

## **Samagra Shiksha Abhiyan and Social Inclusion: Pathways to Human Development through Equitable Education in India**

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### **Abstract:**

Education is not merely an instrument of personal advancement but a strategic tool for achieving social inclusion and human development. In a nation as diverse and stratified as India, the systemic exclusion of marginalized groups—such as Scheduled Castes (SCs), Scheduled Tribes (STs), minorities, girls, and children with special needs—has historically hindered national development. Recognizing the need for a holistic and integrated approach, the Government of India launched the Samagra Shiksha Abhiyan (SSA) in 2018 by merging the erstwhile SSA, Rashtriya Madhyamik Shiksha Abhiyan (RMSA), and Teacher Education (TE) programs. This unified scheme aims to ensure inclusive and equitable quality education from pre-primary to Class XII, aligned with the Sustainable Development Goals (SDGs), especially SDG 4 (Quality Education). This abstract examines the role of Samagra Shiksha in promoting social inclusion, empowering disadvantaged learners, and enhancing India's human development indices.

**Keywords:** Samagra Shiksha Abhiyan, Social Inclusion, Human Development, Inclusive Education, Equity in Schooling, SC/ST Empowerment, Gender Equality, Digital Education, Children with Special Needs (CWSN), Sustainable Development Goals (SDG 4)

### **1. Introduction:**

Education is universally acknowledged as the cornerstone of human development and societal advancement. It empowers individuals, strengthens communities, and promotes economic and social progress. The importance of education lies not merely in equipping individuals with literacy and numeracy but also in enabling them to become socially efficient, morally responsible, and economically productive citizens. Philosophers and educationalists, from Pestalozzi to modern thinkers, emphasize that education is not a mechanical process but a conscious, lifelong journey of cultivating innate human potential. In India, education has played a transformative role in nation-building, poverty reduction, and fostering equality. However, the sector has also encountered persistent challenges in access, equity, and quality, particularly in rural and marginalized contexts. Education's role as a catalyst for economic development has been widely documented. It strengthens productivity, supports technological innovation, and ensures the creation of a skilled workforce necessary for a knowledge-based economy. By acting as a great equalizer, education offers pathways out of poverty for disadvantaged groups. Empirical evidence worldwide, and in India in particular, shows that education is directly correlated with improved income levels, enhanced health outcomes, gender equality, and reduced child mortality. Equally significant is the social dimension of education: it strengthens democracy, fosters social cohesion, and enhances civic engagement. The role of child education in this transformative process is paramount. Early childhood education lays the foundation for future learning by fostering cognitive, emotional, and social development. In India, successive government initiatives have sought to expand access to education, bridge gender and

social disparities, and improve quality. Among these, Sarva Shiksha Abhiyan (SSA), launched in 2001, was a landmark program focused on universalizing elementary education for children aged 6–14. It prioritized access, retention, and quality while addressing the challenges of gender and social inequities. SSA successfully contributed to enhanced enrollment ratios, narrowed gender gaps, and improved infrastructure. Nevertheless, questions of quality, dropout rates, and learning outcomes continued to persist.

Recognizing these gaps, the Government of India launched the Samagra Shiksha Abhiyan in 2018 by merging SSA, Rashtriya Madhyamik Shiksha Abhiyan (RMSA), and Teacher Education (TE). This integrated approach expanded the scope from pre-primary to senior secondary levels, adopting a holistic framework in line with the National Education Policy (NEP) 2020 and global Sustainable Development Goals (SDG-4). Samagra Shiksha seeks to ensure equity and inclusion, improve quality learning outcomes, and promote vocational education, digital education, and skill development. Importantly, it lays special emphasis on bridging gender gaps and ensuring inclusive education for all children, particularly those from marginalized groups and children with special needs. In states like Andhra Pradesh, these initiatives have had visible impacts. Literacy rates in the state rose dramatically from 4.63% in 1901 to 67.66% by 2011, with female literacy witnessing a twelve-fold increase over the century. Yet, gender disparities persist. Tables and data from SSA and Samagra Shiksha records highlight positive trends in enrollment and infrastructure expansion, but also point to continuing challenges in teacher training quality, grassroots implementation, and retention, especially among girls. The Union and State governments have increased budget allocations steadily — Andhra Pradesh's budget for Samagra Shiksha rose from ₹1,321 crore in 2013–14 to ₹2,294 crore in 2022–23, reflecting political prioritization of education. Despite these advances, the persistence of gender gaps and uneven learning outcomes signals the need for further analysis. A comprehensive study of SSA and Samagra Shiksha in Andhra Pradesh is essential to evaluate achievements, identify shortcomings, and propose strategies to bridge disparities. This paper thus situates itself in the larger discourse on inclusive education, focusing on financial trends, enrollment dynamics, and equity issues.

## **2. Background of the Study:**

The Government of India has consistently pursued policies to universalize elementary education, beginning with schemes like Operation Blackboard and District Primary Education Programme, and later consolidating these under Sarva Shiksha Abhiyan (2001). SSA was the first major flagship initiative to aim for universal elementary education through access, retention, gender parity, and quality improvement. In Andhra Pradesh, SSA was implemented from 2001–02, accompanied by infrastructure development, mid-day meal schemes, and community participation. The initiative led to significant improvements in enrollment and literacy, especially among marginalized groups and girls. However, by the mid-2010s, limitations in SSA's design became evident. The focus on elementary education alone created a fragmented system, with inadequate attention to pre-primary and secondary education. Persistent disparities in teacher quality, rural infrastructure, and student learning outcomes called for structural reform. Samagra Shiksha emphasizes a continuum of education from pre-primary to Class XII, with focus on equity, quality, digital learning, and skill development. It aligns with NEP 2020, emphasizing foundational literacy, vocational education, and inclusive schooling. Andhra Pradesh has prioritized this program, increasing allocations and focusing on girl education, digital classrooms, and community

participation. Despite improvements, challenges in bridging gender gaps and ensuring equitable outcomes persist, making a deeper analysis of its impact crucial.

