Phoenix: International Multidisciplinary Research Journal
Vol 4, No. 1.1, March, 2026
ISSN: 2583-6897

AN ECONOMETRIC ANALYSIS OF EDUCATION EXPENDITURE AND HIGHER EDUCATION INSTITUTIONS ON GROSS ENROLMENT RATIO IN INDIA 2000–2021

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Abstract
This paper examines the relationship between the number of *Higher Education Institutions* and education expenditure percentage to *Gross Domestic Product* with *Gross Enrolment Ratio* in India from 2000 to 2021. For this study, secondary data collected from the All India Survey of Higher Education reports on GER and the number of *Higher Education Institutions* and the Ministry of education Government of India. World Data Bank statistics on the education expenditure percentage to GDP. A multiple regression analysis was employed to examine the impact of education expenditure and institutional expansion on GER.
The findings reveal that education expenditure has a significant positive impact on GER, suggesting that increased government spending on education improves access to higher education.
The results highlight the importance of public investment in education and the expansion of higher education institutions in improving access to higher education in India. The study suggests that policymakers should focus on increasing education expenditure and strengthening higher education infrastructure to achieve higher enrolment levels and support sustainable economic development.
Keywords – Higher Education, Gross Enrolment Ratio, Education Expenditure, Higher Education Institutions, Gross Domestic Product,

1. Introduction
Higher Education play vital role in the economic growth of a country. In developing countries like India, Brazil, and China, higher education works as a key driver of the overall development of the nation. The expansion of higher education not only contributes to skill development and employment generation but also supports the creation of a knowledge-based economy. Therefore, examining the trends in higher education indicators, such as the Gross Enrolment Ratio (GER), education expenditure as a percentage of Gross Domestic Product (GDP), and the growth of higher education institutions(HEI), is essential for understanding the progress of the education sector in India.

2. Objective of the study
- To analyse the trend in the Higher Education sector based on GER, the number of HEI and the Education expenditure % to GDP
- To determine a relationship between the number of HEI and Education expenditure % to GDP and GER from 2000-2021

2.1 Research Question
There is a relationship between the Education expenditure % to GDP and GER from 2000 to 2021

3. Research Gap
Many studies focus on the Education expenditure and understating trends in the growth of GER and HEI. They often studied these variables independently. These studies examine their combined effect on higher education enrolment.

Another limitation is that previous studies focus on descriptive analysis without using econometric methods to measure the relationship between educational expenditure % to GDP, HEI Growth, and GER levels. This paper tries to fill this gap by examining the trends and relationships among these variables of higher education during the period 2000 to 2020 using statistical tools such as regression analysis

4. Research Methodology and Data Sources

Secondary data was used for this study. All India Survey of Higher Education (AISHE) reports and website data are used for the number of higher education institutions and Gross enrolment ratio data from 2000 to 2020. Education expenditure percentage to GDP data taken from world bank data source.

Table no 1 GER, HEI

Year	Gross Enrolment Ratio	Education Expenditure GDP %	Higher Education Institute
2000	9.51	4.32	12806
2001	9.69	4.10	13150
2002	10.18	3.95	13500
2003	10.63	3.61	14200
2004	10.93	3.35	15600
2005	10.68	3.19	16900
2006	11.49	3.14	18000
2007	13.13	3.40	20677
2008	15.05	3.56	22064
2009	16.03	3.28	25951
2010	17.83	3.38	33023
2011	22.76	3.80	34852
2012	24.27	3.87	35539
2013	23.79	3.84	36634
2014	25.43	3.90	38498
2015	26.77	4.11	39071
2016	26.83	4.25	40026
2017	27.44	4.31	41435
2018	28.06	4.36	42343
2019	28.57	3.90	43796
2020	29.44	4.29	43796

Source- Ministry of Education, Government of India. (AISHE) Department of Higher Education

The major sources of data include:

- *Ministry of Education, Government of India*
- *All India Survey on Higher Education (AISHE)*

- *Economic Survey of India*
- *World Bank and UNESCO Education Statistics*

4.1 Data Analysis

Simple Regression Model used for this research paper. This model is used to define the relationship between the education expenditure percentage to GDP and the number of HEIs with GER.

