

## **Social sector expenditure and Human Development: A Study of Indian States**

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### **Abstract**

*This paper examines the correlation between social sector expenditure and the Human Development Index (HDI) across 24 Indian states over three decades, spanning from 1991 to 2021. It explores various research questions, notably investigating the presence of a long run equilibrium between social sector spending and HDI scores, and assessing the comparative impact of expenditure per capita on education versus per capita income (GSDP) on the education index. Furthermore, it examines the allocation and effectiveness of public funds in education and health across states with divergent HDI standings. Employing a methodological framework encompassing panel data analysis, cointegration assessment, fixed effect regression modeling, and a comparative study of Kerala and Bihar, the research reveals a significant association between social sector expenditure per capita and HDI, underlining the pivotal role of public investment in nurturing human development. Findings from the regression analysis underscore the substantial influence of both education expenditure per capita and per capita GSDP on the education index. Through comparative analysis, the paper reveals the significance of decentralized governance and grassroots empowerment in driving heightened HDI levels, as exemplified by Kerala, while also elucidating the obstacles confronting states such as Bihar in achieving balanced development outcomes.*

**Keywords:** *Social sector expenditure, Human Development Index (HDI), Decentralized governance, Cointegration analysis*

## **Introduction**

The relationship between social sector expenditure and Human Development holds profound significance within the realm of development economics, particularly in the context of emerging economies like India. This research is dedicated to exploring the interplay between government spending on essential services and its subsequent impact on human well-being and development indicators. India, characterized by a burgeoning population and a diverse socio-economic landscape, grapples with various challenges in ensuring equitable access to healthcare, education, and other essential services. Understanding the relationship between social sector expenditure and the Human Development Index (HDI) is thus imperative for policymakers and economists alike.

Over the span of three decades, this study examines data pertaining to social sector expenditure and HDI outcomes across 24 Indian states. By doing so, it aims to explore the fundamental patterns and discern the factors influencing human development indicators. The motivation behind this research stems from recognizing social sector expenditure as a pivotal instrument for promoting inclusive growth, sustainable development, and poverty alleviation. Despite concerted efforts by governments to allocate resources efficiently towards education, healthcare, and other vital sectors, regional disparities persist, underscoring the crucial need to comprehend the relationship between expenditure patterns and development outcomes.

Moreover, the significance of conducting a state-wise analysis lies in its capacity to provide a deeper understanding of the factors contributing to variations in human development outcomes across different regions. States grappling with challenges such as low HDI scores stand to gain valuable insights from the experiences of states that have successfully improved their social indicators. By closely examining the strategies and policies implemented by high-performing states, policymakers in less developed regions can contribute to enhanced human well-being, thereby fostering the narrowing of development disparities.

## **Research gap**

The rationale behind this study emerges from a recognized gap in existing research, particularly concerning the enduring impacts of social sector expenditure on developmental outcomes. While prior studies have explored the immediate effects of such investments on human development indicators and economic growth, there remains a notable absence of

comprehensive analysis into their long-term sustainability. This research aims to fill this void by investigating how social sector spending influences developmental outcomes over extended periods, thereby shedding light on its enduring significance.

A review of existing literature reveals the presence of disparities in the allocation and effectiveness of social sector expenditure across states and sectors, notably within healthcare and education. Despite this recognition, further research is warranted to uncover the underlying factors contributing to these disparities and to devise targeted interventions to mitigate them effectively. Moreover, while numerous studies have explored the broader relationship between social sector spending and the Human Development Index (HDI), there remains a significant gap concerning the prioritization of education. Given the pivotal role of education in contemporary society, this research aims to address this gap by focusing specifically on the influence of education expenditure and income on educational outcomes. In an era where knowledge and skills are increasingly recognized as critical drivers of economic growth and social progress, understanding the interplay between education expenditure, income, and educational outcomes holds paramount importance.

### **Data and methodology**

Data used in this research is secondary data. The sub-national Human Development Index data which is a crucial metric for assessing human development is collected from the Global Data Lab. Detailed data pertaining to social sector expenditure and GSDP of the 24 selected states for the years 1991 to 2021 is obtained from the Economic and Political Weekly (EPW) website. The per capita social sector expenditure and per capita GSDP is calculated by using the population data which is also obtained from the EPW website. The literacy rates data is extracted from [www.indiabudget.gov.in](http://www.indiabudget.gov.in). Other data pertaining to sex ratio, infant mortality rate, maternal mortality rate etc. of Kerala and Bihar is collected from the NFHS surveys.