### **3. Need for the Study:**

Despite major educational reforms, India continues to face persistent disparities in access, equity, and quality, particularly at the primary and upper-primary levels. Andhra Pradesh, though performing relatively well in literacy improvements and infrastructure expansion, still experiences gender gaps, high dropout rates in rural areas, and inconsistent learning outcomes. While SSA significantly improved enrollment ratios and gender parity, its limited scope and quality concerns necessitated a more holistic reform. Samagra Shiksha Abhiyan addresses these issues with an integrated framework; however, questions remain about its implementation, resource allocation, and ability to meet diverse challenges across socio-economic and gender lines. The Annual Status of Education Report (ASER) and other evaluations highlight gaps in foundational literacy, digital access, and skill development, particularly in rural and disadvantaged sections. Bridging these gaps is critical not only for achieving the constitutional mandate of education for all but also for realizing Sustainable Development Goal 4 on inclusive and equitable quality education. Therefore, this study is necessary to evaluate the impact of SSA and Samagra Shiksha in Andhra Pradesh with a special focus on gender gaps, budgetary allocations, enrollment patterns, and learning outcomes. A systematic analysis can provide evidence-based insights for policymakers to strengthen interventions, ensure effective utilization of resources, and formulate strategies to achieve equity and quality across all levels of school education.

### **4. Objective of the Study:**

The study aims to evaluate the impact of Sarva Shiksha Abhiyan and Samagra Shiksha Abhiyan in Andhra Pradesh by analyzing fund allocation, enrollment trends, and literacy growth rates. Special focus is placed on gender parity, retention, and quality outcomes, with the objective of identifying growth patterns and policy directions to strengthen inclusive and equitable education.

### **5. Methodology and Sources of Data with Statistical Tools:**

This study adopts a quantitative and descriptive research design to analyze trends in fund allocation, enrollment dynamics, infrastructure growth, and learning outcomes under SSA and Samagra Shiksha in Andhra Pradesh. Secondary data form the primary basis of analysis, sourced from SSA Annual Reports, Samagra Shiksha official records, Andhra Pradesh Education Department statistics, the District Information System for Education (DISE), and reports such as the Annual Status of Education Report (ASER). Data from the Census of India (1901–2011) on literacy, as well as Union and State budget allocations from 2013–14 to 2022–23, were also utilized. The study includes variables such as literacy growth rates, enrollment ratios, dropout and retention rates, fund allocations, and gender-specific disparities. Independent variables include budgetary trends, policy interventions, and socio-economic factors. Statistical tools used: Trend Analysis to examine changes in literacy rates, budget allocations, and enrollment patterns over time. Compound Annual Growth Rate (CAGR) to measure average annual growth in enrollment and budget allocations. By combining these tools, the study seeks to provide an evidence-based evaluation of SSA and Samagra Shiksha's role in transforming education in Andhra Pradesh, while also highlighting persisting gaps and opportunities for policy reform.

### **6. RESULTS OF THE STUDY:**

#### **Progress of Literacy in Andhra Pradesh.**

The table -1 illustrates the progression of literacy rates in Andhra Pradesh, which increased from a mere 4.63% in 1901 to 67.66% in 2011. Notably, the rise has been consistently rapid in recent decades. The male literacy rate in the state has improved from 16.80% to 75.56% Independence, while the female literacy rate has climbed twelvefold from 5% to 60% in 2011. The gender discrepancy in 1901 was 7.93%, increasing to 15.82% in 2011. The table presents the percentage of literacy in the total population, categorized by gender, over the years from 1901 to 2011. The trends indicate a significant increase in literacy rates over the decades. In 1901, the overall literacy rate was only 4.63%, with males at 8.54% and females at a mere 0.61%. However, by 2011, the overall literacy rate had risen substantially to 67.66%, with males at 75.56% and females at 59.74%.

**Table-1 Progress of Literacy in Andhra Pradesh.**

| Year | % of-literacy in Total Population |        |       |
|------|-----------------------------------|--------|-------|
|      | Male                              | Female | Total |
| 1901 | 8.54                              | 0.61   | 4.63  |
| 1911 | 9.48                              | 0.87   | 5.08  |
| 1921 | 10.88                             | 1.62   | 6.29  |
| 1931 | 11.76                             | 1.77   | 6.82  |
| 1941 | 16.80                             | 4.99   | 10.98 |
| 1951 | 22.67                             | 7.62   | 15.21 |
| 1961 | 30.19                             | 12.03  | 21.19 |
| 1971 | 33.18                             | 15.75  | 24.57 |
| 1981 | 39.26                             | 20.39  | 29.94 |
| 1991 | 55.13                             | 32.72  | 44.09 |
| 2001 | 70.32                             | 50.43  | 60.47 |
| 2011 | 75.56                             | 59.74  | 67.66 |

**Source:** Director of Census Operations Andhra Pradesh., Hyderabad.

The data highlights a consistent gender gap in literacy, with males consistently having higher literacy rates than females. However, this gap has gradually decreased over time as literacy rates for both genders have increased. The steep rise in literacy rates from 1941 onwards coincides with various educational reforms and initiatives implemented by the government to promote literacy and education nationwide. Overall, the data reflects significant progress in improving literacy rates in the population over the past century, albeit with persistent gender disparities that continue to be a focus for further improvement in education and social policies.

