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# Relationship Between Social Sector and Economic Development in India

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*Abstract* - **This study investigates the relationship between the social sector and economic development across India. Various educational and health indicators were used to construct a Social Sector Development Index (SSDI). Economic development variables such as the growth rate of Gross State Domestic Product (GSDP), gross capital formation, the Human Poverty Index (HPI), the Multidimensional Poverty Index (MPI), and the unemployment rate were employed in the current study. A positive correlation between the SSDI and GSDP growth rate was observed in most states between 1992-1993 and 2005-2006. However, in 2019-2020, the analysis revealed a negative correlation between the SSDI and the GSDP growth rate in most states. The study also found a negative relationship between the SSDI and gross capital formation in most states during the period from 1992-1993 to 2019-2020. Nevertheless, several states-such as Haryana, Maharashtra, Tamil Nadu, Assam, Bihar, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Meghalaya, Nagaland, Rajasthan, Tripura, and West Bengal-exhibited a positive relationship between the SSDI and gross capital formation in 2005-2006. Kerala, Goa, Mizoram, Delhi, Punjab, Tamil Nadu, Maharashtra, and Himachal Pradesh, which recorded high SSDI values and low HPI values, performed better in 1992-1993. Given that economic growth and development are significantly influenced by health and education, the government must take an active role in providing these essential social services.**
**Keywords: Social Sector Development Index (SSDI), Economic Development, Gross State Domestic Product (GSDP), Gross Capital Formation, Human Poverty Index (HPI)**

## I. INTRODUCTION

Education and major health indicators-such as birth rate, death rate, infant mortality rate, and maternal mortality rate-are critical inputs for the development of human resources and economic growth. Investing in health and education increases the workforce's efficiency, productivity, and well-being, thereby promoting economic growth (Kaur *et al.,* 2013). According to endogenous growth theory, expenditure on health and education promotes human capital, which in turn leads to endogenous technical progress and accelerates economic growth. Several empirical studies-such as those by Schultz (1961), Swaroop (1996), Lee and Barro (1997), and Gupta, Clements, and Inchauste (2004)-have supported the view that sufficient expenditure on health and education fosters human capital formation and enhances economic growth (Maitra & Mukhopadhyay, 2012). Human capital has played an indispensable role in economic development. The development of the social sector is essential for the sustained human and economic development of a nation, as it stimulates the economy by increasing income and employment opportunities, improving productivity, and enhancing the quality of life (Jena & Khilar, 2018).

## II. OBJECTIVE OF THE STUDY

Finding the relationship between the social sector and economic development between 1992-93 and 2019-20 is aim of this research.

## III. DATABASE AND METHODOLOGY

This study examined how India's social sector and economic development interacted between 1992-93 and 2019-20. The research is based on secondary data. Factor analysis is one of the statistical techniques employed in the present study.

## IV. REVIEW OF LITERATURE

Brar (2002) studied the multiple imbalances between the social sector and economic growth in Punjab. The objective of the study was to highlight the state's achievements, gaps, and imbalances in the education and health sectors. Among 26 states, Punjab ranked 12th in literacy and third in per capita income for almost two decades. In 1991, Kerala's literacy and adult literacy rates reached 90%, with a narrow gender gap. On the other hand, Punjab's literacy and adult literacy rates did not exceed 60% and were marked by a wide gender gap.

Punjab failed to achieve the target of universalization of elementary education. In terms of health, the birth rate, infant mortality rate, and maternal mortality rate were higher in Punjab than in Kerala. Between 1988 and 1991, Punjab had the lowest life expectancy at birth, while Kerala had the highest. The neglect of the education and health sectors was found to be responsible for Punjab's poor performance in these two indicators.

Kerala's performance in the social sector-particularly in education and health-was far superior to that of Punjab, despite having a substantially lower level of income. To strengthen social sector infrastructure, the state must reduce its ever-increasing non-developmental expenditure. Sekhar (2005) examined how political institutions and interest

groups differ in their responsibilities for policy formation, as well as the connection between social progress and economic growth. Even after the 1991 economic reforms, the developmental performance of the Indian economy did not improve significantly. There was only a marginal increase in the average annual growth rate of per capita Gross Domestic Product (GDP) during the 1990s. Excessive government intervention existed in certain economic sectors, while in the fields of education and healthcare, government intervention remained insufficient and ineffective.

As a result, widespread poverty and deprivation persisted in India. Other countries, such as China, South Korea, Hong Kong, Singapore, Japan, Thailand, and Brazil, performed significantly better than India in terms of social development indicators like adult literacy, life expectancy at birth, infant mortality rate, and per capita GDP growth. The government should play an active role in developing fundamental skills to enable more inclusive economic growth and ensure the success of economic reforms.

Mohapatra (2013) discussed development patterns in the social sector, particularly in the areas of health and education. He also examined how the social sector can enhance human potential and support self-sustaining economic growth. Research has shown a significant correlation between social sector development and human development.

India's social sector spending increased significantly between 1990 and 1991. Households in India spent 72% of their total income on healthcare, compared to the public sector's 20.3% of total spending. Although India's literacy rate rose from 18.33% in 1951 to 74.56% in 2011, this increase has not been particularly satisfactory.

Socioeconomic growth can only be achieved if the gender literacy gap gradually narrows. Increased public spending on healthcare is necessary to improve both individual and national productivity and efficiency. It can be inferred that education and health have played a significant role in national development.

Only by developing the social sector can the highest level of social welfare and improved quality of life be achieved. Annu and Langyan (2014) emphasized that good health is an integral component of economic development. The primary objective of their research was to analyze the correlation between per capita government health spending and key health indicators: crude birth rate, crude death rate, and infant mortality rate. Data were collected from secondary sources over a ten-year period, from 2000 to 2010.

According to the report, Haryana's per capita government health spending increased from ₹166.83 in 2000 to ₹442.08 in 2010. Over the same period, all three health indicators-crude birth rate, crude death rate, and infant mortality rate-exhibited a downward trend. The study also found that Haryana's per capita government health spending was negatively correlated with each of these health indicators. Therefore, the state must increase its health spending to improve public health. The government should play a major role in promoting equitable access to healthcare services. Wang and Liu (2016) studied how economic growth is influenced by human capital derived from education. Using recent education data from 55 countries and regions between 1960 and 2009, the study investigated the impact of varying levels of education on economic growth.

The findings revealed that higher education significantly boosts economic growth, while primary and secondary education do not have a clearly positive effect. The rationale is that individuals with higher education are better equipped to adopt new technologies and generate creative ideas-both essential in the modern economy.

Additionally, life expectancy, average years of schooling, and physical capital were all found to positively influence economic growth. Since primary and secondary education often produce "immature" human capital, the study suggested uncertainty in their relationship with economic growth.

To improve the education system, the government should increase funding for education and ensure efficient use of those resources. Pattayat and Rani (2017) investigated the effect of social sector development on Haryana's economic growth. Using time series data from 1985 to 2016, the study explored both short- and long-term correlations between social sector development and economic growth in the state. The results indicated a strong relationship between economic growth and spending on social sector development.

Haryana has recently seen increased government spending on social initiatives, including social security, housing, sanitation, healthcare, and education. Spending on the social sector has grown at a faster rate than the Net State Domestic Product (NSDP). It was found that higher social sector investment positively impacts both short- and long-term NSDP growth. Despite these investments, many of the poor in Haryana still lack access to social sector services. Emphasizing the need for greater public investment in human capital is essential to support economic growth.

## V. RESULTS AND DISCUSSION

### *A. Section I*

#### *1. Social Sector Development Index and Growth Rate of GSDP*

The values and rankings of the GSDP growth rate and the Social Sector Development Index (SSDI) for each Indian state in 1992-93 is shown in Table I. States such as Goa, Himachal Pradesh, Kerala, Maharashtra, Nagaland, and Tamil Nadu experienced high social sector performance along with a high GSDP growth rate in 1992-93, indicating a favorable correlation between economic progress and the functioning of the social sector.

Additionally, the study found a strong correlation between economic development and social sector performance in states like Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Haryana, Jammu and Kashmir, Karnataka, Meghalaya, Odisha, Tripura, Uttar Pradesh, and West Bengal, as these states exhibited both low social sector performance and a low GSDP growth rate during the same period. However, some states-such as Delhi, Gujarat, Madhya Pradesh, and Rajasthan-showed a negative relationship between social sector performance and economic development in 1992-93. Overall, the research indicates a favorable correlation between the SSDI and the GSDP growth rate in the majority of states during 1992-93, as illustrated in Fig.1.

