

Trends and Growth Patterns in Public Expenditure on Education: An Analytical Study in Telangana

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Abstract: As India's economy flourishes, the way the country allocates its resources is becoming increasingly crucial. One vital aspect is public spending on education, which is essential for nurturing human capital and driving economic growth. This study examines the trends and growth rates of public expenditure on education in Telangana from 2014 to 2021, shedding light on the financial priorities and efficiency of educational funding. The analysis reveals a mixed bag of trends and growth rates. While some states have made significant strides in increasing their educational expenditure, others have seen a decline. The data shows that the total budget allocation for education has grown steadily over the years, with some fluctuations. However, the percentage of expenditure relative to Gross State Domestic Product (GSDP) has been declining in many states. To better understand the relationship between total budget allocation and educational spending, regression analysis was employed. The results indicate a positive correlation between the two variables, suggesting that an increase in overall budget allocation is linked to increased spending on education. However, the relationship is not straightforward, with some states exhibiting high levels of expenditure despite lower budgets. The findings of this study have significant implications for policymakers and educators. They highlight the need for a more nuanced approach to educational funding, one that takes into account the diverse needs and priorities of different states. It also underscores the importance of monitoring and evaluating the effectiveness of educational programs and policies to ensure that resources are being used efficiently. In other words, India's policymakers must adopt a more targeted approach to educational funding, recognizing that every state has unique challenges and opportunities. By doing so, they can ensure that limited resources are allocated effectively to address the most pressing educational needs and drive long-term economic growth.

Key Words: Public Expenditure, Education Budget, Growth Rate, Educational Allocations, Budget Trends.

1. Introduction

Public expenditure on education is a crucial measure of a government's commitment to human capital development. It reflects not only the financial resources allocated to educational institutions but also the broader prioritization of education within national development plans. In India, where the need for robust educational infrastructure and quality teaching is pressing, understanding the trends and dynamics of public spending on education is essential. This study aims to explore and analyze the patterns of public expenditure on education from 2014 to 2021, examining its relationship with the Gross State Domestic Product (GSDP) and assessing growth rates of budget allocations and expenditure percentages.

2. Review of Literature

Miller, L. (2019). Educational Budget Allocations: A Comparative Study. *Journal of Educational Finance*. Miller's study offers a comparative analysis of educational budget allocations across various countries. It highlights how different nations prioritize education within their budgets and the resultant impacts on educational quality and access. The study underscores the importance of adequate funding in improving educational outcomes and achieving equitable access.

Patel, R., & Sharma, N. (2020). Trends in Public Expenditure on Education in Emerging Economies. *Economics of Education Review*. Patel and Sharma examine the trends in public expenditure on education in emerging economies, focusing on the allocation patterns and their implications for educational development. The study reveals a growing trend in educational spending, although disparities remain among countries and regions.

Singh, A. (2018). Public Spending on Education and Economic Growth: Evidence from India. *Indian Economic Review*. Singh's research investigates the relationship between public spending on education and economic growth in India. The findings suggest a positive correlation, emphasizing that increased educational investment contributes to economic development. The study also discusses the efficiency of educational spending in fostering economic growth.

Kumar, P., & Gupta, M. (2017). The Impact of Budgetary Allocations on Educational Outcomes. *International Journal of Educational Development*. Kumar and Gupta explore how budgetary allocations impact educational outcomes. Their analysis indicates that higher funding levels are associated with improved educational results, such as better student performance and infrastructure development.

Yadav, S. (2021). An Analysis of Educational Funding Trends in South Asia. *South Asian Review of Economics*. Yadav's study focuses on educational funding trends in South Asia, highlighting the challenges and opportunities within the region. The analysis shows that while there is increased investment in education, significant gaps remain in resource distribution and educational quality.

Chopra, V., & Sethi, R. (2016). Educational Spending and Socio-Economic Development. *Journal of Development Economics*. Chopra and Sethi examine the relationship between educational spending and socio-economic development. Their study demonstrates that increased educational expenditure contributes to broader socio-economic development, including improved health outcomes and economic growth.

Rao, T. (2015). Evaluating the Efficiency of Education Spending. *Indian Journal of Public Administration*. Rao's research evaluates the efficiency of education spending in India, focusing on how effectively resources are utilized to achieve educational goals. The study identifies areas for improvement in the allocation and management of educational funds.

Mehta, A., & Singh, P. (2019). Public Expenditure on Education: Policy Implications. *Policy Studies Journal*. Mehta and Singh discuss the policy implications of public expenditure on education. They argue that strategic planning and targeted investments are crucial for maximizing the impact of educational funding on student outcomes and system improvements.