**7.Samagra Shikha Abhiyaan:Union and State (Andhra Pradesh) budget sanctioned amount for Samagra Siksha Abhiyan**

Table- 2 shows that the budget allocation for the Samagra Siksha Abhiyan in Andhra Pradesh has increased over the years. From 2013-14 to 2022-23, there is a noticeable increase in both the Union budget and the state budget allocations. In 2013-14, the Union budget was 27,258 Rupees, while the Andhra Pradesh state budget was 1,321 Rupees for the Samagra Siksha Abhiyan. By 2022-23, the Union budget increased to 37,383.4 Rupees, and the Andhra Pradesh state budget increased to 2,294 Rupees. This analysis provides a snapshot of the budget allocation trends for the Samagra Siksha Abhiyan in Andhra Pradesh and the Union budget, along with regression equations and growth rates for further understanding and planning.

**Table-2 Samagra Shikha Abhiyaan: Union and State (Andhra Pradesh) budget sanctioned**

**amount for Samagra Siksha Abhiyan**

| YEAR    | Union budget sanctioned for Samagra Siksha Abhiyan | Andhra Pradesh State budget sanctioned Samagra Siksha Abhiyan |
|---------|--|---|
| 2013-14 | 27,258   | 1,321   |
| 2014-15 | 26,750   | 1,259   |
| 2015-16 | 28,258   | 1,496   |
| 2016-17 | 29,026   | 1,299   |
| 2017-18 | 33,614   | 1,547   |
| 2018-19 | 31,904   | 1,644   |
| 2019-20 | 36,916   | 1,599   |
| 2020-21 | 32,900   | 1,937   |
| 2021-22 | 34,587   | 2,070   |
| 2022-23 | 37383.4  | 2,294   |

Source: DISE data

**8. Regression equations:**

Exponential Regression:

**Formula:  $y = aebx$**

Where y is the dependent variable (budget allocation), x is the independent variable (year), a is the initial value, and bb is the growth rate.

Log-Linear Regression:

**Formula:  $\ln(y) = mx + c$**

Where y is the dependent variable (budget allocation), x is the independent variable (year), mm is the slope, and cc is the y-intercept.

**Table- 3: Budget Allocation Trends**

|                                 |                      |                      |
|---------------------------------|----------------------|----------------------|
| Exponential Regression equation | $y = 1158.x + 25488$ | $y = 106.8x + 1058$  |
| Log Linear Regression equation  | $y = 0.036x + 10.16$ | $y = 0.063x + 7.039$ |
| <b>Growth rate</b>              | <b>3.60 %</b>        | <b>6.30 %</b>        |

**9. Budget Allocation Trends**

Results of Regression equations in table -3 shows

Exponential Regression Equation:

- Union Budget:  $y = 1158.0x + 25488y$
- Andhra Pradesh State Budget:  $y = 106.8x + 1058y$

Log Linear Regression Equation:

- Union Budget:  $y = 0.036x + 10.16y$
- Andhra Pradesh State Budget:  $y = 0.063x + 7.039y$

These equations provide mathematical models to estimate budget allocations based on the year. The growth rate of budget allocation for the Samagra Siksha Abhiyan is higher in Andhra Pradesh compared to the Union budget. From the given data, the growth rate for Andhra Pradesh is 6.30%, while for the Union budget, it is 3.60%. The higher growth rate in Andhra Pradesh's budget allocation compared to the Union budget suggests that the state government is prioritizing education under the Samagra Siksha Abhiyan and increasing its investment accordingly. The regression equations can be

used for forecasting future budget allocations based on historical trends, aiding in budget planning and resource allocation strategies. While exponential and log-linear regression models provide insights into the trend, it's essential to consider other factors influencing budget allocations, such as policy changes, economic conditions, and political priorities. From 2013-14 to 2022-23, both the Union and state budgets have notably risen, with the Andhra Pradesh state budget showing a higher growth rate compared to the Union budget. The provided regression equations offer predictive models for estimating future budget allocations based on historical trends. Notably, the higher growth rate in Andhra Pradesh's budget allocation underscores the state government's emphasis on education under the Samagra Siksha Abhiyan. These insights are crucial for strategic budget planning and resource allocation, though additional factors such as policy changes and economic conditions should be considered for comprehensive analysis.

### 10. Trends in Number of Schools by Different Types

Table- 4 provides an overview of the patterns in various kinds of schools. The analysis of the table reveals a drop in primary schools (across all management types) from 40,703 to 39,000 over the research period. Consequently, the average number of primary schools during the study period was 46,016. Additionally, there was a decrease in the number of primary schools at an annual growth rate of -4.18 percent.

**Table-4 Schools by Different Types**

| Sl.No. | Year                | Primary          | Upper Primary    | High Schools  | Higher Secondary | Total             |
|--------|---------------------|------------------|------------------|---------------|------------------|-------------------|
| 1      | 2014-15             | 40703<br>(79.54) | 10100<br>(19.74) | 182<br>(0.36) | 186<br>(0.36)    | 51171<br>(100.00) |
| 2      | 2015-16             | 38793<br>(78.64) | 10186<br>(20.65) | 171<br>(0.35) | 178<br>(0.36)    | 49328<br>(100.00) |
| 3      | 2016-17             | 39193<br>(78.66) | 10272<br>(20.62) | 174<br>(0.35) | 184<br>(0.37)    | 49823<br>(100.00) |
| 4      | 2017-18             | 39519<br>(79.83) | 9571<br>(19.33)  | 227<br>(0.46) | 188<br>(0.38)    | 49505<br>(100.00) |
| 5      | 2018-19             | 39499<br>(80.03) | 9427<br>(19.10)  | 212<br>(0.43) | 218<br>(0.44)    | 49356<br>(100.00) |
| 6      | 2019-20             | 39388<br>(80.19) | 9282<br>(18.80)  | 202<br>(0.11) | 290<br>(0.90)    | 49162<br>(100.00) |
| 7      | 2020-21             | 39000<br>(80.08) | 9160<br>(18.81)  | 257<br>(0.53) | 286<br>(0.59)    | 48703<br>(100.00) |
|        | <b>Growth rates</b> | <b>-4.18</b>     | <b>-9.31</b>     | <b>41.21</b>  | <b>53.76</b>     | <b>-4.82</b>      |

**Source:** DISE data

However, this loss was not statistically significant. Furthermore, elementary schools accounted for 5.27 percent of the overall schools. Additionally, upon examination of the curriculum vitae, it is evident that the number of elementary schools exhibits a steady upward trend compared to other types of schools.

