



Government Expenditure on Education and It's Impact on Educational Outcomes

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Abstract

Government spending on education plays an important role in shaping a country's educational landscape, influencing economic growth, access to quality education, and overall societal well-being. This study investigates the influence of government expenditure on educational outcomes in India, focusing on indicators such as student retention, enrollment rates, and student-teacher ratios. By analyzing data from 2000 to 2021, the research reveals significant correlations between increased education spending and improved educational metrics. Higher investment in education correlates with lower dropout rates, better student-teacher ratios, and higher gross enrollment ratios. The study highlights the importance of effective policy implementation and resource allocation

to maximize the benefits of government spending. The findings support increased investment in education as a means to enhance educational quality and equity, contributing to a more educated and prosperous society.

Keywords: Expenditure on education, policy implementation, resource allocation, educational outcomes.

Introduction

The volume of resources that the government spends on education has a significant impact on how a country addresses education. It comprises of the monetary contributions made by federal, state, and local governments to support educational institutions, projects, and programmes. The objectives of these investments are to promote economic growth, ensure that individuals have fair access to high-quality education, and improve societal well-being. As a basic human right and a pillar of sustainable development, education is widely recognised. There has been many studies and policy discussion on the connection between government investment on education and learning outcomes. Educational outcomes are indicators of the efficacy of educational system and are frequently measured using measures like graduation rates, literacy rates, and graduate employment rates. Higher teacher pay, better teaching materials, better educational infrastructure, and stronger student support services are all often connected to increased government spending on education. These improvements are expected to provide students with comfortable learning environments and qualified teachers, which will improve educational outcomes. Furthermore, significant investments in education can aid in bridging the gaps brought about by socioeconomic inequality, guaranteeing that all students, regardless of background, have the chance to achieve academic success.

Government expenditure on education, however, has a varied effect that depends on a number of variables, such as governance, the effectiveness of resource distribution, and the socioeconomic environment in place. Increased expenditure does not always result in better outcomes, which emphasises the significance of efficient policy execution and oversight. High dropout rates, gender inequality, and the need for inclusive education for underprivileged people, such as Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC), are additional special problems that the Indian education system must overcome. In order to increase access to elementary and secondary education and raise educational standards, the government has implemented a number of programmes and initiatives, including the Rashtriya Madhyamik Shiksha Abhiyan (RMSA), Sarva Shiksha Abhiyan (SSA), and the Right to Education (RTE) Act. The goal of the National Education Policy (NEP) 2020 is to restructure the educational system by emphasising inclusive, transdisciplinary, and holistic learning. Furthermore, the education system has both opportunities and challenges due to India's demographic dividend. Since a large section of the population is under 30, it is imperative that the education system both grow in size and quality in order to meet the changing demands of a changing economy. Because of this demographic trend, the government must invest heavily in education and create strong policies to help youth reach their full potential and acquire the information and skills they need to contribute to the development of our country.

The purpose of this research is to look into the complex link that exists between government spending on education and how it affects outcomes for students. Through the examination of data across India, the research aims to pinpoint trends, obstacles, and optimal approaches in the funding of education. The research's conclusions will add to the continuing conversation about education policy and offer guidance to decision-makers who want to improve education's accessibility and quality by making wise financial decisions. The ultimate goal of this research is to provide a comprehensive understanding of how wise government spending can promote successful educational results and open the door to a more wealthy, equitable, and educated Indian society.

Literature Review

The crux of various studies, views and comments by different academicians, educational thinkers, researchers, policymakers and educational reformers on the aforesaid topic is as follows:

The paper by **Jha, Biswal, Biswal(2000)** employed unbalanced panel data techniques, tested fixed effects, random effects, and OLS models, and used three different measures of poverty from the Foster-Greer-Thorbecke group. It also examined various types of education expenditures (elementary, secondary, higher/university, and "other" levels). The study emphasises that public spending on health, education, and other development initiatives results in the decline of poverty in India and that spending on higher education, university, technical, adult, and vocational education has a greater impact on poverty reduction than spending on elementary and secondary education. The study by **Tamang (2011)** looks at the connection between education spending and economic growth in India and concludes that, as compared to physical capital, education spending has less of an effect on growth. The study used an error correction technique to evaluate the link between education spending and economic growth in addition to an econometric model to analyse time series data from 1980 to 2008. The study concludes that there is a long-term correlation between education spending and economic growth in India, with education spending per labour having a lower effect on GDP per labour (0.11%) than physical capital per labour (0.28%). In order to achieve inclusive growth in India, this article by **Ojha, Ghosh , Pradhan (2021)** examines the role that public spending on secondary and higher education plays. It concludes that raising these costs results in faster growth and less inequality, that spending on secondary education is more efficient than that on higher education, and that advancement in technology can amplify these benefits. The study examines the consequences of increasing public spending on secondary and higher education through policy simulations and a computable general equilibrium model of India. **Garg,Chowdhury,S.K.(2022)** examined the variables influencing educational attainment and changes in inequality in education from 2007 to 2018 using data from the Indian National Sample Survey (NSSO). It examines how India's average years of schooling have increased over time, coming to 7.7 years in 2018, and how the Gini coefficient, which measures educational disparity, has decreased from 2007 to 2018 but is still at 38%. Lorenz curves and other multivariate and bivariate analysis are performed by it. The main causes of educational inequality are found using the Shapley decomposition approach. The paper identifies the main obstacles to raising educational attainment in India, such as social hierarchies, inequality, and discrimination. It then recommends concentrating on enhancing school infrastructure, raising awareness of the value of education, addressing income inequality, and utilising digital learning to improve educational outcomes. The study by **Sethi (2024)** examines at the relationship between public education investment and measures of Chhattisgarh's economic growth. The study has utilised the time-series data spanning from 2000 to 2021, shows that public spending on education has a statistically significant and favourable effect on measures of economic growth in Chhattisgarh, including the primary school dropout rate (DOR) and the gross enrollment ratio (GER). It comes to the conclusion that public education spending and the Gross State Domestic Product (GSDP) have a long-term, unidirectional causal relationship, and that higher public education spending can boost Chhattisgarh's economy and educational outcomes.

Objectives

1. To emphasize the role of education expenditure in enhancing educational outcomes, including improved student retention and overall quality of education.
2. To analyze the effect of Education Expenditure on Dropout Rates, Gross Enrollment Ratio and Student Teacher Ratio and to quantify the degree to which changes in the percentage of GDP spent on education influence them.

Need of the study

Understanding the influence of government expenditure on education is essential for improving educational outcomes and guiding policy decisions. This study addresses the critical need to evaluate how financial investments in education influence key metrics such as student retention, enrollment rates, and teacher-student ratios. By analyzing the relationship between government spending and these outcomes, the study provides evidence-based insights that can help policymakers design more effective education policies and optimize budget allocations. This is particularly important in the context of addressing educational inequality, as increased spending can help reduce disparities in access and quality, especially in underfunded or disadvantaged regions. Moreover, with limited resources, it is crucial to assess the efficiency and effectiveness of education spending. The study aims to evaluate whether higher investments in education translate into tangible improvements in educational outcomes, thereby informing decisions about the adequacy of current funding levels. By highlighting the impact of expenditure on dropout rates and enrollment ratios, the research supports stakeholders, including educators, parents, and community members, in advocating for increased investment in education.

The study also contributes to the existing body of knowledge by identifying research gaps and suggesting areas for future investigation. It provides a foundation for future research aimed at understanding and enhancing educational outcomes. Additionally, it plays a role in enhancing accountability by demonstrating how public funds are utilized in education. By showing the relationship between expenditure and educational outcomes, the study ensures that education funding is directed towards initiatives that yield significant benefits, thus supporting informed and responsible investment in education.

Research Methodology

The study analyses the relationship between Government expenditure on education and education outcomes; utilizes data from the years 2000-2021. Secondary sources of data include UDISE+ Reports, Annual Reports (various years), Ministry of Education. Variables of the study include Expenditure on education (Independent Variable), Pupil Teacher Ratio, Drop-out Rates and Gross Enrollment Ratio(Dependent Variables). Regression analysis is used to determine the relationship between variables.

