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Research Article

Analysis Of Budgeted Expenditure Of Education And Its Impact On Literacy Rate In Sikkim State

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ABSTRACT

A country with a higher percentage of literacy often performs better in terms of employment prospects, social progress, and the living standards of its citizens. Education is crucial for socio-economic progress, enhancing productivity and driving significant social and economic growth. Acknowledging its importance, the state government dedicates a substantial portion of its budget to education, allocating 20% for this purpose, as reported in the Education Department's Annual Report for 2020-21, Government of Sikkim. The purpose of this study is to examine on budgeted expenditure of education and its impact on literacy rate in Sikkim state. Thus, this research combines descriptive and inferential methods to provide an in-depth analysis. The state has a total of 1289 schools, according to data from the Department of School Education and Literacy, which is part of the Ministry of Education, Government of India (2018–19). The literacy rates in Sikkim and India offers valuable insights into developmental trends. The results highlights that there is a statistically significant and positive linear relationship between literacy rate and budgeted expenditure. However, investing in infrastructure, teacher training, and curriculum development can substantially improve literacy rates and promote equal opportunities throughout the diverse regions of the state.

Keywords: Budgeted Expenditure, Literacy Rate, Regression Analysis, Sikkim

Introduction

Education adds value to individuals' lives in various aspects, empowering them with knowledge, enhancing skills, and broadening perspectives. It is vital for promoting social equality and improving all three domains of society. Individuals' valuable skills and knowledge develop their character throughout time, providing a strong basis for the development of ethical and moral principles. In order to prepare young minds for challenges and possibilities in the future, it acts as the main channel for imparting knowledge, skills, and values.
Since its integration with India in 1975, Sikkim has experienced rapid advancements in education. This modern educational drive has facilitated the rise of a diverse and educated middle class, transcending traditional barriers of caste, ethnicity, language, and religion. The educational landscape of Sikkim comprises a total of 768 government schools, 417 private schools, 7 central schools, and 97 monastic schools.
The school education system in Sikkim is divided into different level, they are Primary School (Class I to Class V), Junior High School (Class I to Class VIII), Secondary School (Class I to Class X) and Senior Secondary School (Class I to Class XII). Admission procedures in Sikkim schools commence at the age of five, with students progressing from primary to secondary education, culminating in a twelve-year schooling cycle before college enrollment. Sikkim conducts two board examinations, one at the conclusion of class X and the other at the conclusion of class XII, with schools affiliated either with the ICSE or CBSE boards. English serves as the primary medium of instruction across schools in Sikkim. Recognizing the utmost importance of education, the state government allocates a significant portion of its budget towards the sector, with 20% utilized for this purpose according to the Education Department's Annual Report for the year 2020-21, Government of Sikkim.
A geographic region like Sikkim as its literacy rate provides an important measure of the advancement of society and effectiveness of its educational system. For the purpose of formulating effective policies, it is essential to understand the relationship which exists between allocated funding and academic results,

particularly within the education sectors. This study explores the dynamic relationship between budget allotments and literacy initiatives that assessing the impact of all of these initiatives on Sikkim's rates of educational improvements. Through a study of the effectiveness of distributing funds structures, it aims to provide possibilities for improving educational availability quality, and diversity, thereby encouraging equitable development in the region.

Review of Literature

For this study, various articles and research papers from academic journals as well as relevant publications have been reviewed. These sources cover various aspects crucial to the foundational development of the research. Important reviews are as follows.

Gupta U Amita (2021) in her study *"Education Budget and Socio Economic Development: An Analytical Study"* examined Maharashtra social and economic development in relation to the state education budget. The study uses secondary data as its foundation. The findings of this study indicate that the Maharashtra government is prioritizing the enhancement of education policies and has allocated 6% more funds for education than it did in the previous fiscal year, 2019–20 and is giving priority to improving education policies. The understanding of how optimal education spending consistently advances the state's socioeconomic development is aided by this study.