To explore the potential long-term associations between social sector expenditure and Human Development Index (HDI), we employ cointegration analysis using the per capita social sector expenditure and HDI scores. In the next section, a component wise analysis is made where the education index is taken as the dependent variable and education expenditure per capita and per capita income as independent variables to explore the relative influence of these variables on the education index. In the third section, two states are selected - one that has the highest HDI (Kerala) and the other with the lowest (Bihar)—over the years and the

possible reasons for this disparity are investigated. By combining panel data analysis, comprehensive regression models, and a robust comparative framework, our research aims to throw light on the interplay between social sector expenditure and HDI in Indian states.

### **Review of literature**

The nexus between social sector expenditure and economic growth has emerged as a pivotal topic within the realm of development economics. This relationship has drawn substantial attention both in academic discourse and among policymakers worldwide. In India, a significant portion of the population relies on government-provided essential services. The government has demonstrated a commitment to investing in the social sector, including education, healthcare, skill development, housing, sanitation, and more.

Before the 1990s, the World Bank emphasized income as the main factor that influences human development. However, Amartya Sen's (1993-2000) Capability Approach changed this view. Sen argued that human development shouldn't just be about income or economic growth. Instead, he believed that income, utilities, resources and wealth were tools for achieving human development, not the ultimate goals. Jha, Biswal, and Biswal (2000) analyzed public spending on education, health, and development initiatives in India to assess their impact on poverty reduction. Using unbalanced panel data techniques with NSS data, they found that investments in these sectors contributed significantly to alleviating poverty.

The results from the panel data analysis conducted by Ramesh Chandra Das, Chhanda Mandal and Arun Kumar Patra (2021) in their study which investigates the linkages between social sector's spending and HDI show that social sectors spending and human development are with long-run associations. A study by Priti Agarwal (2015) shows that per capita real income is comparatively more important than 'share of social sector expenditure in development expenditure'. The paper by Meraj Alam and Dastgir Alam found that there is a positive relationship between social sector expenditure and human development in the states.

The study by Madhumita Ray and Minaketan Sarangi (2021) emphasizes the substantial impact of social sector spending on India's economic growth. The causal relationships underscore the interdependence of economic development and social sector investment, suggesting that economic growth prompts increased social spending, which, in turn, contributes to further development.

The findings of Kaur and Misra (2003) revealed that public spending in the education sector had positive impacts on enrolment ratios, particularly in terms of female education. However, they observed that expenditure in the health sector had turned out to be ineffective, indicating a need for better allocation and utilization of resources to address healthcare challenges effectively.

Numerous studies indicate a limited connection between government spending on education and actual educational achievements. However, some research suggests that educational attainment can improve positively through education spending if we account for factors like quality and efficiency (Gallagher, 1993). Similarly, in the realm of healthcare, several studies reveal a weak link between healthcare expenditure and health outcomes, such as infant mortality (Filmer and Pritchett, 1997; Kim and Moody, 1992). Income seems to be a more critical factor influencing health outcomes compared to public spending. In India, this situation often arises from insufficient allocation of resources to healthcare and ineffective targeting, resulting in much of the healthcare expenditure not reaching primary healthcare services (Kaur and Misra 2003).

Arya and Ashwani's (2014) findings indicated that the benefits of social sector expenditures on human development are not immediate and are realized over a few years thereby suggesting the necessity for higher public spending in social services to achieve sustainable growth and development outcomes. Chakrabarty and Joglekar's (2006) findings revealed that income had a significant impact on education expenditure at all levels. Mallick and Dash (2015) highlighted a long-run relationship between educational expenditure and economic growth.

Several authors, including Dev and Mooij (2004), Joshi (2006), and Ghosh (2011), have noted the prevalence of education as the primary focus of social sector expenditure by both state and central governments. However, a comprehensive assessment of the education sector indicates that the attained quality and quantity of education remain unsatisfactory, despite some advancements. Persistent rural-urban and inter-state disparities, as well as gender gaps, continue to prevail (Ghosh, 2011).

In a recent study focusing on specific Indian states, Mohanty and Bhanumurthy (2018) evaluated the efficiency of utilization of public funds in the education and healthcare sectors while considering governance indicators. Their findings showed that states demonstrated

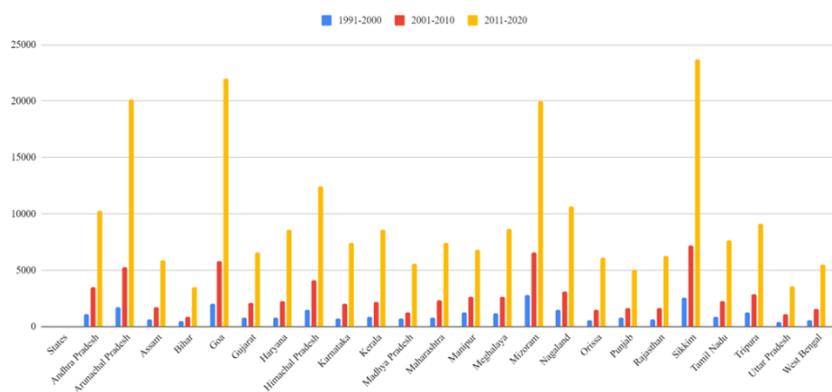
better efficiency in spending resources on education compared to healthcare. They also found that good governance is of statistical significance.