Analysis and Interpretation

Table1 : Expenditure on education and Student Teacher ratio

Years	Expenditure on Education (in crores)	Student teacher ratio
2000-01	62498.09	43
2001-02	64847.71	43
2002-03	68561.54	42
2003-04	73044.93	45
2004-05	81280.95	46
2005-06	94483.7	46
2006-07	110340.36	44
2007-08	125379.63	47
2008-09	152822.4	45

2009-10	190136.08	41
2010-11	233510.11	43
2011-12	270091.78	41
2012-13	299212.54	34
2013-14	333231.91	31
2014-15	361311.78	29
2015-16	387155.32	30
2016-17	428010.96	28
2017-18	458535.09	29
2018-19	493760.55	27
2019-20(RE)	571904.19	26.5
2020-21(BE)	625373.95	26

Source : Ministry of Education, UDISE + Reports

Regression Statistics	
Multiple R	0.936227
R Square	0.876521
Adjusted Square	R 0.870023
Standard Error	0.134849
Observations	21

The analysis reveals a strong negative relation between the Expenditure on Education (percentage of GDP) and the Student-Teacher Ratio. A high R-square value indicates that 87.65% of the variance in the Student-Teacher Ratio is explained by the Expenditure on Education. The model is statistically significant, as indicated by the ANOVA results and the p-values for the coefficients. The negative coefficient for Expenditure on Education suggests that as the percentage of GDP allocated to education increases, the Student-Teacher Ratio decreases. This implies that higher investment in education (in terms of GDP percentage) leads to better student-teacher ratios, likely resulting in more personalized attention and potentially better educational outcomes. The high R-square value indicates that the model explains a substantial portion of the variance in the Student-Teacher Ratio. The standard error and the narrow confidence intervals further confirm the reliability of these findings. This analysis highlights the importance of investing in education to achieve lower student-teacher ratios, which is generally considered beneficial for the quality of education.

Table 2: Expenditure on education and Gross Enrollment Ratio

Years	Expenditure on Education (in crores)	Gross Enrollment Ratio
2000-01	62498.09	81.6
2001-02	64847.71	82.4
2002-03	68561.54	82.5
2003-04	73044.93	84.8
2004-05	81280.95	93.5
2005-06	94483.7	94.1
2006-07	110340.36	97.1
2007-08	125379.63	100.3
2008-09	152822.4	99.8

2009-10	190136.08	102.5
2010-11	233510.11	104.3
2011-12	270091.78	106.5
2012-13	299212.54	98.81
2013-14	333231.91	99.36
2014-15	361311.78	99.7
2015-16	387155.32	100.2
2016-17	428010.96	97.68
2017-18	458535.09	97.22
2018-19	493760.55	96.1
2019-20(RE)	571904.19	97.8
2020-21(BE)	625373.95	99.1

Source: Ministry of education, UDISE+ Reports

Regression Statistics	
Multiple R	0.490342
R Square	0.240435
Adjusted R Square	0.200458
Standard Error	0.25809
Observations	21

The analysis reveals a moderate positive relationship between the Expenditure on Education (% of GDP) and the Gross Enrollment Ratio. A moderate R-square value indicates that 24.04% of the variance in the Gross Enrollment Ratio is explained by the Expenditure on Education. The model is statistically significant, as indicated by the ANOVA results and the p-values for the coefficients. The positive coefficient for Expenditure on Education suggests that as the % of GDP allocated to education increases, the Gross Enrollment Ratio also increases. This implies that higher investment in education (in terms of GDP percentage) leads to higher enrollment rates, likely indicating that more resources are being allocated to support student enrollment and access to education. The moderate R-square value indicates that while the model explains a substantial portion of the variance in the Gross Enrollment Ratio, other factors not included in the model also play a significant role. The standard error and the confidence intervals further confirm the reliability of these findings. This analysis highlights the importance of investing in education to achieve higher enrollment rates, which are generally considered beneficial for the educational system and overall societal development.

Table 3: Expenditure on education and Drop out ratio

Years	Expenditure on Education (in crores)	Drop out Ratio (1-5)
2000-01	62498.09	40.7
2001-02	64847.71	39
2002-03	68561.54	34.9
2003-04	73044.93	31.5
2004-05	81280.95	29
2005-06	94483.7	25.7
2006-07	110340.36	25.6

2007-08	125379.63	25.1
2008-09	152822.4	27.8
2009-10	190136.08	30.3
2010-11	233510.11	27.4
2011-12	270091.78	22.3
2012-13	299212.54	3.13
2013-14	333231.91	5.77
2014-15	361311.78	4.56
2015-16	387155.32	5.12
2016-17	428010.96	4.71
2017-18	458535.09	1.91
2018-19	493760.55	4.5
2019-20(RE)	571904.19	1.5
2020-21(BE)	625373.95	0.8