TABLE I SOCIAL SECTOR DEVELOPMENT INDEX AND GROWTH RATE OF GSDP FOR 1992-93

| States/UTs | Social Sector Development Index | Rank | Growth Rate of GSDP | Rank |
|---|---|---|---|---|
| Kerala | 0.830 | 1 | 6.77 | 6 |
| Goa | 0.811 | 2 | 12.95 | 4 |
| Delhi | 0.711 | 3 | 3.86 | 14 |
| Punjab | 0.628 | 4 | 4.72 | 11 |
| Nagaland | 0.604 | 5 | 5.18 | 9 |
| Tamil Nadu | 0.584 | 6 | 5.34 | 8 |
| Maharashtra | 0.575 | 7 | 14.33 | 2 |
| Himachal Pradesh | 0.548 | 8 | 5.58 | 7 |
| Manipur | 0.528 | 9 | 4.97 | 10 |
| Haryana | 0.503 | 10 | 0.15 | 20 |
| Gujarat | 0.491 | 11 | 28.39 | 1 |
| Jammu & Kashmir | 0.473 | 12 | 4.72 | 11 |
| Karnataka | 0.447 | 13 | 2.75 | 17 |
| Andhra Pradesh | 0.427 | 14 | -1.42 | 22 |
| Meghalaya | 0.424 | 15 | -4.50 | 24 |
| Arunachal Pradesh | 0.402 | 16 | 3.13 | 16 |
| West Bengal | 0.386 | 17 | 3.17 | 15 |
| Tripura | 0.372 | 18 | 3.96 | 13 |
| Rajasthan | 0.323 | 19 | 13.74 | 3 |
| Madhya Pradesh | 0.313 | 20 | 7.20 | 5 |
| Odisha | 0.303 | 21 | -0.94 | 21 |
| Uttar Pradesh | 0.244 | 22 | 1.69 | 18 |
| Assam | 0.292 | 23 | 1.39 | 19 |
| Bihar | 0.209 | 24 | -4.26 | 23 |

Source: Author's Calculations

The values and rankings of the Social Sector Development Index (SSDI) and the GSDP growth rate across Indian states for the year 2005-06 are presented in Table II. States such as Kerala, Maharashtra, Sikkim, Tamil Nadu, and Delhi experienced high social sector performance along with high GSDP growth rates in 2005-06, indicating a positive correlation between social sector performance and economic development.

Additionally, the study indicated that economic development and social sector performance were positively correlated in states such as Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Haryana, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Manipur, Meghalaya, Odisha, Rajasthan, Tripura, Uttar Pradesh, and West Bengal, as these states experienced both low social sector performance and low GSDP growth rates during the same period. However, in several states-namely Goa, Punjab, Gujarat, Karnataka, Nagaland, and Uttarakhand-economic progress and social sector performance were negatively correlated during the study period.

Therefore, the SSDI and GSDP growth rate were positively correlated in the majority of states during 2005-06. A favorable correlation between the SSDI and the GSDP growth rate for 2005-06 is also illustrated in Fig.2.

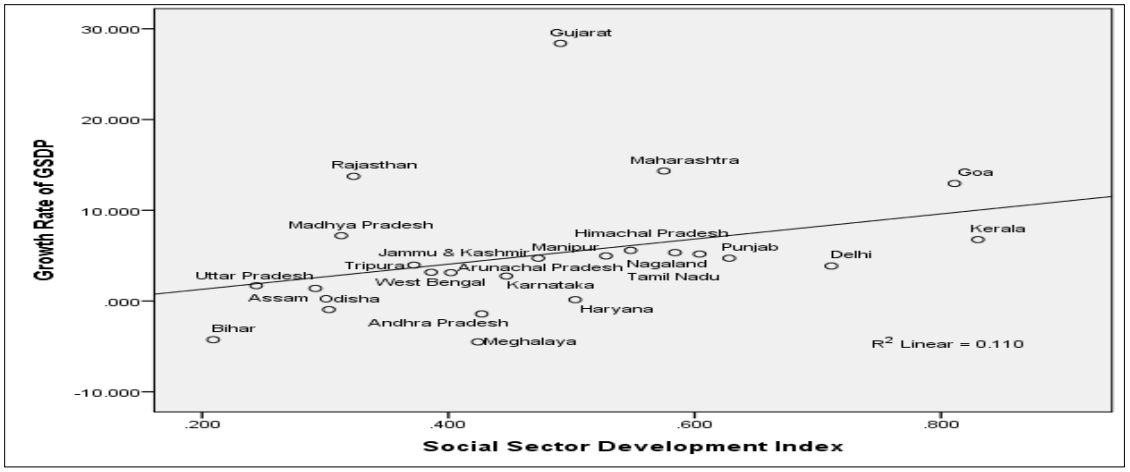


Fig.1 Relationship Between Social Sector Development Index and Growth Rate of GSDP in 1992-93

TABLE II SOCIAL SECTOR DEVELOPMENT INDEX AND GROWTH RATE OF GSDP FOR 2005-06

| States/UTs | Social Sector Development Index | Rank | Growth Rate of GSDP | Rank |
|---|---|---|---|---|
| Kerala | 0.843 | 1 | 10.09 | 7 |
| Goa | 0.833 | 2 | 7.54 | 13 |
| Tamil Nadu | 0.772 | 3 | 13.96 | 3 |
| Delhi | 0.765 | 4 | 10.05 | 8 |
| Punjab | 0.707 | 5 | 5.90 | 19 |
| Sikkim | 0.707 | 5 | 9.78 | 9 |
| Mizoram | 0.681 | 7 | 6.98 | 14 |
| Himachal Pradesh | 0.673 | 8 | 8.43 | 11 |
| Maharashtra | 0.640 | 9 | 13.35 | 4 |
| Manipur | 0.615 | 10 | 6.36 | 17 |
| Uttarakhand | 0.609 | 11 | 14.34 | 2 |
| Haryana | 0.604 | 12 | 9.20 | 10 |
| Karnataka | 0.603 | 13 | 10.51 | 5 |
| Jammu & Kashmir | 0.557 | 14 | 5.78 | 21 |
| Gujarat | 0.543 | 15 | 14.95 | 1 |
| Andhra Pradesh | 0.529 | 16 | 5.35 | 23 |
| Tripura | 0.497 | 17 | 5.81 | 20 |
| West Bengal | 0.486 | 18 | 6.29 | 18 |
| Nagaland | 0.485 | 19 | 10.24 | 6 |
| Arunachal Pradesh | 0.439 | 20 | 2.76 | 27 |
| Meghalaya | 0.425 | 21 | 7.91 | 12 |
| Assam | 0.421 | 22 | 3.40 | 25 |
| Odisha | 0.406 | 23 | 5.68 | 22 |
| Rajasthan | 0.380 | 24 | 6.68 | 15 |
| Madhya Pradesh | 0.352 | 25 | 5.31 | 24 |
| Chhattisgarh | 0.347 | 26 | 3.23 | 26 |
| Uttar Pradesh | 0.327 | 27 | 6.51 | 16 |
| Jharkhand | 0.240 | 28 | -3.20 | 29 |
| Bihar | 0.156 | 29 | -1.69 | 28 |

Source: Author's Calculations


Fig.2 Relationship Between Social Sector Development Index and Growth Rate of GSDP in 2005-06

TABLE III SOCIAL SECTOR DEVELOPMENT INDEX AND GROWTH RATE OF GSDP FOR 2019-20

| States/UTs | Social Sector Development Index | Rank | Growth Rate of GSDP | Rank |
|---|---|---|---|---|
| Kerala | 0.777 | 1 | 3.45 | 26 |
| Goa | 0.772 | 2 | -7.50 | 29 |
| Sikkim | 0.771 | 3 | 5.77 | 16 |
| Delhi | 0.731 | 4 | 7.10 | 11 |
| Punjab | 0.710 | 5 | 4.02 | 23 |
| Tamil Nadu | 0.706 | 6 | 6.13 | 14 |
| Mizoram | 0.693 | 7 | 12.20 | 1 |
| Himachal Pradesh | 0.669 | 8 | 4.90 | 21 |
| Jammu & Kashmir | 0.648 | 9 | 2.31 | 28 |
| Haryana | 0.631 | 10 | 8.24 | 4 |
| Manipur | 0.624 | 11 | 7.11 | 10 |
| West Bengal | 0.616 | 12 | 6.13 | 14 |
| Karnataka | 0.611 | 13 | 5.00 | 19 |
| Uttarakhand | 0.605 | 14 | 4.30 | 22 |
| Maharashtra | 0.596 | 15 | 4.96 | 20 |
| Nagaland | 0.581 | 16 | 7.43 | 6 |
| Tripura | 0.571 | 17 | 9.39 | 3 |
| Andhra Pradesh | 0.567 | 18 | 7.23 | 9 |
| Arunachal Pradesh | 0.538 | 19 | 7.80 | 5 |
| Gujarat | 0.536 | 20 | 7.26 | 8 |
| Odisha | 0.528 | 21 | 6.72 | 12 |
| Rajasthan | 0.527 | 22 | 5.03 | 18 |
| Assam | 0.500 | 23 | 2.94 | 27 |
| Chhattisgarh | 0.484 | 24 | 5.12 | 17 |
| Madhya Pradesh | 0.444 | 25 | 9.63 | 2 |
| Uttar Pradesh | 0.436 | 26 | 3.81 | 25 |
| Jharkhand | 0.426 | 27 | 3.98 | 24 |
| Meghalaya | 0.426 | 27 | 6.20 | 13 |
| Bihar | 0.392 | 29 | 7.41 | 7 |