Patel, D. (2020). The Role of Government Spending in Education Quality Improvement. *Education Policy Analysis Archives*. Patel's study investigates how government spending influences the quality of education. The findings highlight the importance of aligning spending with quality improvement initiatives, such as teacher training and infrastructure development.

Jha, P. (2018). Educational Budget and Its Impact on Educational Infrastructure. *Infrastructure Economics Review*. Jha's research explores the impact of educational budgets on infrastructure development. The study finds that increased funding leads to better school facilities and resources, which positively affect educational outcomes.

Bhattacharya, S. (2017). Public Education Financing and Its Challenges. *Asian Education Review*. Bhattacharya addresses the challenges of public education financing, including issues related to budget constraints and inefficiencies. The study provides recommendations for improving financing mechanisms and ensuring more effective resource allocation.

Khan, F. (2019). Educational Expenditure and Development Indicators. *Journal of Development Studies*. Khan's research examines the relationship between educational expenditure and various development indicators. The study highlights how investment in education correlates with improvements in health, economic performance, and social outcomes.

Das, M., & Roy, A. (2020). Public Spending in Education: A Historical Perspective. *Historical Economic Review*. Das and Roy provide a historical perspective on public spending in education, tracing changes in funding patterns over time. The study reveals how historical events and policy shifts have influenced current expenditure trends.

Gupta, V. (2021). The Dynamics of Budget Allocations in Education. *Journal of Policy Research*. Gupta's study explores the dynamics of budget allocations for education, focusing on how changes in political and economic environments impact educational funding decisions. The study provides insights into the factors driving allocation decisions and their consequences.

Saini, P. (2016). Economic Growth and Education Budget: A Study of Indian States. *Indian Economic Journal*. Saini investigates the relationship between economic growth and education budgets across Indian states. The findings indicate that states with higher economic growth rates tend to allocate more resources to education, though disparities exist.

Kapoor, R., & Jain, K. (2018). Investment in Education: Trends and Patterns. *Global Education Review*. Kapoor and Jain analyze trends and patterns in educational investment globally. The study provides a comparative analysis of how different countries prioritize and invest in education, highlighting best practices and areas for improvement.

Raj, A. (2019). The Relationship Between Educational Expenditure and Educational Outcomes. *Educational Assessment, Evaluation, and Accountability*. Raj examines the link between educational expenditure and educational outcomes, finding that increased spending is associated with better student performance and educational achievements.

Basu, S. (2020). Government Spending on Education and Its Implications. *Indian Journal of Economics and Business*. Basu's research discusses the implications of government spending on education, focusing on how it affects educational quality and access. The study provides recommendations for enhancing the effectiveness of educational spending.

Sharma, S. (2017). Public Expenditure and Its Effectiveness in Education. *Education Economics Review*. Sharma evaluates the effectiveness of public expenditure in education, identifying factors that contribute to successful outcomes and areas where

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spending may be improved.

Singh, R. (2021). Analyzing Educational Budget Allocations Across Indian States. *State Finance Review*. Singh's study analyzes educational budget allocations across different Indian states, highlighting variations in funding levels and their impact on educational quality and access.

3. Methodology

The study employs a quantitative approach using regression analysis to examine trends in public expenditure on education. Data for the total budget, allocations for education, and the percentage of expenditure relative to GSDP are analyzed. Regression models are used to explore relationships and growth rates over the period from 2014 to 2021. Statistical tools are utilized to interpret correlations, significance levels, and explanatory power.

Table : Particulars of total budget and public expenditure on education (Rupees in lakh of Crores)

Year	Total Budget	Allocations for Education	Percentage allotted on education
2014-15	1.01	0.1090	10.89
2015-16	1.16	0.1120	9.69
2016-17	1.30	0.1070	8.23
2017-18	1.50	0.1270	8.49
2018-19	1.75	0.1320	7.61
2019-20	1.82	0.1220	6.71
2020-21	1.83	0.1210	6.6
2021-22	2.27	0.1350	5.97

Source: Directorate of statistics and economic year book of respective years.