Roy Joyshree (2020) in his study *"An Analysis of the Education Sector Budget of India 2020-2021"* where he analyzed graphical representations and empirical methods to study the financial allocations financial allocations for education during that fiscal year. The study focused on extracting insights from real-world scenarios rather than abstract concepts, employing an online survey method that involved professionals and students in data collection. This survey covered both qualitative and quantitative dimensions.

Arman Arman, BudhiPurwandaya, and AsepSaaefuddin (2020) *"The Impact of Quality of Education and Higher Education on Economic Growth"* they examined the impact of education quality on economic growth, highlighting its foundational role in economic development. They emphasized the crucial role of technological advancement in bolstering economic progress. The study aimed to analyze the correlation between education and economic growth specifically in Indonesia. The findings unequivocally demonstrate that a more educated populace correlates with enhanced economic growth within a given region. This research encompassed data analysis across 33 provinces in Indonesia from 2013 to 2015, employing a Data Analytical Approach.

Khatun Ayesha and Dar Nabi Sajad (2019) *"Management education in India: the challenges of changing scenario"* the study focuses on examining the development of business schools (B-Schools) in India and the competitive environment they operate in. It reveals that despite a notable increase in the quantity of B-Schools in the country, there has been insufficient emphasis on maintaining quality standards. This paper addresses various significant challenges faced by Indian B-Schools. Additionally, it observes a disparity in the distribution of B-Schools across different states and regions in India, which closely aligns with levels of industrialization.

Solanki P Piyush (2019) *"Education in India: Emerging Issues, Challenges"* the study mainly focused on the overall performance of higher education system in India. The study aims to identify new issues and challenges in India's higher education sector. In the end, the study comes to the conclusion that dealing with these issues calls for all-encompassing solutions that incorporate the demands of all stakeholders, including parents, the government, businesses, and educational institutions.

Subba Maya Nar and Bhutia Yodida (2016) in their study *"Status of Elementary in the State of Sikkim, India"* explored the challenges faced by government elementary schools. Employing a descriptive approach, they found that students are admitted year-round without any screening process. The recruitment of teachers is often done on a temporary basis, leading to a lack of dedication and a tendency to seek better opportunities elsewhere. Additionally, the majority of these teachers are untrained and lack motivation, which ultimately compromises the quality of education provided to students who require a solid foundation of knowledge.

Gakhar Kamlesh and Kour Harjeet (2012) in their study *"Scenario of Present Education System: A Comparative Study of Haryana and Its Neighbouring States"* has examined the education system of Haryana was analysed with a comparative focus on its neighbouring states.

Their study sheds light on various aspects of educational attainment, providing valuable insights for experts and researchers to assess progress towards goals and identify areas requiring attention. Additionally, the research includes a comparative examination of literacy rates and the number of literate individuals across these states.

Kanyongo, Certo, and Brown (2006) *"Using regression analysis to establish the relationship between home environment and reading achievement: A case of Zimbabwe"* they investigated the correlation between home environment elements and reading performance in Zimbabwe. They analysed data from the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) using linear regression within structural equation modelling via AMOS 4.0. Their findings revealed that socioeconomic status (SES) proxy emerged as the most influential predictor of reading success.

Statement of the Problem

Since Sikkim's integration with India in 1975, the government has been prioritizing the development of various sectors, with a particular emphasis on education. This commitment has led to significant progress in the education sector, supported by substantial budget allocations. So, the increased investment has enabled the government to witness enhancements in education quality and so on. The Sikkim government prioritizes education highly, making it a foremost concern among its various sectors. This dedication is apparent through the allocation of resources towards education in budgetary decisions. From a review of literature and many various sources, it is observed that strategic allocation of budgeted expenditure significantly contributes to the advancement. Therefore, the study aims to examine the budgeted expenditure of education and its impact on literacy rates within the state of Sikkim, India. Specifically, the research seeks to analyze how variations in budgeted expenditure levels may impact literacy rates across different regions of Sikkim.

Objectives

- To examine on budgeted expenditure of education and its impact on literacy rate in Sikkim state.