Source: Author's Calculations

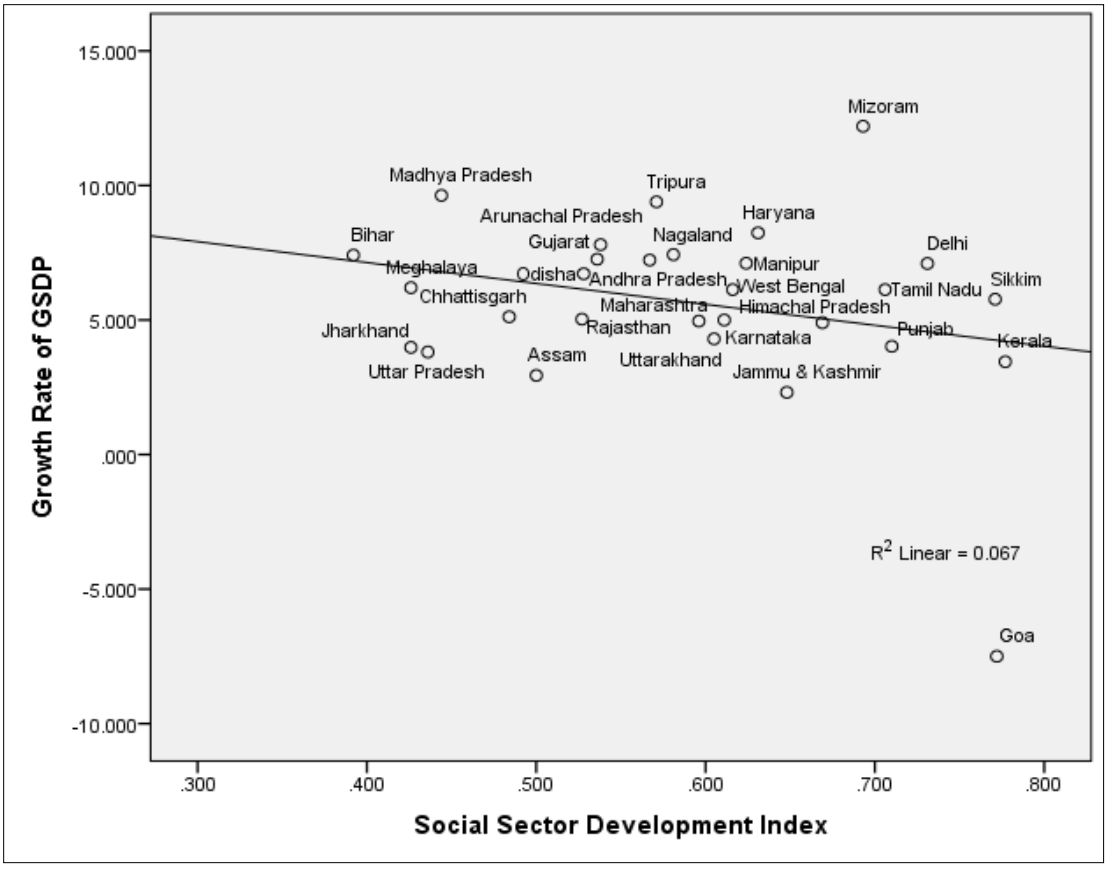


Fig.3 Relationship Between Social Sector Development Index and Growth Rate of GSDP in 2019-20

The values and rankings of the Social Sector Development Index (SSDI) and the GSDP growth rate across Indian states for the year 2019-20 is presented in Table III. States such as Mizoram and Haryana demonstrated a strong correlation between social sector performance and economic growth, as reflected in their high GSDP growth rates in 2019-20. A positive correlation between social sector performance and economic development was also observed in Assam, Chhattisgarh, Jharkhand, Maharashtra, Manipur, Rajasthan, Uttar Pradesh, and West Bengal, which recorded both low social sector performance and low GSDP growth rates during the same period.

However, in 2019-20, several states-namely Goa, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Punjab, Sikkim, Andhra Pradesh, Arunachal Pradesh, Bihar, Gujarat, Madhya Pradesh, Meghalaya, Odisha, Nagaland, Tamil Nadu, Tripura, and Uttarakhand-exhibited a negative correlation between social sector performance and economic development. Overall, the GSDP growth rate in most states during 2019-20 was negatively correlated with the SSDI, as illustrated in Fig.3

*B. Section II*

*2. Social sector Development Index and Gross Capital Formation*

Table IV presents the ranks and values of gross capital formation and the Social Sector Development Index (SSDI) for each Indian state in 1992-93. During this period, states such as Maharashtra and Tamil Nadu demonstrated both strong gross capital formation and excellent social sector performance, suggesting a positive correlation between the two.

The study also found a favorable correlation between economic progress and social sector functioning in states such as Assam, Jammu and Kashmir, Meghalaya, Odisha, Rajasthan, and Tripura, which exhibited both low social sector performance and low gross capital formation in 1992-93.

However, states such as Goa, Himachal Pradesh, Kerala, Manipur, Delhi, Bihar, Gujarat, Andhra Pradesh, Madhya Pradesh, Uttar Pradesh, and West Bengal demonstrated a negative correlation between economic development and social sector performance during the same period.

Therefore, in most states during 1992-93, the SSDI and gross capital formation were negatively correlated. Fig.4 illustrates that most states in 1992-93 exhibited a negative correlation between the SSDI and gross capital formation.

TABLE IV SOCIAL SECTOR DEVELOPMENT INDEX AND GROSS CAPITAL FORMATION FOR THE YEAR 1992-93

| States/UTs | Social Sector Development Index | Rank | Gross Capital Formation | Rank |
|---|---|---|---|---|
| Kerala | 0.830 | 1 | 771 | 14 |
| Goa | 0.811 | 2 | 178 | 18 |
| Delhi | 0.711 | 3 | 593 | 15 |
| Punjab | 0.628 | 4 | 1719 | 10 |
| Tamil Nadu | 0.584 | 5 | 6384 | 3 |
| Maharashtra | 0.575 | 6 | 10688 | 1 |
| Himachal Pradesh | 0.548 | 7 | 342 | 16 |
| Manipur | 0.528 | 8 | 3 | 21 |
| Haryana | 0.503 | 9 | 1293 | 13 |
| Gujarat | 0.491 | 10 | 9150 | 2 |
| Jammu & Kashmir | 0.473 | 11 | 34 | 19 |
| Karnataka | 0.447 | 12 | 1900 | 9 |
| Andhra Pradesh | 0.427 | 13 | 3948 | 6 |
| Meghalaya | 0.424 | 14 | 19 | 20 |
| West Bengal | 0.386 | 15 | 3605 | 7 |
| Tripura | 0.372 | 16 | 3 | 21 |
| Rajasthan | 0.323 | 17 | 1705 | 11 |
| Madhya Pradesh | 0.313 | 18 | 4504 | 5 |
| Odisha | 0.303 | 19 | 1643 | 12 |
| Assam | 0.292 | 20 | 321 | 17 |
| Uttar Pradesh | 0.244 | 21 | 5144 | 4 |
| Bihar | 0.209 | 22 | 2196 | 8 |

Source: Handbook of Statistics on Indian States, Reserve Bank of India

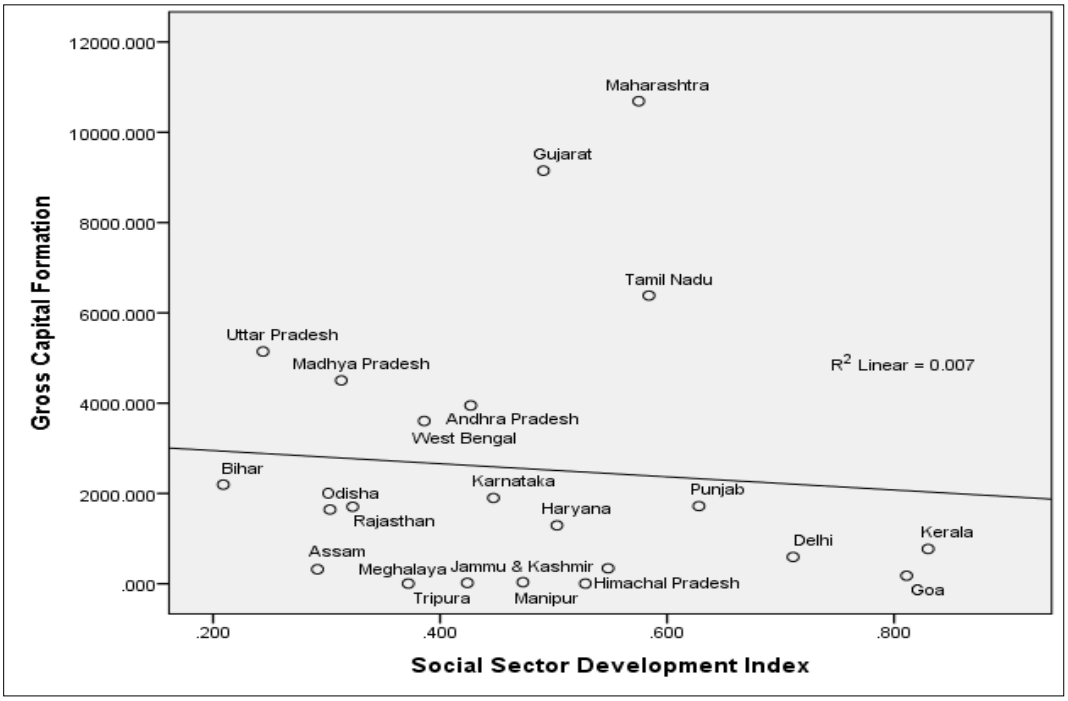


Fig.4 Relationship between Social Sector Development Index and Gross Capital Formation in 1992-93