Therefore, while government spending plays a vital role in fostering human development outcomes, challenges persist in ensuring efficient allocation and utilization of resources across various sectors.

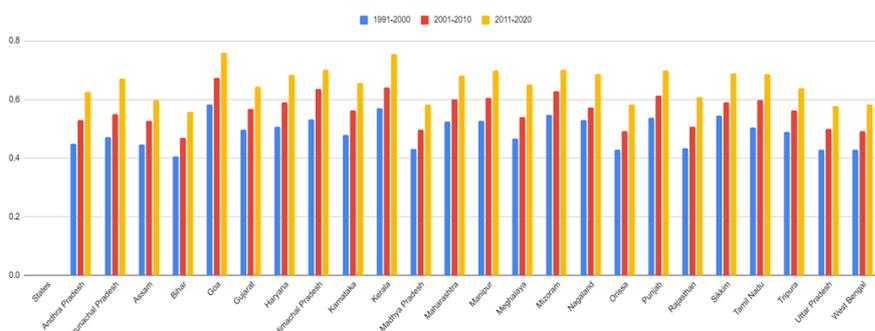
### General trends

The analysis of the data over the thirty year period yields significant results thereby providing a detailed perspective on the interplay between social sector expenditure per capita and Human Development Index scores across the states. This approach highlights how different states have evolved in terms of their investment in social infrastructure and its impact on human development metrics.

**Figure 1:** Average state-wise social sector expenditure per capita over the three decades



**Figure 2:** Average state-wise HDI scores over the three decades



The data has been analyzed by dividing the thirty year period into three periods of ten years each. The initial period is 1991-2000 and the subsequent periods are 2001-2010 and 2011-2020.

Mizoram, notable for its highest social sector expenditure per capita in the initial period, showed significant investment levels. This high expenditure likely facilitated improvements in various aspects of social welfare within the state. In subsequent periods, Sikkim took the lead with the highest expenditures, showcasing remarkable growth rates in its public spending. From the initial period to the middle period, Sikkim's expenditure increased by over 182% and then by approximately 229% in the last decade. This aggressive investment strategy significantly boosted the state's social and developmental indicators, aligning with its high HDI scores. Other states with high social sector spending per capita in the last period i.e., 2011-2020 are Goa, Arunachal Pradesh and Mizoram.

In contrast, Uttar Pradesh, which had the lowest social sector expenditure in the initial period, demonstrated modest increases in spending that did not translate effectively into HDI improvements. The percentage increase in Uttar Pradesh's social expenditure was significant, but the low starting base meant that even these increases were not enough to substantially address its developmental challenges. In the subsequent periods, Bihar witnessed the lowest social sector expenditure per capita which is mirrored in its persistently low HDI scores. This correlation underscores the critical impact of social investments on development outcomes, suggesting that insufficient funding can hinder progress in key human development areas. Other than Uttar Pradesh and Bihar, states such as Punjab, West Bengal and Madhya Pradesh witnessed relatively low social sector expenditure per capita in the last period (2011-2020).

In examining the states with the highest HDI, Goa and Kerala stand out with the most consistent high scores. The states' success can be attributed to its effective utilization of social sector investments, translating into superior living conditions and quality of life for its residents. This contrasts sharply with Bihar, which not only struggles with low social sector investment but also with the lowest HDI scores, highlighting a significant gap in development that demands targeted policy interventions to foster growth and improvement. Other than Kerala and Goa, states which exhibit high HDI scores in the last period i.e., 2011-2020 are Himachal Pradesh, Mizoram and Manipur. States which exhibit relatively low HDI scores in the last period i.e., 2011-2020 include Madhya Pradesh, Orissa and West Bengal.

### **Rationale for public expenditure on human development**

Public expenditure on human development is fundamental for fostering inclusive and sustainable societies. Firstly, investing in essential services like education, healthcare, and social welfare enhances human capital, thereby improving productivity and unlocking opportunities for socio-economic advancement. By providing access to quality education and healthcare, governments can empower individuals to realize their full potential, leading to increased workforce participation, innovation, and economic growth.

Secondly, public expenditure on human development plays a crucial role in reducing inequality and addressing social disparities. By prioritizing spending on marginalized communities and regions, governments can mitigate the effects of poverty and exclusion, promoting social cohesion and stability. Moreover, targeted investments in education and healthcare can break the cycle of intergenerational poverty, empowering future generations to break free from systemic barriers and achieve upward mobility.