Methodology

Data Sources and Type:

The aim of this study is to examine the budgeted expenditure of education and its impact on literacy rate in Sikkim state. For this study the data has been collected from following secondary source i.e.

- Reserve Bank of India, Government of India.
- Indianstats, Datanet India Private Limited, New Delhi.

Statistical Tools:

In order to enhance comprehension, the study combined descriptive and inferential statistics with averages and regression analysis. These statistical techniques provided a thorough overview and more detailed insights into the data, enabling a deeper analysis of the research findings.

The regression equation is stated as follows:

Y = a+bx+E	
Y	Literacy Rate
a	alpha (Constant)
b	Slope
x	Budgeted expenditure
E	Error term

Limitation:

The study on budgeted expenditure and literacy rates in a state undoubtedly sheds light on the potential correlation between government investment and educational outcomes. However, it's imperative to acknowledge certain limitations inherent in such analyses. Firstly, while budgeted expenditure reflects the overall financial commitment to education, it may not accurately capture the effectiveness of spending due to variations in allocation efficiency and resource distribution across regions or educational sectors. Furthermore, literacy rates, while commonly employed as a measure, might oversimplify educational success by overlooking factors like educational quality, curriculum appropriateness, and socio-economic gaps, which can greatly influence literacy levels. As a result, this study has not examined other aspects of budgeted expenditure and literacy rate.

Results & Discussion

The level of education provided by schools and literacy rates are directly influenced by spending on education, which is crucial for societal progress. This implies that investments in education and literacy-related initiatives play a crucial role in improving overall literacy rates in Sikkim. Additionally, the results highlight the importance of allocating resources effectively to education sectors to foster sustainable development and human capital formation in the region. This finding highlights the importance of government spending in fostering educational development and highlights the potential for targeted investment strategies to improve literacy rates in the region. The results and discussion of the study are provided below:

Table 1. Literacy Rate from 1951 to 2023

Sl. No.	Particular	1951	1961	1971	1981	1991	2001	2011	2023*
1	India	18.33	28.3	34.45	43.57	52.21	64.84	72.99	77.7
2	Sikkim	-	-	17.74	34.05	56.94	68.81	81.42	82.2
	Total	**18.33**	**28.3**	**52.19**	**77.62**	**109.15**	**133.7**	**154.41**	**159.9**
	Average	**9.17**	**14.15**	**26.10**	**38.81**	**54.58**	**66.83**	77.21	**79.95**

Source: Reserve Bank of India, Government of India
****Geeks for Geeks - Sanchaya Education Private Limited***

The data in Table 1 provides details about the literacy rates in Sikkim and India over a number of decades, providing insight into the improvement of education both in these areas. Since 1951, India's literacy rate has shown a steady growing trend, with significant improvements in each of the subsequent decade. It indicates that the quality and accessibility of education are improving gradually across the nation. India's literacy rate has increased significantly from its relatively low 18.33% in 1951 to 77.7% in 2011 and is predicted to reach 77.7% in 2023.

This indicates a sustained effort towards improving education infrastructure, literacy campaigns and socio-economic development. The literacy rate of Sikkim was not documented in 1951 and 1961 because during those periods it was not integrated with India. However, it started being recorded from 1971 onwards. Showing a notable increase from 17.74% to 82.2% in 2023. This portrays a remarkable improvement in literacy within the state, surpassing the national average consistently. Sikkim's relatively smaller population and focused efforts on education could be contributing factors to this rapid increase.

This reflects the nation's commitment to education as a fundamental driver of development. While India's literacy rate has shown steady growth, there might be variations across states and regions. Sikkim's notably higher literacy rate compared to the national average suggests potential variations in education policies, infrastructure, or socio-economic factors at the state level.

The trend indicates that both India and Sikkim are likely to continue their focus on education, aiming for even higher literacy rates in the coming years. However, sustaining and accelerating this progress might require targeted interventions, especially in remote or marginalized communities. The average literacy rate for both India and Sikkim provides a consolidated view of progress over the years. It shows a steady increase, indicating overall improvements in educational opportunities and outcomes.