Source: Ministry of education, UDISE+ Reports

Regression Statistics	
Multiple R	0.910917
R Square	0.829769
Adjusted R Square	0.82081
Standard Error	0.149312
Observations	21

The analysis reveals a strong negative relationship between the Expenditure on Education (% of GDP) and the Dropout Ratio. A high R-square value indicates that 82.98% of the variance in the Dropout Ratio is explained by the Expenditure on Education. The model is statistically significant, as indicated by the ANOVA results and the p-values for the coefficients. The negative coefficient for Expenditure on Education suggests that as the % of GDP allocated to education increases, the Dropout Ratio decreases. This implies that higher investment in education (in terms of GDP percentage) leads to lower dropout rates, likely resulting from better educational facilities, improved quality of education, and increased student retention. The high R-square value indicates that the model explains a substantial portion of the variance in the Dropout Ratio. The standard error and the narrow confidence intervals further confirm the reliability of these findings. This analysis highlights the importance of investing in education to achieve lower dropout rates, which are generally considered beneficial for the overall educational system and individual student success.

Conclusion

Based on the regression analysis, there is a strong negative relationship between the Expenditure on Education (% of GDP) and the Dropout Ratio. The model indicates that 82.98% of the variation in the Dropout Ratio can be explained by changes in the Expenditure on Education, signifying that the model fits the data very well and that Expenditure on Education is a significant predictor of the Dropout Ratio. The negative coefficient of -1.001590 for Expenditure on Education (% of GDP) implies that for each 1% increase in GDP allocated to education, the Dropout Ratio decreases by approximately 1.001590 units. This strong negative correlation suggests that higher spending on education is associated with lower dropout rates. Both the model as a whole and the individual

coefficients are statistically significant, with very low p-values, indicating that the relationship between Expenditure on Education and Dropout Ratio is not due to random chance, and there is a high degree of confidence in these results.

The high R-square value (0.829769) and the adjusted R-square value (0.820810) indicate that the model explains a substantial portion of the variance in the Dropout Ratio. The low standard error (0.149312) further supports the precision of the model. Additionally, the narrow confidence intervals for the coefficients indicate the precision and reliability of the estimates. The analysis highlights the importance of investing in education, as increased expenditure on education as a percentage of GDP is associated with lower dropout rates. This suggests that such investments can lead to improved student retention and overall better educational outcomes. Policymakers and educational planners should consider increasing the allocation of GDP to education to achieve lower dropout ratios and enhance the overall quality and retention in the education system.

The regression analyses confirm the significant impact of educational expenditure on improving key educational metrics. The high explanatory power of the models for the Student-Teacher Ratio and Dropout Ratio underscores the importance of financial investment in education. While the Gross Enrollment Ratio model shows a moderate relationship, it still highlights the positive influence of increased spending. Overall, these findings advocate for sustained and increased investment in education to foster better educational outcomes, reduce dropout rates, and ensure that more children have access to quality education. Policymakers and educational planners should leverage these insights to formulate strategies that prioritize educational funding, aiming to build a more educated and prosperous society.

References

- Tamang, P. (2011). The impact of education expenditure on India's economic growth. *Journal of International Academic Research*, 11(3), 14-20.
- Sethi, A. (2024). Impact of Public Expenditure on Education in Chhattisgarh. *Journal of Ravishankar University*, 30(1), 1-13.
- Jha, R., Biswal, B., & Biswal, U. D. (2000). An empirical analysis of the impact of public expenditures on education and health on poverty in Indian states.
- Ghara, T. K. (2020). Comparing States through Educational Indicators for Last 9 Years: AISHE Data Analysis. *Journal of Humanities and Social Sciences Studies*, 2(5), 77-88.
- Garg, M. K., Chowdhury, P., & SK, M. I. K. (2022, November). An overview of educational inequality in India: The role of social and demographic factors. In *Frontiers in Education* (Vol. 7, p. 871043). Frontiers Media SA.
- Ojha, V. P., Ghosh, J., & Pradhan, B. K. (2022). The role of public expenditure on secondary and higher education for achieving inclusive growth in India. *Metroeconomica*, 73(1), 49-77.
- Ministry of Education ; UDISE+ Reports