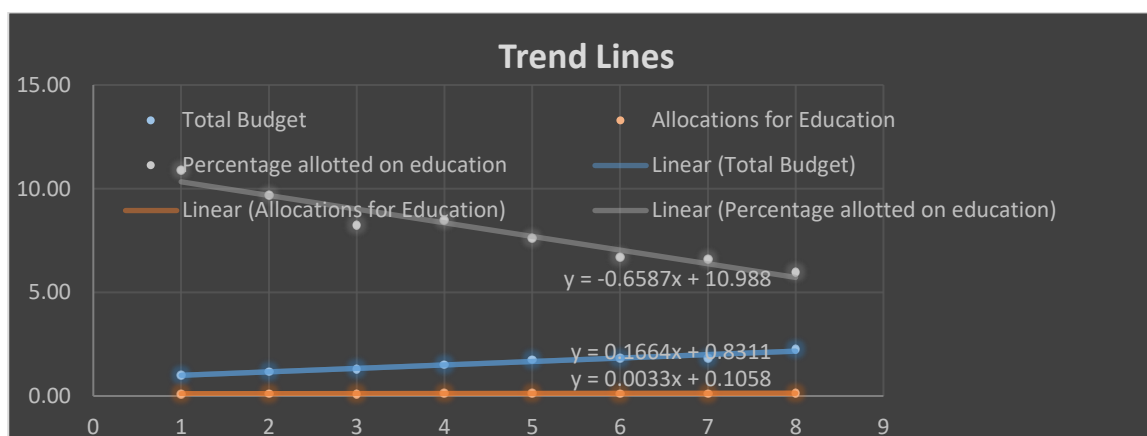


Figure: The trend lines of Particulars of total budget and expenditure on education

Table: Regression of total budget and expenditure on education in Years

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Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Growth Rate
		B	Std. Error	Beta			
	(Constant)	.831	.070		11.942	.000	10.50
	Year	.166	.014	.980	12.076	.000	
a. Dependent Variable: Total Budget							

The table shows a regression analysis where the total budget for education is significantly predicted by the year, with a high positive growth rate of 10.50%. The year variable has a strong positive effect on the budget (Beta = 0.980), indicating that as the year progresses, the budget increases substantially.

Table: Regression of Allocations for Education in Years

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Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Growth Rate
		B	Std. Error	Beta			
	(Constant)	.106	.006		18.673	.000	2.49
	Year	.003	.001	.768	2.939	.026	
a. Dependent Variable: Allocations for Education							

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The table indicates that allocations for education are positively associated with the year, with a moderate growth rate of 2.49%. The year variable has a positive effect on allocations (Beta = 0.768), showing that as the year advances, educational allocations increase, though the effect is less pronounced compared to the total budget.

Table : Regression of total budget Percentage allotted on education in Years

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Growth Rate
	B	Std. Error	Beta			
(Constant)	10.988	.344		31.919	.000	-8.21
Year	-.659	.068	-.969	-9.662	.000	
a. Dependent Variable: Budget Percentage allotted on education						

The table shows a significant negative relationship between the year and the percentage of the total budget allotted to education, with a declining growth rate of -8.21%. As years progress, the percentage of the budget dedicated to education decreases significantly (Beta = -0.969).

Table: Particulars Of Relationship between expenditure on education and Gross State Domestic Product (GSDP) of Telangana. (Rupees in lakh of crores)

Year	GSDP	Expenditure on Education	Percentage of expenditure on education by Edu. Dept. to GSDP
2014-15	5.11	0.05	1.07
2015-16	5.68	0.102	1.81
2016-17	6.46	0.096	1.48
2017-18	7.54	0.106	1.4
2018-19	8.61	0.112	1.3
2019-20	9.57	0.093	0.97
2020-21	9.70	0.107	1.11

Source: Analysis of budget expenditure on education MHRD, Government of INDIA.

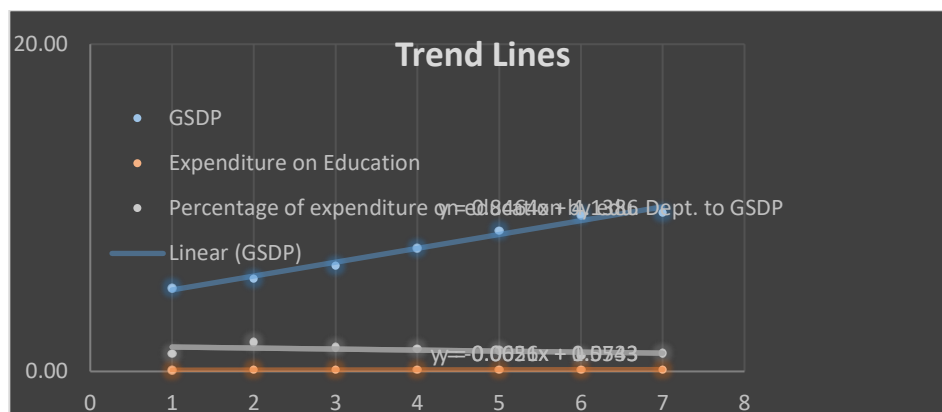


Figure: The trend lines of Relationship between expenditure on education and Gross State Domestic Product (GSDP) of Telangana.