TABLE V SOCIAL SECTOR DEVELOPMENT INDEX AND GROSS CAPITAL FORMATION FOR 2005-06

| States/UTs | Social Sector Development Index | Rank | Gross Capital Formation | Rank |
|---|---|---|---|---|
| Kerala | 0.843 | 1 | 2305 | 16 |
| Goa | 0.833 | 2 | 1084 | 19 |
| Tamil Nadu | 0.772 | 3 | 19175 | 3 |
| Delhi | 0.765 | 4 | 800 | 20 |
| Punjab | 0.707 | 5 | 4308 | 12 |
| Himachal Pradesh | 0.673 | 6 | 2338 | 15 |
| Maharashtra | 0.640 | 7 | 28805 | 2 |
| Uttarakhand | 0.609 | 8 | 2134 | 17 |
| Haryana | 0.604 | 9 | 5748 | 8 |
| Karnataka | 0.603 | 10 | 14155 | 4 |
| Jammu & Kashmir | 0.557 | 11 | 535 | 21 |
| Gujarat | 0.543 | 12 | 33064 | 1 |
| Andhra Pradesh | 0.529 | 13 | 10751 | 5 |
| Tripura | 0.497 | 14 | 128 | 22 |
| West Bengal | 0.486 | 15 | 4447 | 11 |
| Nagaland | 0.485 | 16 | 10 | 24 |
| Meghalaya | 0.425 | 17 | 68 | 23 |
| Assam | 0.421 | 18 | 1234 | 18 |
| Odisha | 0.406 | 19 | 7931 | 7 |
| Rajasthan | 0.380 | 20 | 3699 | 14 |
| Madhya Pradesh | 0.352 | 21 | 3918 | 13 |
| Chhattisgarh | 0.347 | 22 | 5625 | 9 |
| Uttar Pradesh | 0.327 | 23 | 10678 | 6 |
| Jharkhand | 0.240 | 24 | 5199 | 10 |
| Bihar | 0.156 | 25 | -580 | 25 |

Source: Handbook of Statistics on Indian States, Reserve Bank of India

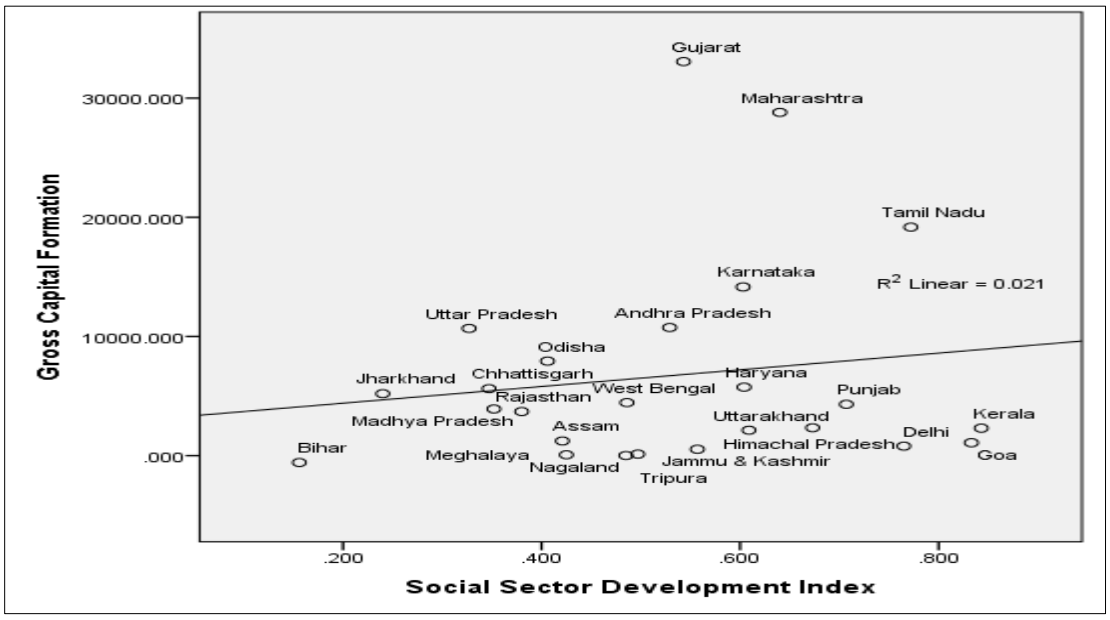


Fig.5 Relationship between Social Sector Development Index and Gross Capital Formation in 2005-06

TABLE VI SOCIAL SECTOR DEVELOPMENT INDEX AND GROSS CAPITAL FORMATION FOR THE YEAR 2019-20

| States/UTs | Social Sector Development Index | Rank | Gross Capital Formation | Rank |
|---|---|---|---|---|
| Kerala | 0.777 | 1 | 7585 | 13 |
| Goa | 0.772 | 2 | 2700 | 18 |
| Sikkim | 0.771 | 3 | 573 | 23 |
| Delhi | 0.731 | 4 | 1004 | 22 |
| Punjab | 0.710 | 5 | 9721 | 12 |
| Tamil Nadu | 0.706 | 6 | 48866 | 3 |
| Himachal Pradesh | 0.669 | 7 | 5836 | 15 |
| Jammu & Kashmir | 0.648 | 8 | 1112 | 21 |
| Haryana | 0.631 | 9 | 31741 | 5 |
| Manipur | 0.624 | 10 | 23 | 26 |
| West Bengal | 0.616 | 11 | 14901 | 11 |
| Karnataka | 0.611 | 12 | 36732 | 4 |
| Uttarakhand | 0.605 | 13 | 7423 | 14 |
| Maharashtra | 0.596 | 14 | 81476 | 2 |
| Nagaland | 0.581 | 15 | 4 | 28 |
| Tripura | 0.571 | 16 | 81 | 25 |
| Andhra Pradesh | 0.567 | 17 | 27702 | 7 |
| Arunachal Pradesh | 0.538 | 18 | 21 | 27 |
| Gujarat | 0.536 | 19 | 88955 | 1 |
| Odisha | 0.528 | 20 | 2109 | 19 |
| Rajasthan | 0.527 | 21 | 17784 | 9 |
| Assam | 0.500 | 22 | 3298 | 16 |
| Chhattisgarh | 0.484 | 23 | 15399 | 10 |
| Madhya Pradesh | 0.444 | 24 | 19151 | 8 |
| Uttar Pradesh | 0.436 | 25 | 29711 | 6 |
| Jharkhand | 0.426 | 26 | 1942 | 20 |
| Meghalaya | 0.426 | 26 | 129 | 24 |
| Bihar | 0.392 | 28 | 3224 | 17 |

Source: Handbook of Statistics on Indian States, Reserve Bank of India

The rankings and values of the Social Sector Development Index (SSDI) and gross capital formation for each Indian state during 2019-20 is presented in Table VI. States such as Haryana and Tamil Nadu demonstrated both high social sector performance and high gross capital formation in 2019-20, suggesting a favorable correlation between economic development and social sector performance.

Additionally, a positive correlation between economic progress and social sector performance was observed in states such as Arunachal Pradesh, Assam, Bihar, Jharkhand, Meghalaya, Nagaland, Odisha, Tripura, Uttarakhand, and West Bengal, all of which exhibited low social sector performance along with low gross capital formation during the same period. In contrast, states such as Goa, Himachal Pradesh, Jammu and Kashmir, Kerala, Karnataka, Punjab, Sikkim, Delhi, Andhra Pradesh, Gujarat, Chhattisgarh, Madhya Pradesh, Maharashtra, Manipur, Rajasthan, and Uttar Pradesh demonstrated a negative correlation between economic development and social sector performance.