Moreover, public expenditure on human development is essential for building resilient and sustainable societies. By investing in preventative healthcare, early childhood education, and social safety nets, governments can mitigate the adverse effects of crises and shocks, ensuring that vulnerable populations are protected and supported during times of uncertainty. Additionally, fostering participatory governance and community engagement in decision-making processes can enhance the effectiveness and accountability of public spending, leading to better outcomes for all members of society.

### **Human development and economic growth**

The interdependency of economic growth and human development is a significant aspect of global progress. Economic growth serves as a catalyst for enhancing human development by providing resources, opportunities, and infrastructure that enable individuals and societies to thrive. Conversely, human development, which encompasses various dimensions such as health, education, and living standards, contributes to sustained economic growth by fostering productivity, innovation, and social cohesion.

At its core, economic growth fuels human development by generating income and employment opportunities, thereby lifting people out of poverty and improving their living standards. Increased income levels enable individuals to access essential goods and services,

such as healthcare, education, and housing, which are critical for enhancing well-being and quality of life. Moreover, economic growth creates a conducive environment for investment in social infrastructure and public services, leading to improvements in healthcare systems, educational institutions, and social welfare programs.

Conversely, human development plays a crucial role in sustaining economic growth by cultivating human capital, promoting innovation, and fostering social stability. Investments in education and healthcare enhance the knowledge, skills, and productivity of the workforce, driving technological advancements, entrepreneurial activities, and economic diversification. Moreover, improvements in health outcomes, such as increased life expectancy and reduced mortality rates, contribute to a more productive and resilient labor force, ultimately boosting economic productivity and competitiveness.

Human development initiatives, such as poverty reduction programs, social safety nets, and gender equality measures, contribute to social cohesion, political stability, and inclusive growth. By addressing disparities in income, access to opportunities, and social rights, human development fosters a more equitable distribution of wealth and resources, thereby reducing social tensions and promoting sustainable development outcomes.

## **Social sector expenditure and human development**

### **Social sector expenditure**

Social sector expenditure refers to government spending allocated specifically to certain sectors that directly contribute to the well-being and development of its citizens. These sectors primarily encompass areas like education, health, urban and rural development, nutrition, sanitation, water availability and other protective and promotional measures.

Spending on the social sector is critical as it tends to benefit the poor relatively more than the rich and because it significantly enhances the human capital of the economy, which can produce direct growth effects for the rest of the economy. In the case of India- as with many other developing economies- the Government's expenditure on the social sector assumes importance on three accounts. The first being the magnitude of deprivation in the country being too large to be left to the market forces alone to tackle. Secondly, the proportion of poor households utilizing Government services is higher as compared to the richer

households and thirdly, to ensure clearly articulated outcomes in social sectors such as the Sustainable Development Goals (SDGs).

Public Expenditure on Social Sector of India including health & education is a major concern to improve the Human Development Index rank of the country. The education and health status of a vast majority of the population continues to remain poor even after a decade of reforms (Joshi 2006). Though the Union Government assists the States by providing funds through different Centrally Sponsored Schemes (CSS) & Central Sector Schemes, it is also the responsibility of the States to prioritize as well as make best allocation of their resources available. Social sector expenditure plays a fundamental role in enhancing human development, reducing inequality, stimulating economic growth, poverty alleviation etc. This study aims at investigating the extent to which social sector expenditure influences HDI. This makes it important to know about the evolution of HDI.

### **Education sector**

The role of education in driving social and economic development is widely acknowledged in India, with the right to education enshrined as a fundamental right in the Constitution of India. The government's commitment to providing free and compulsory education for children aged six to fourteen is depicted by a steady increase in literacy rates rising from 65.38% in 2001 to 74.04 in 2011. Despite this progress, a number of challenges persist in ensuring the delivery of quality education, particularly in primary and secondary education. It is also necessary to address problems such as poor learning outcomes and high dropout rates, especially among marginalized groups.

### **Health sector**

Despite some notable achievements in the health sector like eradication of certain diseases, glaring failures still remain a concern. The present healthcare system predominantly caters to urban populations, with a disproportionate focus on curative programs over preventive, socio-economic, and educational aspects. Access to and benefits from public health services vary significantly between better-endowed and vulnerable sections of society, particularly affecting women, children, and socially disadvantaged groups.

Other challenges include inadequate public health spending and reliance on out-of-pocket payments reflecting the disparities in access to healthcare services. Addressing these

challenges is crucial to ensure equitable access to quality healthcare for all segments of society.