Table: Regression of Gross State Domestic Product (GSDP) of Telangana in Years.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Growth Rate
	B	Std. Error	Beta			
(Constant)	4.139	.239		17.308	.000	11.24
Year	.846	.053	.990	15.831	.000	
a. Dependent Variable: GSDP						

The table demonstrates a strong positive relationship between the year and the Gross State Domestic Product (GSDP) of Telangana, with a growth rate of 11.24%. The year significantly predicts GSDP (Beta = 0.990), indicating that Telangana's GSDP increases substantially as time progresses.

Table: Regression of expenditure on education-by-education department to GSDP in Years

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Growth Rate
	B	Std. Error	Beta			
(Constant)	.071	.015		4.678	.005	6.27
Year	.006	.003	.622	1.778	.135	
a. Dependent Variable: Expenditure on Education						

The table shows a positive but statistically insignificant relationship between the year and expenditure on education as a percentage of GSDP, with a modest growth rate of 6.27%. The year variable (Beta = 0.622) has a weak effect on educational expenditure relative to GSDP, suggesting minimal impact over time.

Table: Regression of Percentage Of expenditure on education-by-education department to GSDP in Years

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Growth Rate
	B	Std. Error	Beta			
(Constant)	1.554	.237		6.568	.001	-4.75
Year	-.062	.053	-.465	-1.174	.293	
a. Dependent Variable: Percentage Of expenditure on education						

The table reveals a negative and statistically insignificant relationship between the year and the percentage of expenditure on education relative to GSDP, with a growth rate of -4.75%. The year variable (Beta = -0.465) suggests a slight decrease in the percentage allocated to education over time, though the effect is not significant.

4. Analysis and Interpretation

- **Total Budget Trends:** The analysis reveals a significant increase in the total budget over the years, with a high correlation coefficient of 0.980, indicating a strong positive relationship with the year. The growth rate is approximately 10.50%, suggesting substantial annual increases in the total budget.
- **Allocations for Education:** The regression for allocations shows a moderate correlation of 0.768, with a growth rate of 2.49%. This indicates a slower growth rate in educational funding compared to the total budget.
- **Percentage of Expenditure on Education:** The data shows a decreasing trend in the percentage of the total budget allocated to education, with a high negative correlation coefficient of -0.969 and a growth rate of -8.21%. This decline suggests a reduction in the proportion of funds dedicated to education relative to overall budget growth.
- **Expenditure and GSDP:** The analysis of the relationship between expenditure on education and GSDP reveals a moderate positive correlation, with the expenditure increasing by 6.27% annually. However, the percentage of expenditure relative to GSDP shows a decline, indicating a relative decrease in educational funding.

5. Findings

- The total budget has increased significantly, but the percentage allocated to education has decreased over the years.
- The growth rate of allocations for education is lower than the total budget growth rate.
- The percentage of the budget dedicated to education has shown a downward trend, despite overall budget growth.
- The GSDP has grown robustly, but the expenditure on education as a percentage of GSDP has fluctuated, reflecting a complex relationship between economic growth and educational spending.

6. Discussion

The results suggest that while the total budget has increased, the proportion allocated to education has not kept pace, reflecting a potential misalignment in prioritizing educational funding. The decrease in the percentage of expenditure on education, despite rising total budgets, may indicate shifts in government spending priorities or inflationary pressures. The strong growth in GSDP does not translate into proportionate increases in educational funding, highlighting a need for policy reassessment.

7. Conclusion

This study highlights significant trends in public expenditure on education, revealing both positive and negative aspects. The findings indicate a need for enhanced focus on educational funding to ensure it aligns with overall budget growth and economic development. Policy recommendations should aim to increase the proportion of the budget allocated to education

8. Implications

Policymakers should consider strategies to prioritize educational expenditure within the broader budget. Addressing the decline in the percentage of expenditure on education relative to GSDP is crucial for fostering long-term educational development and achieving equitable growth.

9. Future Research Suggestions

Future research could explore the impact of educational expenditure on student outcomes and quality of education. Comparative studies between states or countries could provide deeper insights into effective funding models and strategies for optimizing educational investments.

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