Moreover the data highlights the importance of continued investment in education infrastructure, teacher training, and educational programs to sustain and accelerate literacy rate growth. While increasing literacy rates is crucial, ensuring the quality of education is equally important. Efforts to improve curriculum standards, teacher training, and learning outcomes should accompany initiatives to boost literacy rates.

Table 2. Literacy percentages in the northeastern states of India from 1951 to 2023

Sl. No.	State	Year							
		1951	1961	1971	1981	1991	2001	2011	2023*
1	Arunachal Pradesh	-	7.13	11.29	25.55	41.59	54.34	65.39	66.95
2	Assam	18.53	32.95	33.94	-	52.89	63.25	72.19	85.9
3	Manipur	12.57	36.04	38.47	49.66	59.89	70.5	79.2	79.85
4	Meghalaya	-	26.92	29.49	42.05	49.1	62.56	74.43	75.48
5	Mizoram	31.14	44.01	53.8	59.88	82.26	88.8	91.33	91.58
6	Nagaland	10.52	21.95	33.78	50.28	61.65	66.59	79.6	80.11
7	Tripura	-	20.24	30.98	50.1	60.44	73.19	87.22	87.75
8	Sikkim	-	-	17.74	34.05	56.94	68.81	81.42	82.42
	Total	**72.76**	**189.24**	**249.49**	**311.57**	**464.76**	**548.04**	**630.78**	**650.04**
	Average	**9.10**	**23.66**	**31.19**	**38.95**	**58.10**	**68.51**	**78.85**	**81.26**

Source: Reserve Bank of India, Government of India
****Geeks for Geeks - Sanchaya Education Private Limited***

This table 2 shows the literacy rates of the North East states of India from 1951 to 2023. The literacy rates of all states have shown a significant increase over the decades, indicating improvements in educational access and quality across the region. There's noticeable diversity in literacy rates among the states. Mizoram consistently tops the chart with the highest literacy rates, followed closely by Tripura and Sikkim. On the other hand, Arunachal Pradesh and Nagaland started with lower literacy rates but have made substantial progress over the years. Some states have experienced rapid growth in literacy rates, particularly Arunachal Pradesh, which has more than doubled its literacy rate since 1951. Mizoram, Manipur, and Tripura also exhibit significant progress. While Assam has shown steady improvement, there seems to be a period of stagnation between 1981 and 1991,

where the literacy rate remained relatively unchanged. The average literacy rate for the North East states has steadily risen from 9.10% in 1951 to 81.26% in 2023, indicating significant progress in education and literacy over the decades.

Overall, the North East states of India have made significant strides in improving literacy rates over the years. Factors such as government initiatives, investments in education, infrastructure development, and community participation have contributed to this positive trend. However, there is still room for improvement, particularly in states with lower literacy rates, to ensure inclusive and comprehensive educational development across the region.

Table 3.

Year	Sikkim Budgeted expenditure (%)	Sikkim Literacy Rate (%)
2000-01	14.2	68.81
2001-02	8	68.81
2002-03	7.6	68.81
2003-04	11.8	68.81
2004-05	8.8	68.81
2005-06	10.4	68.81
2006-07	10.5	68.81
2007-08	9.2	68.81
2008-09	9.7	68.81
2009-10	11.1	68.81
2010-11	13.1	68.81
2011-12	11.1	81.42
2012-13	12.5	81.42
2013-14	13.2	81.42
2014-15	13.1	81.42
2015-16	16	81.42
2016-17	17	81.42
2017-18	16.4	81.42
2018-19	14.50	81.42
2019-20	16.30	81.42
2020-21	16.38	81.42
2021-22	16.4	82.2
2022-23	15	82.2
2023-24	16	82.2

Budgeted expenditure (%) and Literacy Rate in Sikkim from 2000 to 2023

Source: Reserve Bank of India, Government of India

Significance Test*	
Dependent Variable:	Literacy Rate
Independent Variable:	Budgeted expenditure
Level of Significance:	0.05
Confidence Level:	95%
P. Value:	.000
R:	.772
$R^{2:}$	.597

***Computed using secondary data.**

This above computed data represents the results of a regression analysis, examining the relationship between literacy rate (the dependent variable) and budgeted expenditure (the independent variable). This indicates that greater spending on education or related areas normally associated with higher rates of literacy.