Thus, the SSDI and gross capital formation were negatively correlated in most states during 2019-20. Fig.6 illustrates that most states exhibited a negative correlation between the SSDI and gross capital formation during this period.

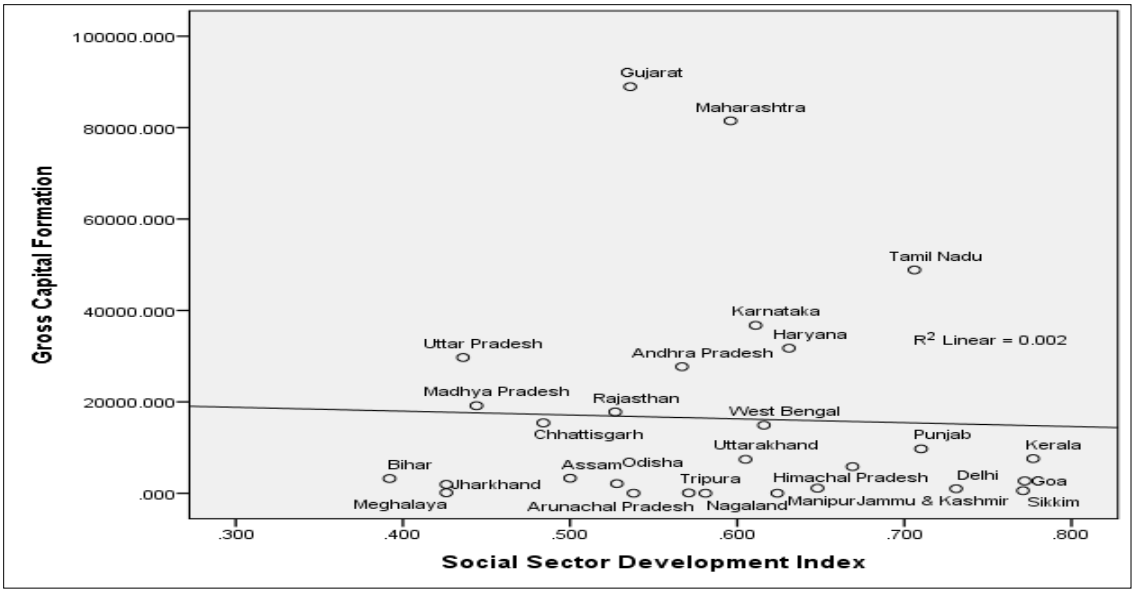


Fig.6 Relationship between Social Sector Development Index and Gross Capital Formation in 2019-20

*C. Section III*

*3. Social Sector Development Index and Poverty Index*

The values and rankings of the Human Poverty Index (HPI) and the Social Sector Development Index (SSDI) for each Indian state in 1992-93 is shown in Table VII. States such as Kerala, Goa, Mizoram, Delhi, Punjab, Tamil Nadu, Maharashtra, and Himachal Pradesh-with high SSDI values-performed better in terms of human poverty, exhibiting low HPI values during 1992-93. In contrast, states such as Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Jammu and Kashmir, Karnataka, Madhya Pradesh, Manipur, Meghalaya, Odisha, Rajasthan, Tripura, Uttar Pradesh, and West Bengal-characterized by low SSDI values-performed worse, with high HPI values during the same period. Overall, the table shows that states with higher SSDI values tend to have lower levels of human poverty. Fig.7 also illustrates the negative relationship between the HPI and the SSDI for 1992-93.

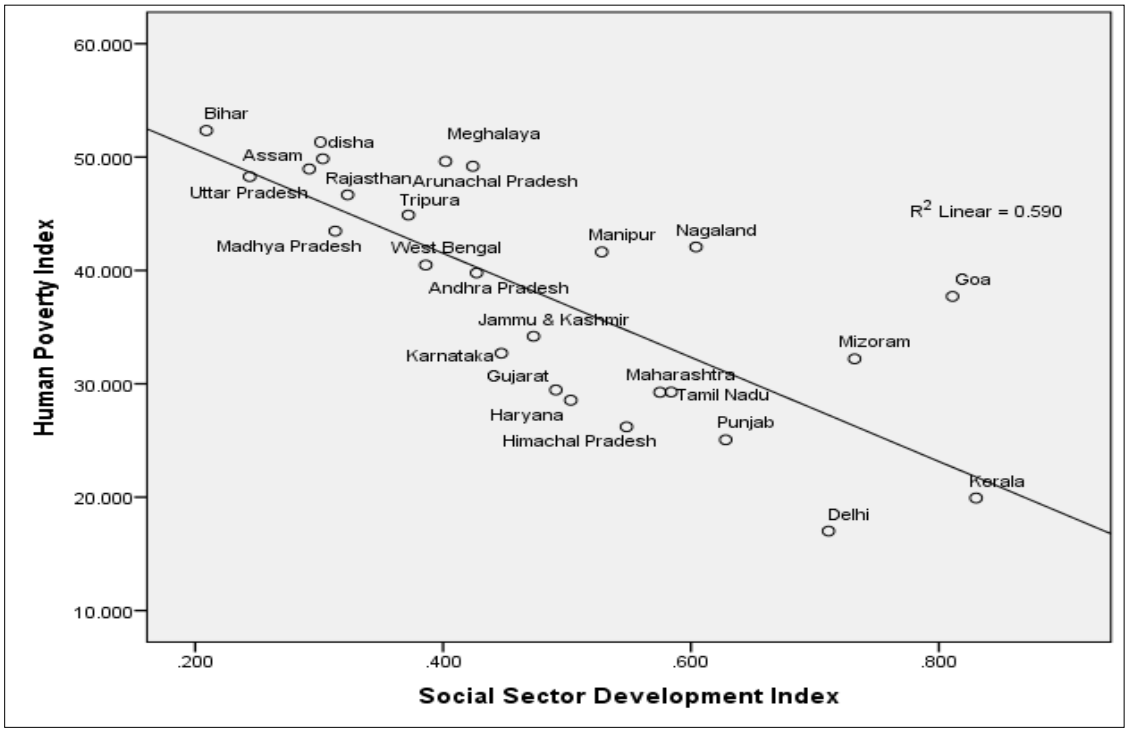


Fig.7 Relationship Between Social Sector Development Index and Human Poverty Index in 1992-93

TABLE VII SOCIAL SECTOR DEVELOPMENT INDEX AND HUMAN POVERTY INDEX FOR THE YEAR 1992-93

| States/UTs | Social Sector Development Index | Rank | Human Poverty Index | Rank |
|---|---|---|---|---|
| Kerala | 0.830 | 1 | 19.93 | 2 |
| Goa | 0.811 | 2 | 37.71 | 12 |
| Mizoram | 0.732 | 3 | 32.20 | 9 |
| Delhi | 0.711 | 4 | 17.01 | 1 |
| Punjab | 0.628 | 5 | 25.06 | 3 |
| Nagaland | 0.604 | 6 | 42.07 | 16 |
| Tamil Nadu | 0.584 | 7 | 29.28 | 7 |
| Maharashtra | 0.575 | 8 | 29.25 | 6 |
| Himachal Pradesh | 0.548 | 9 | 26.21 | 4 |
| Manipur | 0.528 | 10 | 41.63 | 15 |
| Haryana | 0.503 | 11 | 28.55 | 5 |
| Gujarat | 0.491 | 12 | 29.46 | 8 |
| Jammu & Kashmir | 0.473 | 13 | 34.19 | 11 |
| Karnataka | 0.447 | 14 | 32.70 | 10 |
| Andhra Pradesh | 0.427 | 15 | 39.78 | 13 |
| Meghalaya | 0.424 | 16 | 49.19 | 22 |
| Arunachal Pradesh | 0.402 | 17 | 49.62 | 23 |
| West Bengal | 0.386 | 18 | 40.48 | 14 |
| Tripura | 0.372 | 19 | 44.89 | 18 |
| Rajasthan | 0.323 | 20 | 46.67 | 19 |
| Madhya Pradesh | 0.313 | 21 | 43.47 | 17 |
| Odisha | 0.303 | 22 | 49.85 | 24 |
| Assam | 0.292 | 23 | 48.95 | 21 |
| Uttar Pradesh | 0.244 | 24 | 48.27 | 20 |
| Bihar | 0.209 | 25 | 52.34 | 25 |