States play a crucial role in improving the health and education sectors in India, given the decentralized nature of governance and the diversity of socio-economic landscape across regions. In the realm of healthcare, states play a pivotal role in the delivery of healthcare services, including the establishment and management of primary healthcare centers, district hospitals, and other healthcare facilities. Moreover, states have the authority to design and implement specific initiatives to address local health challenges, such as disease outbreaks, maternal and child health issues, and endemic diseases. Similarly, in the education sector, states play a crucial role in ensuring equitable access to quality education by addressing regional disparities, promoting inclusive education for marginalized communities, and improving the overall educational outcomes. A substantial proportion of funding for the education and health sectors in India is provided by the states. By prioritizing expenditure on education and health, states demonstrate their commitment to improving human development outcomes and addressing the needs of the people.

### **Human development index (HDI)**

HDI is a composite statistical measure developed by the United Nations to assess and compare the level of human development across different countries and regions. It serves as a summary indicator of a region's overall well-being and development by considering multiple key dimensions of human life.

The HDI is calculated as the geometric mean (equally-weighted) of life expectancy, education, and GNI per capita. The education dimension is the arithmetic mean of the two education indices (mean years of schooling and expected years of schooling).

Higher values of HDI indicate a higher level of human development. The individual dimension scores are then combined to create an overall HDI score, providing a comparative measure of human development across regions. HDI is crucial in measuring human well-being, fostering equity, and tracking development progress. It informs policies, highlights disparities, and guides efforts to enhance health, education, and living standards worldwide.

India, as the world's most populous and diverse nation, has made significant strides in its journey towards development and progress. In 1991, India witnessed substantial economic

reforms aiming at liberalization, privatization and globalization that resulted in very significant changes in the Indian economic landscape. However, these reforms did not give much attention towards the issue of regional disparities prevailing in the country. Also they underscored the importance of human development within the nation.

With time, the policymakers recognized the need to ensure that economic growth benefits all sections of the society. This created a situation where efficient allocation of resources to the social sectors, encompassing education, health care and social welfare was inevitable.

While India has made substantial advancements, regional disparities in development still remain as a challenge. Variations in social sector spending, implementation of policies, and the inability of states to harness resources for human development have contributed to these disparities. To investigate the evolution of such regional disparities, it becomes necessary to take into consideration the HDI across all Indian states.

For doing so, we employed the Augmented Dickey-Fuller (ADF) test to check for stationarity of the variables. The ADF test is a common statistical procedure used to test for the presence of a unit root, a characteristic that indicates non-stationarity in time series data. The presence of a unit root suggests that shocks to the time series have a permanent effect, whereas the absence of a unit root (stationarity) implies that the series reverts to a long-run mean over time.

The results suggest that the Social sector expenditure per capita time series is not stationary at the 5% significance level and that the HDI time series is stationary, implying that it does not exhibit persistent shocks and is likely to revert to a long-term mean. Since SOC is non-stationary and HDI is stationary, we employed the Johansen-Procedure for cointegration which yielded significant results indicating a long-term relationship between social sector expenditure per capita (SOC) and Human Development Index (HDI).

**Table 1:** Cointegration results

Eigenvalues (lambda): 0.73233731 0.05455749				
Values of test statistic and critical values of test:				
	test	10 pct	5 pct	1 pct
r≤1	38.54	6.5	8.18	11.65
r=0	944.03	15.66	17.95	23.52
Eigenvectors normalized to first column:				
	diff_soc.12	pdata.HDI.12		
diff_soc.12	1	1		
pdata.HDI.12	-531.454	-531207.7		
Weight w:				
	diff_soc.12	pdata.HDI.12		
diff_soc.d	-2.29E+00	6.40E-03		
pdata.HDI.d	-2.37E-06	3.50E-07		

The results suggest that changes in social sector expenditure per capita have a statistically significant association with variations in the Human Development Index. In this context, the presence of cointegration between social sector expenditure per capita and Human Development Index indicates that these variables move together over time, with any deviation from their long-term relationship eventually being corrected. This implies that, in the long run, changes in social sector expenditure are associated with changes in the Human Development Index.

Therefore the cointegration results suggest that investments or disinvestments in social sector expenditure can have lasting impacts on human development outcomes, influencing factors such as education, healthcare, and overall well-being. Recognizing and understanding this cointegration relationship is crucial for policymakers and researchers, as it reflects the importance of sustained investments in social sectors to promote long-term human development and socio-economic progress.

### Regression analysis

In this section of our study, we focus on analyzing the impact of social sector expenditure, particularly education expenditure, on a non-income dimension of Human Development Index (HDI) by employing a component-wise approach. The education index, which is a crucial component of the HDI, serves as our dependent variable in this analysis.

The education index represents a composite measure of educational attainment, including metrics such as literacy rates, enrollment ratios, and educational quality indicators.

We chose the education index as the dependent variable because education plays a significant role in human development, influencing individuals' capabilities, economic opportunities, and overall well-being. By focusing on the education index, we aim to understand the extent to which investments in education contribute to improvements in the HDI across Indian states.