The number of schools affiliated with upper primary (UP) saw an initial growth from 10,100 in 2015-2016 to 10,271 by 2016-2017. However, it then reduced to 9,571 in the following academic year and decreased to 9,160 by 2020-2021. Moreover, there was a notable decrease in UP schools, with an annual growth rate of -9.31 percent. However, it is essential to note that this fall was not statistically significant. Throughout the research period of 2020-21, the average number of schools

was 11,333. The proportion of schools affiliated with upper primary (UP) accounts for 13 percent of the overall number of institutions. According to the coefficient of variation, the development of UP schools had a lower level of consistency than elementary schools. The number of high schools had a progressive growth from 182 to 257 during the course of the research period, resulting in an average of 238 schools. Furthermore, it is noteworthy that the number of high schools saw a yearly expansion rate of 41.21 percent, a statistically significant figure at the 1 percent level. Additionally, the proportion of these schools concerning the overall number of schools exhibited fluctuations ranging from 14 to 19 percent during the duration of the research. High school development had more swings compared to elementary and UP schools.

The number of upper secondary schools observed over the research period grew from 186 to 286, with an average of 255 institutions. Moreover, it is seen that the annual growth rate of upper secondary schools over the research period 2020-21 is 35.14 percent, which is statistically significant at a 1 percent level. However, their proportion in the total number of schools is negligible. Furthermore, it has been observed that secondary schools at the higher level exhibit significant variations in comparison to other types of educational institutions. The total number of schools in Andhra Pradesh, including primary, UP, high schools, and upper secondary schools, has decreased from 51,171 to 48,703. This decline occurred at an annual growth rate of -4.82%, statistically insignificant at the 7.97% significance level throughout the research period. Moreover, it is worth noting that there was an average of 57,841 educational institutions, including elementary to upper secondary schools, in Andhra Pradesh during the research.

**11.Enrollment by Total and Gender-wise - Primary and UP:**

Table-5 aims to provide an overview of elementary and upper primary schools, categorizing them by enrollment and distinguishing between total enrollment and enrollment of boys and girls. Based on the data shown in the table, it can be noticed that the combined enrollment of boys and girls in primary schools saw a reduction from 6,060,394 to 5,276,876, resulting in an average enrollment of 5,602,564 children for the research period spanning from 2000 to 2012. Simultaneously, there was a decrease in the enrollment of males from 3,054,724 to 2,680,955 and a decrease in the enrollment of girls from 3,005,670 to 2,595,921. Additionally, the mean enrollment figures for male and female students for the research were documented as 2,827,816 and 2,774,748 pupils, respectively.

**Table-5 Enrolment by Total and Gender wise –Primary and UP Schools:**

| Sl.No. | Year    | Primary            |                    |                     | Upper Primary     |                   |                     |
|--------|---------|--------------------|--------------------|---------------------|-------------------|-------------------|---------------------|
|        |         | Boys               | Girls              | Total               | Boys              | Girls             | Total               |
| 1      | 2015-16 | 1249688<br>(51.34) | 1184344<br>(48.66) | 2434032<br>(100.00) | 593150<br>(52.02) | 547122<br>(47.98) | 1140272<br>(100.00) |
| 2      | 2016-17 | 1238099<br>(52.35) | 1127048<br>(47.65) | 2365147<br>(100.00) | 560873<br>(52.46) | 508252<br>(47.54) | 1069125<br>(100.00) |
| 3      | 2017-18 | 1281908<br>(52.65) | 1152771<br>(47.35) | 2434679<br>(100.00) | 527580<br>(53.15) | 465108<br>(46.85) | 992688<br>(100.00)  |
| 4      | 2018-19 | 1271089<br>(52.26) | 1161237<br>(47.74) | 2432326<br>(100.00) | 524403<br>(52.74) | 469856<br>(47.26) | 994259<br>(100.00)  |
| 5      | 2019-20 | 1309864<br>(52.06) | 1206378<br>(47.94) | 2516242<br>(100.00) | 533100<br>(52.66) | 479252<br>(47.34) | 1012352<br>(100.00) |
| 6      | 2020-21 | 1371671<br>(52.02) | 1264951<br>(47.98) | 2636622<br>(100.00) | 537433<br>(5.36)  | 480433<br>(4.80)  | 1017866<br>(10.16)  |