Source: National Human Development Report 2001

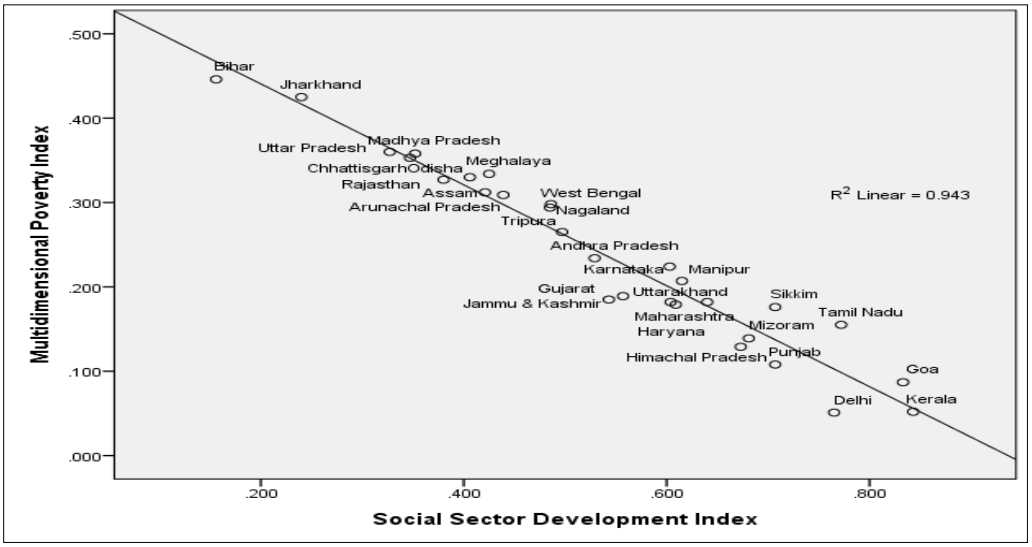


Fig.8 Relationship between Social Sector Development Index and Multidimensional Poverty Index in 2005-06

The values and rankings of the Multidimensional Poverty Index (MPI) and the Social Sector Development Index (SSDI) for each Indian state in 2005-06 are presented in Table VIII. States such as Kerala, Goa, Delhi, Punjab, Tamil

Nadu, Mizoram, Himachal Pradesh, and Sikkim-with high SSDI values-performed better in terms of multidimensional poverty, exhibiting low MPI values during 2005-06. In contrast, states such as Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Odisha, Rajasthan, Tripura, Uttar Pradesh, and West Bengal-with low SSDI values-performed worse, displaying high MPI values during the same period. Overall, the table shows that states with higher SSDI values tend to have lower multidimensional poverty. The negative correlation between the MPI and the SSDI in 2005-06 is also illustrated in Fig.8.

TABLE VIII SOCIAL SECTOR DEVELOPMENT INDEX AND MULTIDIMENSIONAL POVERTY INDEX FOR 2005-06

| States/UTs | Social Sector Development Index | Rank | Multidimensional Poverty Index | Rank |
|---|---|---|---|---|
| Kerala | 0.843 | 1 | 0.052 | 2 |
| Goa | 0.833 | 2 | 0.087 | 3 |
| Tamil Nadu | 0.772 | 3 | 0.155 | 7 |
| Delhi | 0.765 | 4 | 0.051 | 1 |
| Punjab | 0.707 | 5 | 0.108 | 4 |
| Sikkim | 0.707 | 5 | 0.176 | 8 |
| Mizoram | 0.681 | 7 | 0.139 | 6 |
| Himachal Pradesh | 0.673 | 8 | 0.129 | 5 |
| Maharashtra | 0.640 | 9 | 0.182 | 10 |
| Manipur | 0.615 | 10 | 0.207 | 14 |
| Uttarakhand | 0.609 | 11 | 0.179 | 9 |
| Haryana | 0.604 | 12 | 0.182 | 10 |
| Karnataka | 0.603 | 13 | 0.224 | 15 |
| Jammu & Kashmir | 0.557 | 14 | 0.189 | 13 |
| Gujarat | 0.543 | 15 | 0.185 | 12 |
| Andhra Pradesh | 0.529 | 16 | 0.234 | 16 |
| Tripura | 0.497 | 17 | 0.265 | 17 |
| West Bengal | 0.486 | 18 | 0.298 | 19 |
| Nagaland | 0.485 | 19 | 0.294 | 18 |
| Arunachal Pradesh | 0.439 | 20 | 0.309 | 20 |
| Meghalaya | 0.425 | 21 | 0.334 | 24 |
| Assam | 0.421 | 22 | 0.312 | 21 |
| Odisha | 0.406 | 23 | 0.330 | 23 |
| Rajasthan | 0.380 | 24 | 0.327 | 22 |
| Madhya Pradesh | 0.352 | 25 | 0.358 | 26 |
| Chhattisgarh | 0.347 | 26 | 0.353 | 25 |
| Uttar Pradesh | 0.327 | 27 | 0.360 | 27 |
| Jharkhand | 0.240 | 28 | 0.425 | 28 |
| Bihar | 0.156 | 29 | 0.446 | 29 |

Source: Global Multidimensional Poverty Index 2018

Table IX displays the values and rankings of the Multidimensional Poverty Index (MPI) and the Social Sector Development Index (SSDI) for each Indian state in 2015-16. States such as Kerala, Goa, Delhi, Sikkim, Punjab, Tamil Nadu, Mizoram, and Himachal Pradesh-with high SSDI values-performed better in relation to multidimensional poverty, exhibiting low MPI values during 2015-16. In contrast, states such as Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Odisha, Rajasthan, Tripura, Uttar Pradesh, Uttarakhand, and West Bengal-with low SSDI values-performed worse in terms of multidimensional poverty, showing high MPI values during the same period. Overall, the table indicates that states with the highest SSDI values tend to have lower multidimensional poverty. The inverse relationship between the MPI and the SSDI for 2015-16 is also illustrated in Fig.9.

TABLE IX SOCIAL SECTOR DEVELOPMENT INDEX AND MULTIDIMENSIONAL POVERTY INDEX FOR 2015-16

| States/UTs | Social Sector Development Index | Rank | Multidimensional Poverty Index | Rank |
|---|---|---|---|---|
| Kerala | 0.816 | 1 | 0.003 | 1 |
| Goa | 0.794 | 2 | 0.015 | 2 |
| Delhi | 0.752 | 3 | 0.021 | 5 |
| Sikkim | 0.747 | 4 | 0.016 | 3 |
| Punjab | 0.737 | 5 | 0.024 | 6 |
| Tamil Nadu | 0.711 | 6 | 0.020 | 4 |
| Mizoram | 0.683 | 7 | 0.046 | 8 |
| Manipur | 0.663 | 8 | 0.080 | 16 |
| Himachal Pradesh | 0.661 | 9 | 0.030 | 7 |
| Tripura | 0.660 | 10 | 0.075 | 14 |
| Haryana | 0.643 | 11 | 0.055 | 10 |
| Maharashtra | 0.638 | 12 | 0.065 | 13 |
| Karnataka | 0.635 | 13 | 0.056 | 12 |
| Arunachal Pradesh | 0.621 | 14 | 0.115 | 19 |
| Jammu & Kashmir | 0.614 | 15 | 0.055 | 10 |
| Gujarat | 0.599 | 16 | 0.084 | 17 |
| Nagaland | 0.593 | 17 | 0.117 | 20 |
| Andhra Pradesh | 0.581 | 18 | 0.053 | 9 |
| Uttarakhand | 0.569 | 19 | 0.079 | 15 |
| West Bengal | 0.553 | 20 | 0.097 | 18 |
| Rajasthan | 0.525 | 21 | 0.140 | 23 |
| Odisha | 0.498 | 22 | 0.136 | 22 |
| Chhattisgarh | 0.454 | 23 | 0.134 | 21 |
| Meghalaya | 0.443 | 24 | 0.157 | 25 |
| Madhya Pradesh | 0.435 | 25 | 0.173 | 26 |
| Jharkhand | 0.419 | 26 | 0.202 | 28 |
| Assam | 0.416 | 27 | 0.156 | 24 |
| Uttar Pradesh | 0.399 | 28 | 0.180 | 27 |
| Bihar | 0.351 | 29 | 0.265 | 29 |

Source: National Multidimensional Poverty Index Report: NITI Aayog, 2021

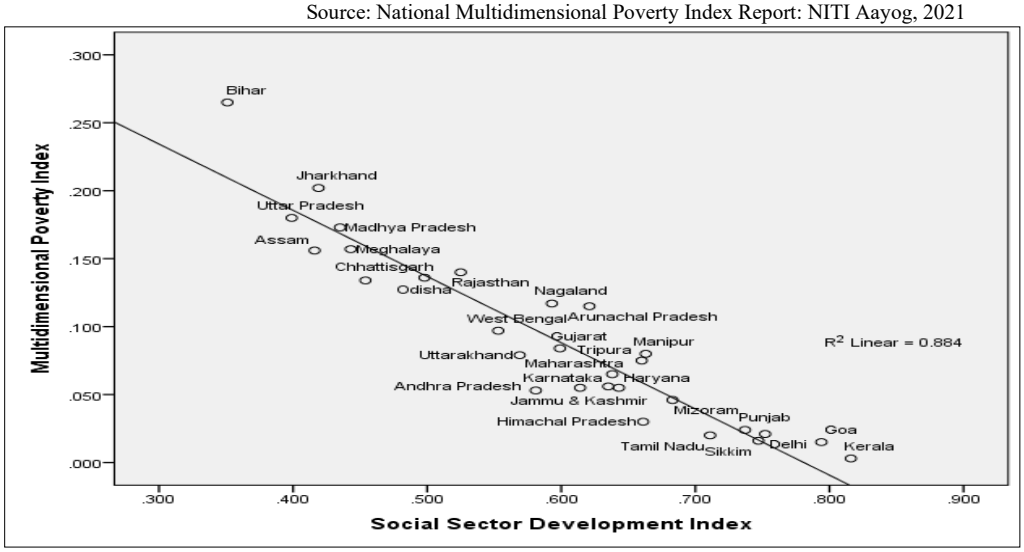


Fig.9 Relationship between Social Sector Development Index and Multidimensional Poverty Index in 2015-16