There is a statistically significant relationship between budgeted expenditure and literacy rate. The correlation coefficient (R) of 0.772 indicates a strong positive linear relationship between budgeted expenditure and literacy rate. This indicates that the rate of literacy tends to rise in parallel with budgeted expenditure. The coefficient of determination (R^2) is estimated as 0.597 which says that approximately 59.7% of the variability in literacy rate can be explained by variability in budgeted expenditure.

To test the level of significance regression analysis has been conducted. P- Value for the model is estimated as 0.000 which is less than 0.05 level of significance which says that model is significant. The changes in the literacy rate is significantly explained by budgeted expenditure in the school education.

Model*	
The regression model is expressed as: Y = a+bx+E	
Y	Literacy Rate
a	54.12
b	.772
x	Budgeted expenditure
E	4.23
Therefore, Literacy Rate = 54.12 + .772 budgeted expenditure + 4.23	

***Computed using secondary data**

In this above regression model, the dependent variable, which is the literacy rate, is predicted based on the independent variable, budgeted expenditure. The constant term (alpha), denoted by 'a', is 54.12. This constant represents the expected literacy rate when the budgeted expenditure is zero. The slope coefficient (beta), denoted by 'b', is 0.772. This coefficient indicates the change in the literacy rate for a one-unit increase in budgeted expenditure, holding all other variables constant. So, for every one-unit increase in budgeted expenditure, the literacy rate is expected to increase by 0.772 units, assuming all other factors remain constant. The error term (E), denoted by 'E', is 4.23. This term represents the difference between the actual literacy rate and the predicted literacy rate by the model. Therefore, the regression model can be written as Literacy Rate = 54.12 + 0.772 * Budgeted expenditure + 4.23. This equation implies that the literacy rate is predicted to be 54.12 when the budgeted expenditure is zero and increases by 0.772 for every one-unit increase in budgeted expenditure, with an additional error term of 4.23 accounting for unexplained variability.

Table 4. Education Expenditure Ratio to Total Expenditure in India, Sikkim, and Literacy Percentage

Year	Budgeted expenditure (%)		Literacy Rate (%)	
	India	Sikkim	India	Sikkim
2000-01	17.4	14.2	64.84	68.81
2001-02	16.2	8	64.84	68.81
2002-03	15.1	7.6	64.84	68.81
2003-04	12.6	11.8	64.84	68.81
2004-05	12.7	8.8	64.84	68.81
2005-06	14.2	10.4	64.84	68.81
2006-07	14.0	10.5	64.84	68.81
2007-08	13.8	9.2	64.84	68.81
2008-09	14.4	9.7	64.84	68.81
2009-10	15.1	11.1	64.84	68.81
2010-11	16.2	13.1	64.84	68.81
2011-12	16.8	11.1	72.99	81.42
2012-13	16.5	12.5	72.99	81.42
2013-14	16.5	13.2	72.99	81.42
2014-15	16.5	13.1	72.99	81.42
2015-16	16.4	16	72.99	81.42
2016-17	15.6	17	72.99	81.42
2017-18	14.8	16.4	72.99	81.42
2018-19	14.40	14.50	72.99	81.42
2019-20	14.80	16.30	72.99	81.42
2020-21	14.69	16.38	72.99	81.42
2021-22	13.9	16.4	77.7	82.2
2022-23	13.5	15	77.7	82.2
2023-24	13.3	16	77.7	82.2
Average	**14.97**	**12.85**	**69.84**	**75.74**

Source: Reserve Bank of India, Government of India

Table 4 illustrates the proportion of spending on education compared to the total expenditure in India and Sikkim, alongside the corresponding literacy rates. India's expenditure on education as a ratio to its budgeted expenditure fluctuates over the years, ranging from 12.6% (2003-04) to 17.4% (2000-01). The average expenditure on education in India during this period is approximately 14.97%. Sikkim's expenditure on education as a ratio to its budgeted expenditure also varies, with the lowest being 7.6% (2002-03) and the

highest being 17% (2016-17). The average expenditure on education in Sikkim during this period is approximately 12.85%.