**Source:** DISE data Note: i. Figures in parentheses indicate percentages to total

Furthermore, the enrollment rates of both male and female students decreased at an annual rate of 0.8% and 1.04%, respectively. However, it is worth noting that these declines were not found to be statistically significant. Additionally, the overall enrollment rate decreased at an annual rate of 1%, which was also not found to be statistically significant. Notably, the proportion of male and female elementary school students is 50.47% and 49.53%, respectively. Consequently, the disparity in enrollment based on gender is less than 1%. The coefficient of variation indicates a similar reduction in overall registration and enrollment of boys and girls in elementary schools. The overall enrollment of students, including boys and girls, at schools affiliated with the University of Uttar Pradesh decreased from 2,628,185 to 2,157,321 during the specified research period. Furthermore, the enrollment specifically for males decreased from 1,400,905 to 1,117,233. The registration of female students had a drop from 1,227,280 to 1,040,088. Moreover, the average total enrollment was 2,880,588, with 1,501,472 for males and 1,379,116 for girls. Additionally, the overall enrollment at institutions affiliated with the University of Pennsylvania had decreased at a yearly rate of 2.97%. Additionally, the registration of male and female students fell at annual rates of 3.04% and 2.8%, respectively, during the duration of the research. However, it is worth noting that the negative enrollment growth rate for boys exhibits statistical significance at a 5% level. Similarly, the growth rates for females and the overall enrollment also demonstrate statistical significance at a 5% level. Notably, the proportion of male students in the overall enrollment was 52.12%, whilst the proportion of female students stood at 47.88%. The analysis of the coefficient of variation suggests a similar reduction in general registration and enrollment, specifically for boys and girls in UP schools.

The total enrollment in primary schools has shown a consistent upward trend over the years, increasing from 2,434,032 in 2015-16 to 2,636,622 in 2020-21. Enrollment of boys in primary schools has remained higher than girls throughout the period, with the percentage of boys ranging from 51.34% to 52.65% and girls ranging from 47.35% to 48.66%. Both boys and girls have shown an increasing trend in enrollment, indicating efforts to improve access to primary education for all genders.

The total enrollment in upper primary schools has also increased over the years, from 1,140,272 in 2015-16 to 1,017,866 in 2020-21. However, there is a notable fluctuation in the percentage of boys and girls enrolled in upper primary schools, especially in the last year (2020-21), where there seems to be an anomaly in the data with a significant decrease in the percentage of girls enrolled.

## **12. Trends in Enrolment by Total and Gender wise –Primary and UP Schools**

Further investigation may be needed to understand this anomaly and its implications for gender parity in upper primary education by using the data from table-5. To calculate the log-linear growth rates for the enrollment data of schools in Andhra Pradesh, we'll first need to transform the data into logarithmic form and then compute the growth rates. We have data for Primary School Boys (PSB), Primary School Girls (PSG), Primary School Total (PST), Upper Primary Boys (UPB), Upper Primary Girls (UPG), and Upper Primary Total (UPT).

In Andhra Pradesh, the compound log-linear growth rates reveal distinct enrollment trends across primary and upper primary school levels. For Primary School Boys (PSB), Primary School Girls (PSG), and Primary School Total (PST), the compound log-linear growth rates are 0.01848, 0.01346, and 0.01570 respectively

**13. Growth rates:**

Primary School Boys:  $0.01848 \times 100 = 0.184\%$

Primary School Girls :  $0.01346 \times 100 = 1.346\%$

Primary School Total :  $0.01570 \times 100 = 1.570\%$

In Andhra Pradesh, the enrollment in primary schools has shown positive growth rates over the specified period. The growth rate for Primary School Boys is 0.184%, for Primary School Girls it's 1.346%, and for the Primary School Total, it's 1.570%. These growth rates indicate a positive trend in enrollment across primary schools, with Primary School Girls exhibiting the highest growth rate followed by Primary School Total and Primary School Boys. This suggests progress in enhancing access to primary education in the region, with a notable increase in girls' enrollment. On the other hand, for Upper Primary Boys (UPB), Upper Primary Girls (UPG), and Upper Primary Total (UPT), the compound log-linear growth rates are negative, indicating a decline in enrollment over the years. The rates are  $-0.019586$ ,  $-0.02579$ , and  $-0.02274$  respectively

**Growth rates:**

Upper Primary Boys:  $-0.019586 \times 100 = -1.958$

Upper Primary Girls:  $-0.02579 \times 100 = -2.579$

Upper Primary Total:  $-0.02274 \times 100 = -2.274$

In Andhra Pradesh, the enrollment in upper primary schools has shown negative growth rates over the specified period. The growth rate for Upper Primary Boys is -1.958%, for Upper Primary Girls it's -2.579%, and for the Upper Primary Total, it's -2.274%. These negative growth rates indicate a declining trend in enrollment across upper primary schools, with Upper Primary Girls experiencing the most pronounced decline followed by Upper Primary Total and Upper Primary Boys. This suggests a concerning situation for upper primary education in the region, warranting further investigation into the underlying factors contributing to this decline.

In Andhra Pradesh, the compound log-linear growth rates reveal distinct enrollment trends across primary and upper primary school levels. Primary School Boys (PSB), Primary School Girls (PSG), and Primary School Total (PST) exhibit positive growth rates, indicating a steady increase in enrollment over the years, albeit at a relatively slower pace. Conversely, Upper Primary Boys (UPB), Upper Primary Girls (UPG), and Upper Primary Total (UPT) display negative growth rates, indicating a decline in enrollment, particularly pronounced in the upper primary levels. These findings suggest the need for further investigation into the underlying factors driving these divergent trends and the formulation of targeted strategies to bolster enrollment rates, especially in upper primary education.

For Primary School Boys (PSB), Primary School Girls (PSG), and Primary School Total (PST), the compound log-linear growth rates are all positive, indicating a positive growth trend in enrollment over the years. However, the growth rates are relatively low, suggesting a slower growth rate compared to upper primary levels. For Upper Primary Boys (UPB), Upper Primary Girls (UPG), and Upper Primary Total (UPT), the compound log-linear growth rates are negative, indicating a decline in enrollment over the years. This decline is more pronounced in the upper primary levels compared to primary levels. These trends suggest that while primary school enrollment has shown positive growth, upper primary school enrollment has experienced a decline in Andhra Pradesh over the years. Further investigation may be needed to understand the factors contributing to these trends and to devise strategies for improving enrollment rates, particularly at the upper primary level.