*D. Section IV*

*4. Social Sector Development Index and Unemployment Rate*

Table X presents the unemployment rate and the Social Sector Development Index (SSDI) ranks and values for Indian states in 1992-93. States such as Assam, Bihar, Gujarat, Haryana, Jammu and Kashmir, Manipur, Odisha, Tripura, and West Bengal-with low levels of social sector performance and high unemployment rates-performed poorly during 1992-93. In contrast, Mizoram, which exhibited a high level of social sector performance and a low unemployment rate, performed well during the same period.

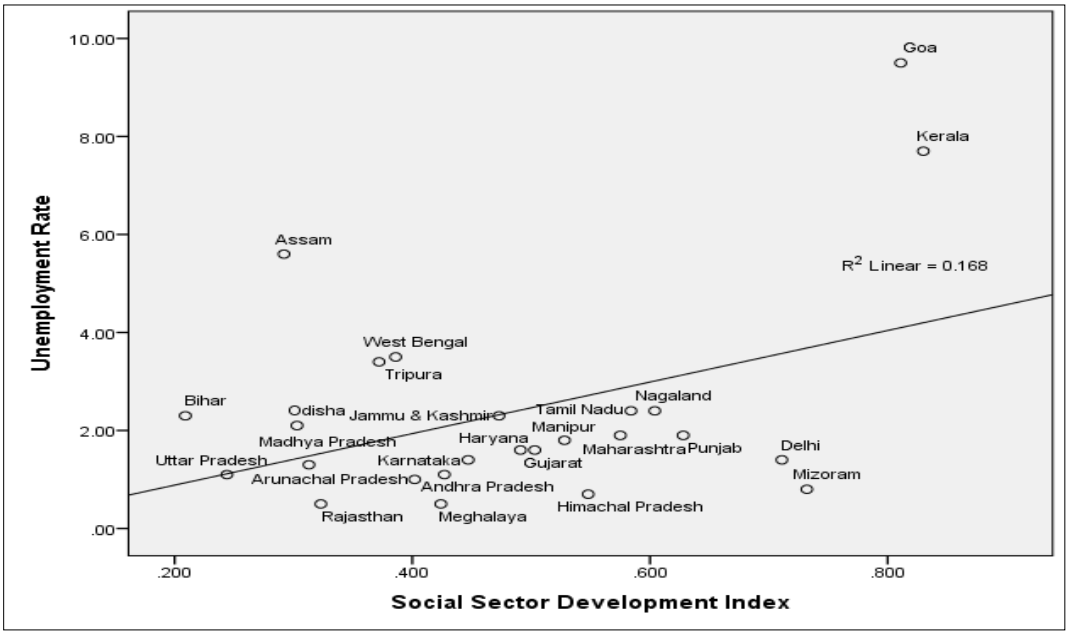


Fig.10 Relationship between Social Sector Development Index and Unemployment Rate in 1992-93

TABLE X SOCIAL SECTOR DEVELOPMENT INDEX AND UNEMPLOYMENT RATE FOR 1992-93

| States/UTs | Social Sector Development Index | Rank | Unemployment Rate | Rank |
|---|---|---|---|---|
| Kerala | 0.830 | 1 | 7.7 | 24 |
| Goa | 0.811 | 2 | 9.5 | 25 |
| Mizoram | 0.732 | 3 | 0.8 | 4 |
| Delhi | 0.711 | 4 | 1.4 | 9 |
| Punjab | 0.628 | 5 | 1.9 | 14 |
| Nagaland | 0.604 | 6 | 2.4 | 19 |
| Tamil Nadu | 0.584 | 7 | 2.4 | 19 |
| Maharashtra | 0.575 | 8 | 1.9 | 14 |
| Himachal Pradesh | 0.548 | 9 | 0.7 | 3 |
| Manipur | 0.528 | 10 | 1.8 | 13 |
| Haryana | 0.503 | 11 | 1.6 | 11 |
| Gujarat | 0.491 | 12 | 1.6 | 11 |
| Jammu & Kashmir | 0.473 | 13 | 2.3 | 17 |
| Karnataka | 0.447 | 14 | 1.4 | 9 |
| Andhra Pradesh | 0.427 | 15 | 1.1 | 6 |
| Meghalaya | 0.424 | 16 | 0.5 | 1 |
| Arunachal Pradesh | 0.402 | 17 | 1.0 | 5 |
| West Bengal | 0.386 | 18 | 3.5 | 22 |
| Tripura | 0.372 | 19 | 3.4 | 21 |
| Rajasthan | 0.323 | 20 | 0.5 | 1 |
| Madhya Pradesh | 0.313 | 21 | 1.3 | 8 |
| Odisha | 0.303 | 22 | 2.1 | 16 |
| Assam | 0.292 | 23 | 5.6 | 23 |
| Uttar Pradesh | 0.244 | 24 | 1.1 | 6 |
| Bihar | 0.209 | 25 | 2.3 | 17 |

Source: National Human Development Report 2001

States such as Kerala, Goa, Punjab, Nagaland, Tamil Nadu, and Maharashtra ranked highly in social sector performance and were positioned at the bottom in terms of unemployment rate rankings in 1992-93. Conversely, states including Meghalaya, Rajasthan, Arunachal Pradesh, Andhra Pradesh, Uttar Pradesh, Madhya Pradesh, and Karnataka-despite having low unemployment rates-performed poorly in the social sector during the same study period.

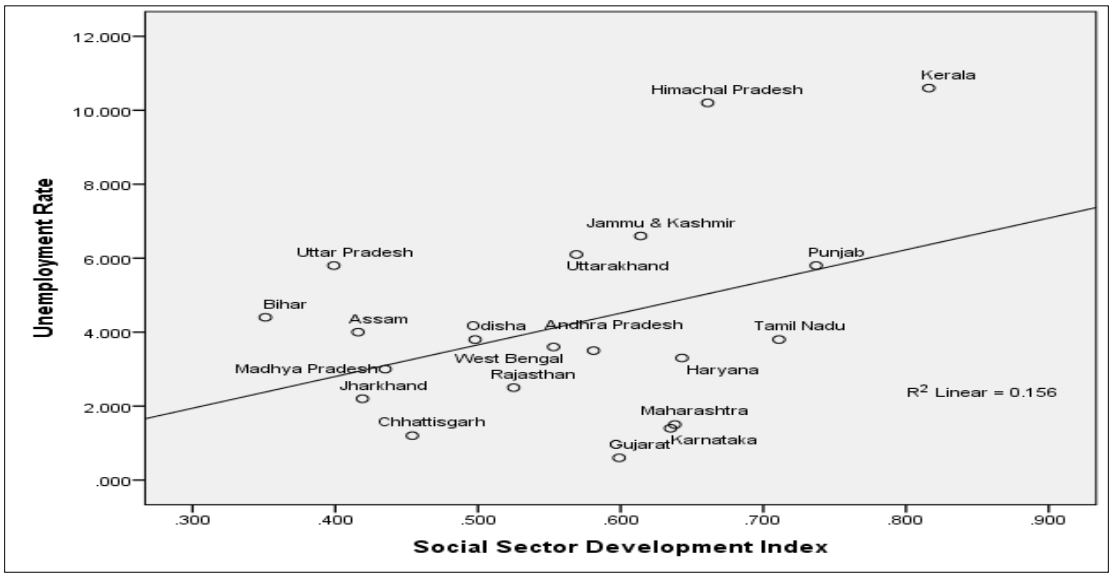


Fig.11 Relationship between Social Sector Development Index and Unemployment Rate in 2015-16