Dependent Variable

- Gross Enrolment Ratio (GER) – It measures the total enrolment in higher education, expressed as a percentage of the population in the eligible age group.

Independent Variables

- **Education Expenditure % to GDP**
  This Independent variable represents the total government expenditure on the education sector as a percentage of the country's GDP
- **Higher Education Institutions (HEIs)**

This Independent variable indicates the total number of universities, colleges and standalone institutes providing higher education in India.

5. Hypothesis

- **Null Hypothesis(H_0):** There is no significant relationship between Education Expenditure % to GDP and Higher Education Institutions (HEIs) with GER
- **Alternative Hypothesis(H_0):** There is a significant relationship between Education Expenditure % to GDP and Higher Education Institutions (HEIs) with GER

5.1 Rejection Rule:

If the p-value < 0.05, reject the null hypothesis.

6. Regression Model Specification

To examine the relationship between the variables, the study uses a **multiple linear regression model**. The regression equation is expressed as:

$$GER=\beta 0+\beta 1(Education\ Expenditure)+\beta 2(Higher\ Education\ Institutions)+\epsilon$$

Where:

- **GER** = Gross Enrolment Ratio
- β_0 = Intercept (constant term)
- β_1 = Coefficient of education expenditure
- β_2 = Coefficient of higher education institutions
- ε = Error term
- This model helps to estimate how changes in education expenditure and the number of higher education institutions influence the Gross Enrolment Ratio.

Table no 2

	Coefficients	*t Stat*	*P-value*
Intercept	-6.32541	-3.3153	0.003849
Education Expenditure GDP %	2.098137	3.809821	0.001283
Higher Education Institute	0.000604	32.17527	2.32E-17

Regression Statistics	
Multiple R	0.994098
R Square	0.98823
Adjusted R-Square	0.986922
Observations	21

7. Result and Findings :

The regression analysis shows that the **p-value for education expenditure is 0.001283**, which is **less than 0.05**. The null hypothesis (**H_0**) is **rejected**, and the alternative hypothesis (**H_1**) is **accepted**.

This indicates that **education expenditure significantly influences the Gross Enrolment Ratio in higher education**.

A multiple regression analysis was conducted to examine the impact of education expenditure (as a percentage of GDP) and the number of higher education institutions on the Gross Enrolment Ratio (GER) in higher education in India during the period 2000–2021. The regression results show a very strong relationship between the dependent and independent variables. **Multiple R=0.994.** This indicates a very strong positive correlation between GER and the explanatory variables. **R Square=0.98.** This means that **98.8% of the variation in Gross Enrolment Ratio is explained by education expenditure and the number of higher education institutions**, with an adjusted R-squared of **0.98.** After adjusting for the number of predictors, 98.69% of the variance in GER remains explained, indicating that the model is highly reliable.

8. Conclusion and Policy Implications

This paper confirms that there is a significant positive relationship between the number of higher education institutions and the education expenditure percentage to Gross Domestic Product, with gross enrolment ratio. Public investment in education leads to an increase in overall educational infrastructure and expansion of Higher education institutions like universities, colleges, and standalone institutions. This expansion impacted the Gross Enrolment Ratio. Currently, India's GER is 29.44 %, and China's GER is 60 % there is a huge gap between the GER in both countries. According to the National Education Policy 2020, aiming 50% increase in GER in 2035. Achieving the aim of 50% GER under the NEP 2020, through comprehensive and strategic higher public spending and expansion in the education sector and expansion of HEIs.

The findings of this study support the policy direction of NEP by highlighting that education expenditure and institutional expansion are key determinants of Gross enrolment in India.

References

- *Ministry of Education (India). (2022).(AISHE) 2020–21. Department of Higher Education, Government of India.*
- *Ministry of Education (India). (2023).(AISHE) 2021–22. Department of Higher Education, Government of India.*
- *World Bank. (2023). World Development Indicators: Government expenditure on education (% of GDP) – India. Washington, DC.*
- *UNESCO Institute for Statistics. (2023). Education expenditure database and Gross Enrolment Ratio statistics. Montreal, Canada.*
- *Government of India. (2023). Economic Survey 2022–23. Ministry of Finance, Government of India.*