This model's significance lies in its ability to assess the specific impact of education expenditure per capita and per capita income on the education index. By examining these variables separately, we can understand the relative importance of investments in education compared to broader economic factors in driving educational outcomes and, consequently, overall human development. This approach provides a deeper understanding of the mechanisms through which social sector expenditure influences key development indicators, thereby offering valuable insights for policymakers and economists aiming to improve human development outcomes in India.

The modeling is done using fixed effect regression with the education index as the dependent variable and education expenditure per capita and per capita GSDP as the predictor variables.

The regression results indicate that both log of education expenditure per capita and log of state GDP per capita have a statistically significant positive association with the education index.

**Table 2:** Regression results

	<i>Dependent variable:</i>
	Edu_index
log_Edu_exp_percapita	0.054*** (0.004)
log_SGDP_percapita	0.049*** (0.005)
Observations	732
R <sup>2</sup>	0.487
Adjusted R <sup>2</sup>	0.464
F Statistic	332.450*** (df = 2; 699)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Specifically, for every one percentage increase in education expenditure per capita, the education index is estimated to increase by approximately 0.054 units, holding other variables constant. Similarly, for every one percentage increase in GSDP per capita, the education index is estimated to increase by approximately 0.049 units, holding other variables constant.

These findings suggest that higher education expenditure per capita and higher state GDP per capita are associated with higher education index scores, indicating the importance of both financial investment in education and overall economic prosperity in promoting educational outcomes.

The model also demonstrates a relatively high explanatory power, with an adjusted R-squared value of 0.46404, indicating that approximately 46.4% of the variance in the education index can be explained by the predictor variables included in the model.

### Comparative study: Kerala and Bihar

In India's socio-economic landscape, Kerala and Bihar depict two contrasting cases. Kerala is often hailed as a beacon of progress with consistently high levels of Human Development Index (HDI). On the contrary, Bihar struggles with a lot of challenges which resulted in low HDI levels throughout the years.

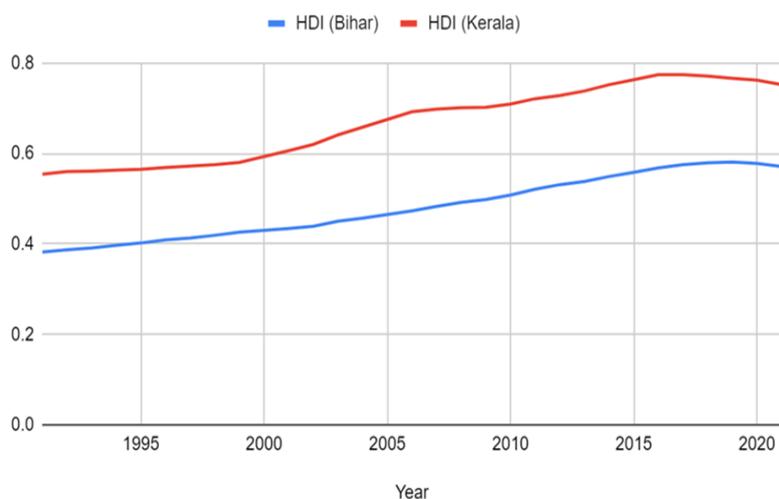
The following table presents various indicators related to demography, income, education, and health for the states of Bihar and Kerala over different years.

**Table 3:** Socio-Economic Indicators - Bihar vs. Kerala

INDICATORS			
DEMOGRAPHY			
S.No.	Indices	Bihar	Kerala
1	Total Population - 2001	84386000	31972000
2	Total Population - 2011	105057000	33502000
3	Sex Ratio - 2001	919	1058
4	Sex Ratio - 2011	918	1084
INCOME			
1	GSDP per capita - 1991	2656.158	9718.177
2	GSDP per capita - 2001	7330.305	30694.04
3	GSDP per capita - 2011	23524.75	108664.5
4	GSDP per capita - 2021	52378.69	264974

5	Percentage of population below poverty line - 1993	60.5	31.3
6	Percentage of population below poverty line - 2004	54.4	19.7
7	Percentage of population below poverty line - 2011	33.74	7.05
<b>EDUCATION</b>			
1	Literacy rate - 1991	37.49	89.81
2	Literacy rate - 2001	47	90.86
3	Literacy rate - 2011	61.8	94
4	Literacy rate - 2022	70.9	96.2
5	Gross Enrollment Ratio (%) Elementary schools - 2021	96.2	101
6	Gross Enrollment Ratio (%) Secondary schools - 2021	64.9	97.9
7	Gross Enrollment Ratio (%) Sr. secondary schools - 2021	35.9	85
<b>HEALTH</b>			
1	Life expectancy at birth (2014 - 2018)	69.1	75.3
2	IMR 1992	89.2	23.8
3	IMR 2005	62	15
4	IMR 2019-2021	46.8	4.4
5	MMR 2010-2012	22.8	3.3
6	MMR 2015-2017	16.9	1.9
7	MMR 2018-2020	11.2	0.9