India's literacy rate remains relatively stable throughout the years, around 64.84%, until 2011-12. From 2011-12 onwards, there is a notable increase, reaching 77.7% in 2021-22 and remaining consistent thereafter. The average literacy rate for India during this period is approximately 69.84%. Sikkim's literacy rate also shows stability around 68.81% until 2011-12, after which it increases to 82.2% in 2021-22 and remains constant. The average literacy rate for Sikkim during this period is approximately 75.74%.

India's expenditure on education as a percentage of its total expenditure has been gradually decreasing over the years, from around 17.4% in 2000-01 to 13.3% in 2023-24. This trend might raise concerns about the prioritization of education in India. In contrast, Sikkim's expenditure on education shows some fluctuations but generally maintains a higher ratio compared to India. However, it also experiences a slight decline towards the end of the period.

The increase in literacy rates, especially in both India and Sikkim after 2011-12, suggests a possible correlation between increased expenditure on education and literacy improvement. This highlights the importance of investment in education for improving literacy rates. The relatively higher literacy rate in Sikkim compared to the national average indicates the effectiveness of education spending in the state.

Sikkim consistently maintains a higher literacy rate compared to the national average, indicating potential disparities in education infrastructure and policies between Sikkim and other parts of India. Despite fluctuations, Sikkim's expenditure on education as a percentage of its total expenditure is generally lower than the national average, suggesting potential inefficiencies or differences in budget allocation strategies.

Overall, the data highlights the complex relationship between expenditure on education and literacy rates, emphasizing the importance of strategic investment in education to address regional disparities and promote overall societal development.

Table 5. Ratio of education expenditure to the overall expenditure in the northeastern states of India

Year	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
2000-01	6.4	25.5	20.2	16.6	16.2	13.8	14.2	19.3
2001-02	13.3	21.9	13.7	17.9	16	11	8	18.6
2002-03	12.1	22.4	13.3	15.3	14.5	11	7.6	19.2
2003-04	9.1	22.3	13.1	15.2	12	10.8	11.8	18.3
2004-05	10.7	17	15.3	15	13.8	11	8.8	20
2005-06	9.9	20.8	15.4	15.5	13.4	11.6	10.4	15.3
2006-07	10.7	20.4	11.9	14.1	13.8	12.3	10.5	15.9
2007-08	10.8	20.1	14.2	15.5	13.2	11.4	9.2	15.1
2008-09	10.5	16.2	11.8	15.7	12.9	10.6	9.7	14.4
2009-10	9	13.8	11.6	14.3	14.4	10	11.1	14.7
2010-11	5.9	19	11.5	18	14.7	13.5	13.1	15.5
2011-12	7.9	18.9	10.9	17	13.7	11.6	11.1	14.7
2012-13	8.3	21.1	9.9	16.5	14.5	12	12.5	13.8
2013-14	8	19.6	9.6	23.4	13.5	14.4	13.2	14.2
2014-15	10.9	21.5	12.4	27.8	16	14.6	13.1	14.9
2015-16	13.6	20.5	13.3	15.4	15.4	15.9	16	14.2
2016-17	15.1	21	13.2	15.3	14.6	14.8	17	14.5
2017-18	10.9	18.3	13.1	15.9	14	14.7	16.4	15.7
2018-19	10.40	19.10	10.40	15.80	15.00	13.10	14.50	16.10
2019-20	9.00	20.70	11.70	17.50	15.20	13.70	16.30	15.60
2020-21	9.44	18.72	11.94	16.93	17.52	12.80	16.38	14.04
2021-22	9.9	18.6	10.7	15.5	16.5	12.7	16.4	13.6
2022-23	11.7	16.4	9.5	14.9	13.5	13.9	15	11.6
2023-24	9.7	16.3	11.2	14.3	14.2	15.5	16	11.9
Average	**10.13**	**19.59**	**12.49**	**16.64**	**14.52**	**12.78**	**12.85**	**15.46**