**14. SSA-Indian Scenario**

From establishing the Sarva Shiksha Abhiyan (SSA) in the academic year 2000-01 until March 31, 2017, 364,000 new elementary schools have been established. Additionally, 311,000 school buildings have been constructed, along with 1,873,000 additional classrooms. Moreover, 242,000 drinking water facilities, 1,036,000 school toilets, and 1,946,000 teacher posts have been approved and allocated to various states and union territories. As of March 31, 2017, 359,000 elementary schools have been established, along with 293,000 school buildings and 1,776,000 additional classrooms. Additionally, 232,000 drinking water facilities have been implemented, 983,000 school toilets have been constructed, and 1,575,000 teachers have been recruited. During the first year of the SSA program (2001-2002), a total budget of Rs. 49,837.06 lakhs was allocated. However, the spending at the all-India level amounted to just Rs. 17,204.06 (34.5%) of the allocated budget. In the fiscal year 2015-2016, a total of 69.7% of the budgeted funds were spent across the whole of India. In the fiscal year 2007-08, the achievement rate of meeting objectives for expenditure on civil works under the SSA programme at the national level in India was 72.8%. In the fiscal year 2009-2010, 66.9% of the designated expenditure was successfully spent, meeting the set goals.

The current value is lower than in the two preceding years. The attainment of educational goals about the establishment of schools throughout India has shown a notable upward trajectory, rising from 77.9% during 2002-07 to 91.1% in 2010-11. The percentage of teacher appointments experienced a minimal level of 33.0% during 2009-10 and 2012-13. However, there was a subsequent growth in teacher appointments, reaching 79.9% during the 2014-15 academic year at the national level in India.

### **15. Fund Allocation by Government of India and Andhra Pradesh under SSA**

Table-6 shows the relative shares of fund allocation by the Government of India and Government of Andhra Pradesh for SSA during 2001-02 to 2017-18. The data in the table indicates that the distribution of funds by the Government of India and the Government of Andhra Pradesh exhibited a ratio of 85:15 percent in the fiscal year 2001-02.

**Table-6 Fund Allocation by Government of India and Andhra Pradesh under SSA**

| <b>Years</b> | <b>Government of India</b> | <b>Government of Andhra Pradesh</b> |
|--------------|----------------------------|-------------------------------------|
| 2001-02      | 85                         | 15                                  |
| 2002-03      | 75                         | 25                                  |
| 2003-04      | 50                         | 50                                  |
| 2004-05      | 75                         | 25                                  |
| 2005-06      | 75                         | 25                                  |
| 2006-07      | 75                         | 25                                  |
| 2007-08      | 65                         | 35                                  |
| 2008-09      | 65                         | 35                                  |
| 2009-10      | 50                         | 50                                  |
| 2010-11      | 65                         | 35                                  |
| 2011-12      | 65                         | 35                                  |
| 2012-13      | 65                         | 35                                  |
| 2013-14      | 65                         | 35                                  |
| 2014-15      | 65                         | 35                                  |
| 2015-16      | 65                         | 35                                  |
| 2016-17      | 60                         | 40                                  |

|               |                      |                      |
|---------------|----------------------|----------------------|
| 2017-18       | 60                   | 40                   |
| 2018-19       | 60                   | 40                   |
| 2019-20       | 65                   | 35                   |
| 2020-21       | 65                   | 35                   |
| 2021-22       | 60                   | 40                   |
| <b>Growth</b> | <b>-0.011(0.108)</b> | <b>0.032*(0.022)</b> |

**Source:** SSA Annual Reports, Various Issues(2003-04and2016-17),AndhraPradesh .Note:\* Significant at 5% level.

This ratio shifted to 50:50 percent in 2003-04, and then saw a further rise to 75:25 percent in 2004-05. Nevertheless, there have been many alterations in the distribution of funds, ultimately resulting in a final allocation ratio of 60:40 over 2017-18. The information suggests that both the Government of India and Andhra Pradesh actively participate in this prominent initiative focused on primary education. From 2001-02 to 2017-18, there has been a drop in the annual growth rate of fund shares awarded by the federal government by 1.1 percent, while the yearly growth rate of fund shares granted by state governments has climbed by 3.2 percent. The data indicates that the annual growth rate of money allocated under the Sarva Shiksha Abhiyan (SSA) by the Government of India was 43.2 percent from 2001-02 to 2016-17. In contrast, the Government of Andhra Pradesh grew 27.4 percent during the same period. The annual rise in the total money the central and state governments granted was 40.0 percent throughout the period from 2001-02 to 2016-17. Moreover, there have been various alterations in the proportion of funds disbursed by the central government from 2001-02 to 2016-17, with an annual growth rate of 3.2 percent. In contrast, the proportion of money released by the state government has seen a negative growth rate of 12.6 percent. The data suggests that the central and state governments contribute to the Sarva Shiksha Abhiyan (SSA) for elementary education. However, it is seen that the federal government has issued a more significant amount of funding compared to the state government during the years 2001-02 and 2016-17.

**16. Funds Released under SSA by Central and State Govts. during 2001-02 to 2016-17**

Table -7 presents the district-wise distribution of money allocated under the SSA system from 2003-04 to 2016-17, showcasing the rise during the specified period. The findings derived from the Compound Annual Growth Rate analysis reveal that funding allocation to districts between 2003-04and2016-17 hasshowna consistentupwardtrend in all districts. A notable upward trajectoryhas been noted in the expansion of finances under the Sarva Shiksha Abhiyan (SSA) program at the state level in Andhra Pradesh. The districts of Visakhapatnam, Nellore, Anantapur, Kurnool, and Srikakulam have seen a significant rise in finances, with percentages of 50.66%, 49.12%, 47.91%, 46.94%, and 46.86% respectively. The city of Guntur has had the lowest yearly growth rate, which stands at 12.97%.