**Figure 3: HDI trends of Bihar and Kerala**



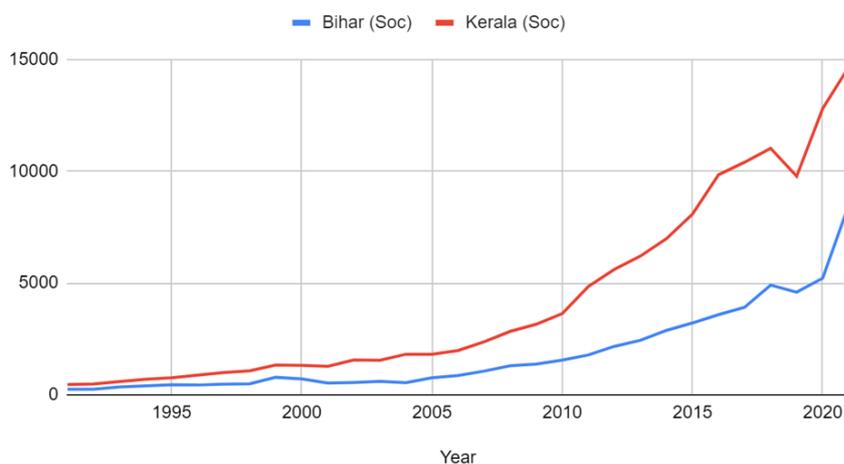
**Figure 4:** Social sector expenditure per capita trends of Bihar and Kerala

Figure 3 depicts the Human Development Index (HDI) trends of Kerala and Bihar from 1991 to 2021. Throughout the entire period, Kerala consistently maintains higher HDI levels compared to Bihar. This is depicted by the clear gap between the HDI scores of the two states, indicating a persistent disparity in human development outcomes.

Figure 4 illustrates the trends in social sector expenditure per capita in Kerala and Bihar from 1991 to 2021. Kerala consistently maintained higher levels of social sector expenditure per capita compared to Bihar throughout the entire period. The gap between the two states gradually widened until 2005, after which Kerala's per capita expenditure witnessed a substantial surge, thereby widening the disparity between the two states.

Kerala's journey towards high HDI can be attributed to a combination of factors that led to its socio economic advancement. Central to this advancement is its commitment towards decentralized governance and grassroots empowerment. This has empowered the local governments, thus fostering greater participation of people in decision making processes which further ensures that development initiatives are adopted in such a way that they meet the specific needs of every region. Kerala has fostered a culture of participatory democracy through initiatives like Peoples' campaign.

The People's Campaign, launched by E.M.S. Namboodiripad, the first Chief Minister of Kerala, was a pioneering initiative aimed at fostering grassroots democracy and participatory governance in the state. Launched in the early 1990s, the campaign sought to decentralize the planning process, empowering local communities to actively participate in decision-making

and development initiatives. At the heart of the People's Campaign was the concept of decentralized planning, wherein local bodies, such as panchayats and municipalities, were entrusted with the responsibility of identifying local development priorities and formulating plans to address them. The People's Campaign represented a radical departure from traditional top-down approaches to planning, placing the power of decision-making squarely in the hands of the people. Under the People's Campaign, Kerala witnessed a remarkable transformation in its approach to governance, with decentralized planning becoming a cornerstone of the state's development strategy.

Grassroots organizations such as neighborhood groups, women's collectives, and youth forums have served as catalysts for community empowerment, social mobilization, and grassroots innovation. One such organization is Kudumbashree, a women-oriented self-help group movement launched by the Government of Kerala in 1998, which has played a pivotal role in empowering women at the grassroots level, fostering economic independence, and promoting community development through various income-generating activities, micro-enterprises, and social welfare programs.

Moreover, a greater focus on social welfare programs and development of human capital have been instrumental in improving education and health outcomes. Kerala's robust education system which is a result of high public spending in the education sector along with literacy campaigns have reduced illiteracy levels in the state. Kerala's healthcare infrastructure, complemented by robust economic support, has elevated its health status to levels on par with many developed nations. Extensive primary and community health centers, reaching even remote rural areas by the 1970s, contributed to significant improvements. Key indicators like crude death rate and infant mortality rate showed remarkable declines, reflecting the state's commitment to public health. Traditional Ayurvedic practices, alongside European medical care introduced in the early 19th century, further enriched Kerala's healthcare landscape, fostering impressive gains in life expectancy comparable to global benchmarks like Japan.