Source: Reserve Bank of India, Government of India

Table 5 presents the ratio of education expenditure to the overall expenditure in the northeastern states of India from the year 2000-01 to 2023-24. Over this period, there are noticeable fluctuations in expenditure patterns across different states. Arunachal Pradesh, for instance, shows a significant increase from 6.4% in 2000-01 to 11.7% in 2022-23, indicating a prioritization of education spending over the years. Similarly, Manipur saw a decrease from 20.2% in 2000-01 to 9.5% in 2022-23, suggesting a potential shift in fiscal priorities or changes in the education landscape.

Assam witnessed fluctuations with a peak of 25.5% in 2000-01, followed by a gradual decline until 2010-11, and a subsequent increase reaching 20.7% in 2019-20 before decreasing again. This trend could be attributed to various factors such as changes in government policies, economic conditions, and population dynamics. Mizoram and Nagaland generally maintained their expenditure around the same levels over the years, indicating a stable allocation of resources to education relative to overall expenditure.

Meghalaya experienced a substantial increase from 16.6% in 2000-01 to 27.8% in 2014-15 before gradually stabilizing around 15-16% in the following years. This surge might reflect a strategic investment in educational infrastructure or initiatives during that period. Sikkim and Tripura also demonstrate fluctuations but generally maintained their education expenditure within a certain range over the years. However, it's essential to consider contextual factors such as population growth, educational infrastructure development, and socio-economic changes when interpreting these data to gain a comprehensive understanding of the education expenditure dynamics in the northeastern states of India.

Assam has the highest total expenditure on education among the states, followed by Meghalaya and then Arunachal Pradesh. Assam also has the highest average ratio of education expenditure to overall expenditure, indicating a relatively higher focus on education compared to other states in the region. Moreover, understanding these trends can aid policymakers in making informed decisions regarding resource allocation for education, aiming for more balanced and effective educational development across the northeastern region of India.

Conclusion

In conclusion, the analysis of the association between budgeted expenditure and literacy levels in Sikkim, India, reveals a notable link between investments in education and socioeconomic progress. The findings demonstrate a positive association, showing that increased spending correlates with higher literacy rates. This highlights the pivotal role of government expenditure in fostering educational development, thereby contributing to the overall prosperity of the state. To enhance literacy rates and foster sustainable development in Sikkim, it is imperative to continue prioritizing investments in education. This finding highlights the importance of allocating resources towards education to improve literacy levels within a population. The results highlights that there is a statistically significant and positive linear relationship between literacy rate and budgeted expenditure. Therefore, the analysis indicates that as budgeted expenditure increases, the literacy rate tends to increase as well.

Suggestion

Education and economic development are of the utmost significance in Sikkim, where the serene beauty of the Himalayas meets cultural diversity. A higher literacy rate often correlates with increased budgeted expenditure due to improved human capital development and enhanced productivity. As literacy rates rise, there tends to be greater access to educational opportunities, leading to a skilled workforce capable of higher-value contributions to the economy. This, in turn, fosters economic growth and potentially increases budgeted expenditure as individuals have the means and knowledge to participate more actively in the economy. On the other hand, higher budgeted expenditure can also positively influence literacy rates by facilitating better educational infrastructure, resources, and programs. Therefore, investing in literacy programs and education can be a strategic approach for policymakers aiming to strengthen both human development and economic prosperity in Sikkim. Understanding the relationship between budgeted expenditure and literacy rate can have significant implications for policy-making and resource allocation in education and related sectors. However, the policymakers, educators can utilize this regression model to understand how changes in the budgeted expenditure may influence literacy rates within a given population or region.

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