**Table- 7 Funds Released under SSA by Central and State Govts during 2001-02 to 2016-17**

| Year    | Rs. In Crore |        |         | In Percentage |       |        |
|---------|--------------|--------|---------|---------------|-------|--------|
|         | Central      | State  | Total   | Central       | State | Total  |
| 2001-02 | 22.85        | 10.50  | 33.35   | 68.52         | 31.48 | 100.00 |
| 2002-03 | 82.26        | 57.86  | 140.12  | 58.71         | 41.29 | 100.00 |
| 2003-04 | 105.74       | 93.22  | 198.96  | 53.15         | 46.85 | 100.00 |
| 2004-05 | 250.00       | 197.69 | 447.69  | 55.84         | 44.16 | 100.00 |
| 2005-06 | 5120.57      | 235.21 | 5355.78 | 95.61         | 4.39  | 100.00 |

|               |                                 |                                 |                                 |                                 |                                   |               |
|---------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------|
| 2006-07       | 7535.89                         | 355.71                          | 7891.6                          | 95.49                           | 4.51                              | 100.00        |
| 2007-08       | 11477.39                        | 236.73                          | 11714.12                        | 97.98                           | 2.02                              | 100.00        |
| 2008-09       | 12640.29                        | 300.62                          | 12940.91                        | 97.68                           | 2.32                              | 100.00        |
| 2009-10       | 12824.21                        | 385.69                          | 13209.9                         | 97.08                           | 2.92                              | 100.00        |
| 2010-11       | 19636.53                        | 820.36                          | 20456.89                        | 95.99                           | 4.01                              | 100.00        |
| 2011-12       | 20866.3                         | 1478.99                         | 22345.29                        | 93.38                           | 6.62                              | 100.00        |
| 2012-13       | 23873                           | 933.230                         | 24806.23                        | 96.24                           | 3.76                              | 100.00        |
| 2013-14       | 24802.92                        | 1158.24                         | 25961.16                        | 95.54                           | 4.46                              | 100.00        |
| 2014-15       | 24122.51                        | 1322.08                         | 25444.59                        | 94.80                           | 5.20                              | 100.00        |
| 2015-16       | 21666.51                        | 1447.95                         | 23114.46                        | 93.74                           | 6.26                              | 100.00        |
| 2016-17       | 21678.46                        | 2003.98                         | 23682.44                        | 91.54                           | 8.46                              | 100.00        |
| 2018-19       | 37828.14                        | 922.36                          | 38750.50                        | 97.54                           | 2.46                              | 100.00        |
| 2019-20       | 21335.70                        | 10991.12                        | 32326.82                        | 66                              | 34                                | 100.00        |
| 2020-21       | 21651.24                        | 6106.76                         | 27758                           | 78                              | 22                                | 100.00        |
| 2021-2022     | 19898.40                        | 4974.6                          | 24873                           | 80                              | 20                                | 100.00        |
| <b>Growth</b> | <b>0.422*</b><br><b>(0.000)</b> | <b>0.284*</b><br><b>(0.000)</b> | <b>0.421*</b><br><b>(0.000)</b> | <b>0.042*</b><br><b>(0.004)</b> | <b>-0.156**</b><br><b>(0.024)</b> | <b>0.013*</b> |

**Source:**SSAAnnualReports,VariousIssues(2003-04and2016-17),AndhraPradesh.Note:\* Significant at 1% level & \*\* Significant at 5% level.

### 17. District-wise Growth of Funds Released under SSA Scheme during 2003-04 to 2021-22

The table -8 presents the district-wise growth of funds released under the SSA (Sarva Shiksha Abhiyan) scheme in Andhra Pradesh from 2003-04 to 2021-22, measured in lakhs of rupees. The funds allocated under the SSA scheme varied across districts and years. For example, in 2003-04, Srikakulam received 435 lakhs, which increased to 573 lakhs in 2021-22. Similarly, Vizianagaram received 630 lakhs in 2003-04, which decreased to 381 lakhs in 2021-22. The percentage change in funds released over the years indicates the growth or decline in allocation. For instance, Srikakulam experienced a 46.9% increase in funds from 2003-04 to 2021-22, while Vizianagaram saw a 40.1% decrease during the same period. Overall, the state of Andhra Pradesh witnessed a 40.7% decrease in funds allocated under the SSA scheme. There are notable disparities in fund allocation among districts. For example, districts like East Godavari and Krishna saw significant decreases in funds allocated, while others like Visakhapatnam and Nellore experienced increases. Despite fluctuations at the district level, the overall trend for Andhra Pradesh shows a decrease in funds allocated under the SSA scheme from 2003-04 to 2021-22. Overall, the data highlights the varying trends in fund allocation under the SSA scheme across different districts of Andhra Pradesh over the specified period, indicating changes in priorities and resource allocation strategies over time.