TABLE XI SOCIAL SECTOR DEVELOPMENT INDEX AND UNEMPLOYMENT RATE FOR THE YEAR 2015-16

| States/UTs | Social Sector Development Index | Rank | Unemployment Rate | Rank |
|---|---|---|---|---|
| Kerala | 0.816 | 1 | 10.6 | 20 |
| Punjab | 0.737 | 2 | 5.8 | 15 |
| Tamil Nadu | 0.711 | 3 | 3.8 | 11 |
| Himachal Pradesh | 0.661 | 4 | 10.2 | 19 |
| Haryana | 0.643 | 5 | 3.3 | 8 |
| Maharashtra | 0.638 | 6 | 1.5 | 4 |
| Karnataka | 0.635 | 7 | 1.4 | 3 |
| Jammu & Kashmir | 0.614 | 8 | 6.6 | 18 |
| Gujarat | 0.599 | 9 | 0.6 | 1 |
| Andhra Pradesh | 0.581 | 10 | 3.5 | 9 |
| Uttarakhand | 0.569 | 11 | 6.1 | 17 |
| West Bengal | 0.553 | 12 | 3.6 | 10 |
| Rajasthan | 0.525 | 13 | 2.5 | 6 |
| Odisha | 0.498 | 14 | 3.8 | 11 |
| Chhattisgarh | 0.454 | 15 | 1.2 | 2 |
| Madhya Pradesh | 0.435 | 16 | 3.0 | 7 |
| Jharkhand | 0.419 | 17 | 2.2 | 5 |
| Assam | 0.416 | 18 | 4.0 | 13 |
| Uttar Pradesh | 0.399 | 19 | 5.8 | 15 |
| Bihar | 0.351 | 20 | 4.4 | 14 |

Source: Economic Survey 2016-17

The values and rankings of the unemployment rate and the Social Sector Development Index (SSDI) for each Indian state in 2015-16 is shown in Table XI. States such as Assam, Bihar, Odisha, Uttar Pradesh, Uttarakhand, and West Bengal-

with low levels of social sector performance and high unemployment rates-performed poorly during 2015-16. In contrast, Maharashtra and Karnataka, which demonstrated high social sector performance and low unemployment rates, performed better during the same period. States like Kerala, Punjab, Tamil Nadu, Himachal Pradesh, and Jammu and Kashmir ranked highest in social sector performance and were positioned at the bottom in terms of unemployment rate rankings in 2015-16. Conversely, states such as Gujarat, Chhattisgarh, Jharkhand, Rajasthan, and Madhya Pradesh-with low unemployment rates-secured top positions in that category but performed poorly in the social sector during the same period. The rankings and values of the Social Sector Development Index (SSDI) and the unemployment rate for each Indian state in 2019-20 is presented in Table XII.

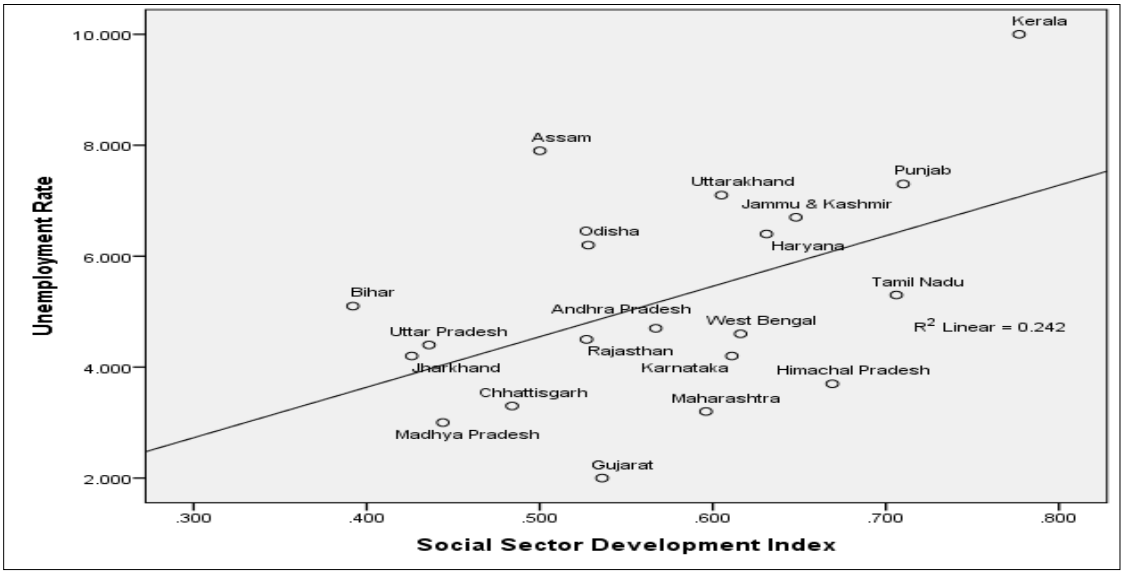


Fig.12 Relationship between Social Sector Development Index and Unemployment Rate during 2019-20

TABLE XII SOCIAL SECTOR DEVELOPMENT INDEX AND UNEMPLOYMENT RATE FOR 2019-20

| States/UTs | Social Sector Development Index | Rank | Unemployment Rate | Rank |
|---|---|---|---|---|
| Kerala | 0.777 | 1 | 10.0 | 20 |
| Punjab | 0.710 | 2 | 7.3 | 18 |
| Tamil Nadu | 0.706 | 3 | 5.3 | 13 |
| Himachal Pradesh | 0.669 | 4 | 3.7 | 5 |
| Jammu & Kashmir | 0.648 | 5 | 6.7 | 16 |
| Haryana | 0.631 | 6 | 6.4 | 15 |
| West Bengal | 0.616 | 7 | 4.6 | 10 |
| Karnataka | 0.611 | 8 | 4.2 | 6 |
| Uttarakhand | 0.605 | 9 | 7.1 | 17 |
| Maharashtra | 0.596 | 10 | 3.2 | 3 |
| Andhra Pradesh | 0.567 | 11 | 4.7 | 11 |
| Gujarat | 0.536 | 12 | 2.0 | 1 |
| Odisha | 0.528 | 13 | 6.2 | 14 |
| Rajasthan | 0.527 | 14 | 4.5 | 9 |
| Assam | 0.500 | 15 | 7.9 | 19 |
| Chhattisgarh | 0.484 | 16 | 3.3 | 4 |
| Madhya Pradesh | 0.444 | 17 | 3.0 | 2 |
| Uttar Pradesh | 0.436 | 18 | 4.4 | 8 |
| Jharkhand | 0.426 | 19 | 4.2 | 6 |
| Bihar | 0.392 | 20 | 5.1 | 12 |

Source: Economic Survey 2021-22

States such as Andhra Pradesh, Assam, Bihar, Odisha, Rajasthan, and Uttarakhand-with low levels of social sector performance and high unemployment rates-performed poorly during 2019-20. In contrast, Himachal Pradesh and Karnataka, which demonstrated high social sector performance and low unemployment rates, performed better during the same period. States such as Kerala, Punjab, Tamil Nadu, Jammu and Kashmir, and Haryana ranked highest in social sector performance and were positioned at the bottom in terms of unemployment rate rankings in 2019-20. Conversely, states such as Gujarat, Madhya Pradesh, Maharashtra, Chhattisgarh, Jharkhand, and Uttar Pradesh-with low unemployment rates-occupied top positions in that category but performed poorly in the social sector during the same period.

## VI. CONCLUSION

The relationship between the social sector and economic development has been examined by comparing the Social Sector Development Index (SSDI) of Indian states with unemployment rate, poverty indices, GSDP growth rate, and gross capital formation. The SSDI and GSDP growth rate were found to be positively correlated in the majority of states during 1992-93 and 2005-06. However, in 2019-20, a negative correlation between the SSDI and GSDP growth rate was observed in most states. Between 1992-93 and 2019-20, the study identified a negative correlation between the SSDI and gross capital formation in the majority of states. Notably, in 2005-06, several states-such as Haryana, Maharashtra, Tamil Nadu, Assam, Bihar, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Meghalaya, Nagaland, Rajasthan, Tripura, and West Bengal-demonstrated a favorable correlation between the SSDI and gross capital formation.

States such as Kerala, Goa, Mizoram, Delhi, Punjab, Tamil Nadu, Maharashtra, and Himachal Pradesh-with the highest SSDI values and lowest Human Poverty Index (HPI) values-performed better in 1992-93. In contrast, states including Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Meghalaya, Nagaland, Odisha, Rajasthan, Tripura, Uttar Pradesh, and West Bengal-with the lowest SSDI values and highest Multidimensional Poverty Index (MPI) values-performed worse during 2005-06 and 2015-16. The Indian government has implemented several programs to enhance literacy, promote educational advancement, and reduce the gender gap.

Similarly, improving the health and longevity of the poor serves as both a means and an end in achieving economic development and poverty reduction. Many countries have recognized that the burden of illness is a major barrier to economic progress and, therefore, must be a central focus of any comprehensive development strategy. Given the significant impact of health and education on economic growth and development, the government must take an active role in providing these essential social services.

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**Use of Artificial Intelligence (AI)-Assisted Technology for Manuscript Preparation**
The authors confirm that no AI-assisted technologies were used in the preparation or writing of the manuscript, and no images were altered using AI.

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