sig} (0.001) \quad r^2 = 0.93 \quad F = 243.04$$

The regression results show that Rs. 1 crores increase in the Budgeted Expenditure on Higher Education leads to enrollment of additional 221 students in higher education in various institutions across India significantly. This result clearly shows that annual per student expenditure (unit cost education) is Rs. 45,2548.00 it is need to every year for each students who enrolled in higher education in India.

Table – 5 Budget Expenditure and Gross Enrollment in Higher Education

Log - Linear Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig	R ²	F
	β	Std. Error	Beta				
(constant)	12.530	.105		119.37	.000	0.983	106.5
Ln_BEHE	.370	.011	.992	32.641	.000		

Dependent Variable: Gross enrollment on higher education

$$\ln Y_t = \beta_1 + \beta_2 \ln X_t + U_t$$

$$\ln (\text{GEH})_t = \beta_1 + \beta_2 \ln (\text{Pub.Exp})_t + e_t$$

$$\ln (\text{GEH})_t = 12.53 + 0.37 (\text{Pub.Exp.}) + e_t$$

$$t (119.37) \text{sig} (0.001) \quad r^2 = 0.98 \quad F = 1065$$

The researcher also made an attempt to analyse the relationship with log – linear regression model, this result shows that a 1 per cent increase in the budgeted expenditure on higher education, on average leads to 0.37 per cent increase in the student enrollment of higher education significantly.

14. FINDINGS AND CONCLUSION

This study have prepared a detailed investigation of enrolment of students in higher education, budgeted expenditure on higher education, total number of colleges and universities in India in the post economic reforms period, and identified the factors that affect the likelihood of the enrolment. Researcher also used with the help of linear and log-linear models it has been found out that the budgeted expenditure on higher education shown 15 per cent growth whereas gross enrollment of students in higher education shown only 5.6 per cent growth rate. It elucidate that need more consideration to policy improvement to increase enrollment in higher education across different states.

The fourth largest economy of the world cannot lag behind in education. The development of a nation-wide or region-wide role and mission of higher education is an essential step to understand the altitude of higher education system today and how to make forward our goals for the system. As of now inclusive higher education is necessary, which in turn require a strategy of inclusive planning, which must deliver quality and effective management of higher educational institution.

15. RECOMMENDATIONS OF THIS STUDY

The following suggestions are made on a pragmatic basis and with a view to provide a new base-line of action.

- 1) Focus must be given on small towns, rural areas, remote villages and backward regions where Gross Enrolment in Higher Education is very low compare to the urban area.
- 2) The expansion strategies must not rely upon the private sector alone. Public investment in higher education has to be increased substantially.
- 3) A rational analysis based on historical trend in the financing of higher education shows that public expenditure on higher education as a proportion to GDP is not good. It was only 4 per cent during the 11th plan. A realistic assessment of resource availability would then help to develop alternative strategies and priorities for the allocation of resources efficiently.
- 4) The strategy in the financing of higher education should revolve round the diversified source of funding. The government should evolve a twin strategy of cost sharing with students, parents and other beneficiaries of society to mobilize resources for government supported universities and colleges and attracting

private investment to establishing institutions under the regulatory framework guiding admission and fees policy and quality accreditation.

- 5) Government should allow a fee policy after studying the unit cost of education at different levels, programmes, quality and scale of higher education. An essential aspect of fee policy should be in favor of poor. Policy of subsidizing rich can no longer be a rational strategy in a fiscally constrained situation.

CONFLICT OF INTERESTS

None.

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