**Table- 8** District-wise Growth of Funds Released under SSA Scheme during 2003-04 to 2021-22  
 (Rs.in lakhs)

| Sl. No | District      | 2003-04 | 2021-22 | % changeover |
|--------|---------------|---------|---------|--------------|
| 1.     | Srikakulam    | 435     | 573     | 0.469        |
| 2.     | Vizianagaram  | 630     | 381     | 0.401        |
| 3.     | Visakhapatnam | 496     | 677     | 0.507        |
| 4.     | EastGodavari  | 1319    | 815     | 0.329        |
| 5.     | West Godavari | 1032    | 645     | 0.298        |

|         |               |      |      |       |
|---------|---------------|------|------|-------|
| 6.      | Krishna       | 1347 | 741  | 0.383 |
| 7.      | Guntur        | 665  | 678  | 0.130 |
| 8.      | Prakasam      | 550  | 511  | 0.384 |
| 9.      | Nellore       | 587  | 537  | 0.491 |
| 10.     | Chittoor      | 372  | 682  | 0.316 |
| 11.     | Kadapa        | 613  | 562  | 0.318 |
| 12.     | Anantapur     | 641  | 807  | 0.479 |
| 13.     | Kurnool       | 635  | 568  | 0.469 |
| State** | AndhraPradesh | 9322 | 8477 | 0.407 |

**Source:** SSA Annual Reports, Various Issues (2003-04 and 2021-22)

Andhra Pradesh. CAGR= Compound Annual Growth

**18. Summary:**

The study underscores the critical role of education in driving both individual empowerment and societal development, with a particular focus on Andhra Pradesh’s experiences under Sarva Shiksha Abhiyan (SSA) and Samagra Shiksha Abhiyan (SSA). Analysis of literacy trends reveals that overall literacy in Andhra Pradesh rose from 4.63% in 1901 to 67.66% by 2011, with male literacy reaching 75.56% and female literacy 59.74%. This marks a significant narrowing of the gender gap, though disparities still persist. Budgetary analysis indicates a steady increase in allocations. The Union budget for Samagra Shiksha rose from ₹27,258 crore in 2013–14 to ₹37,383.4 crore in 2022–23, while the Andhra Pradesh state budget grew from ₹1,321 crore to ₹2,294 crore in the same period. Regression and CAGR analysis show that Andhra Pradesh recorded a 6.3% annual growth in allocations compared to the Union’s 3.6%, highlighting the state’s prioritization of education. Enrollment patterns under SSA and Samagra Shiksha have shown positive trends, especially in enhancing access and reducing gender disparities. For example, the net enrollment ratio at primary levels rose from 83% in 2001 to over 95% in recent years, with notable gains for girls. However, challenges in retention and quality learning outcomes persist, particularly in rural and marginalized sections. Teacher training gaps, infrastructural inequities, and grassroots implementation issues continue to constrain progress. The findings confirm that SSA and Samagra Shiksha have been pivotal in expanding access, improving infrastructure, and reducing gender gaps. Nevertheless, disparities in quality and outcomes call for renewed focus on teacher capacity-building, digital inclusion, and community engagement. The study concludes that while Andhra Pradesh has made commendable progress, bridging the residual gender gap and ensuring equity in learning outcomes remain pressing goals.

**19. Conclusion:**

In conclusion, this study offers a comprehensive analysis of the trends in fund allocation and enrollment dynamics under the Sarva Shiksha Abhiyan (SSA) scheme in Andhra Pradesh. The findings highlight the evolving landscape of educational financing and enrollment patterns over the past two decades, providing valuable insights for policymakers and stakeholders in the education sector. The analysis of fund allocation reveals notable variations across districts, indicating shifts in priorities and resource allocation strategies over time. While some districts experienced significant increases in funding, others saw declines, reflecting the need for targeted interventions to address disparities and ensure equitable access to resources across regions.

Furthermore, the study underscores the importance of addressing challenges in enrollment dynamics, particularly in upper primary schools where negative growth rates were observed, especially among girls. These findings emphasize the imperative of promoting gender equity and enhancing access to education for all segments of the population. Overall, the insights derived from this study can inform evidence-based policymaking and programmatic interventions aimed at improving the effectiveness and inclusivity of education initiatives in Andhra Pradesh. By understanding the trends in fund allocation and enrollment dynamics, policymakers and stakeholders can devise targeted strategies to address the underlying challenges and capitalize on opportunities for promoting quality education and sustainable development in the state. Moving forward, continued monitoring and evaluation of educational policies and interventions will be essential to track progress, identify areas for improvement, and ensure that resources are effectively utilized to achieve the objectives of the SSA scheme and advance the overarching goals of education for all in Andhra Pradesh.

## **20.Suggestions:**

1. **Address Declining Enrollment in Upper Primary Schools:** The concerning decline in enrollment at the upper primary level requires urgent attention. The state government should conduct a thorough analysis to identify the underlying reasons for this trend and develop targeted interventions to reverse it. This could include initiatives to improve the quality of education, enhance infrastructure, and address barriers to enrollment, particularly for girls.
2. **Investment in High Schools and Upper Secondary Education:** With a progressive growth in the number of high schools and upper secondary schools, the state should focus on strengthening these institutions to provide quality education. This could involve increasing funding for infrastructure development, teacher training programs, and curriculum enhancements to meet the evolving needs of students.
3. **Equitable Distribution of Funds:** The district-wise analysis of fund allocation under the SSA scheme highlights disparities across districts. The state should ensure equitable distribution of funds, prioritizing districts with the greatest need and targeting resources towards improving infrastructure, teacher quality, and learning outcomes in underserved areas.
4. **Enhanced Monitoring and Evaluation:** Implementing robust monitoring and evaluation mechanisms is crucial to track the effectiveness of education policies and interventions. The state government should establish systems to regularly assess enrollment rates, student performance, teacher quality, and infrastructure development to inform evidence-based decision-making and policy formulation.
5. **Capacity Building for Educators:** Investing in professional development programs for teachers and school administrators is essential to improve the quality of education delivery. The state should prioritize capacity-building initiatives focused on enhancing teaching methodologies, curriculum design, assessment practices, and use of technology in education.

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