Despite its achievements, Kerala faces a lot of challenges in maintaining these high standards. The sustainability of its healthcare infrastructure amidst evolving demographic and epidemiological trends still remains a concern. Despite high literacy rates, one significant challenge is ensuring quality education, with issues like curriculum relevance and educational

equity which demands continuous attention. Furthermore, Kerala's heavy reliance on remittances from the Gulf countries is also a risk factor due to their volatility. Addressing all these challenges will be crucial for Kerala to sustain its high levels of health and education indices in the long run.

In contrast to Kerala, Bihar's development journey is characterized by limited citizen participation in planning processes which has resulted in low HDI scores and lagging indicators of education and health. Despite substantial improvement in social sector expenditure per capita over the years, Bihar still struggles to bring about tangible improvements in human development indicators mainly due to factors such as inadequate infrastructure, limited healthcare access etc.

Bihar's historical underinvestment in education and healthcare, along with infrastructure gaps and unfavorable socio-political conditions have created obstacles in its journey towards high HDI levels. Decades of underdevelopment which resulted from factors such as poor governance, inadequate spending in the social sector and lack of effective policy implementation have left Bihar in extreme poverty.

The state's education sector has been plagued by various issues like low literacy rates, inadequate school infrastructure and huge dropout rates. In spite of various efforts to improve educational outcomes such as the implementation of various schemes and initiatives, Bihar still struggles with educational disparities especially in rural areas where access to quality education is limited.

Furthermore, other factors like corruption, political instability and ineffective governance worsened the situation. Political instability and frequent changes in leadership have contributed to policy paralysis which in turn hindered long term planning and development initiatives. Bihar's geographical vulnerabilities including susceptibility to droughts have worsened the situation.

Emphasizing investment in healthcare, education, and grassroots empowerment initiatives like Kudumbashree can further enhance Kerala's position and serve as a model for other regions. Also there is a need for diversified economic strategies to mitigate potential shocks. Meanwhile, Bihar must prioritize reforms addressing poverty, healthcare, and education, alongside fostering decentralized governance and community participation, to uplift its

citizens and narrow the gap with states like Kerala. This calls for concerted efforts from policymakers, the citizens, and communities to build a more equitable society for all.

## **Conclusion**

Firstly, this study has revealed the existence of a significant long-term relationship between social sector expenditure per capita and Human Development Index, highlighting the pivotal role of public spending in fostering human development. This reflects the importance of continued investment in vital services like education, healthcare, social welfare and the need for governments at both the state and national levels to prioritize public spending as a means to address problems such as regional disparities thereby achieving inclusive growth.

Secondly, this study has shed light on the influence of education expenditure per capita and per capita income on the education index, revealing that both factors play a crucial role in shaping the education index. While per capita education expenditure is an important determinant, target spending on education remains crucial for improving educational outcomes and enhancing human capital, improving productivity and unlocking opportunities for socio-economic advancement.

Further, the comparative analysis of Kerala and Bihar reflects the importance of people's participation in decision making, decentralized governance, grassroots empowerment, and effective policy implementation in driving high HDI levels. Kerala's success story, characterized by robust social welfare programs and grassroots empowerment serves as a model to other states for effective human development strategies. On the contrary, the challenges faced by Bihar, ranging from historical underinvestment in vital sectors and governance issues to socio-economic and political vulnerabilities, highlight the urgent need for comprehensive reforms to improve various social indicators.

Overall, this research provides empirical evidence and policy insights for promoting human development and well-being in India. It is important to address regional disparities, enhancing public service delivery, and fostering participatory governance, to achieve more equitable, resilient, and sustainable societies.

Fostering collaborations between government agencies, civil society organizations, and local communities is essential for maximizing the impact of social sector spending and ensuring that development initiatives are tailored to meet the specific needs of diverse populations.

Through continuous monitoring, evaluation, and adaptation of policies, India can navigate the complexities of its development landscape.

However, it is essential to acknowledge the limitations of this study, including the complexity of establishing causal links between expenditure per capita and HDI, the influence of external factors beyond the scope of this analysis, and the evolving nature of development challenges. By fostering multi-stakeholder collaboration, we can collectively strive towards achieving the vision of a society characterized by inclusive and equitable growth. Future research should aim to further refine our understanding by exploring innovative policy interventions, and leveraging data-driven approaches to advance human development goals in India.

The main finding of the **paper** is that there exists a significant positive association between social sector expenditure and Human Development Index (HDI) across Indian states, highlighting the crucial role of investment in social sectors for enhancing human development outcomes. The following policies can be thought about and implemented:

- Prioritize targeted investment in education, particularly in states with lower literacy rates and gross enrollment ratios, to enhance human capital formation and drive sustainable development.
- Adopt the best practices and learn from states with high development outcomes to inform policy decisions and initiatives aimed at improving social sector performance.
- Strengthen decentralized governance structures and empower grassroots communities thereby ensuring effective implementation and delivery of services.
- Establish robust monitoring and evaluation mechanisms to track the progress of social sector programs and initiatives, enabling evidence-based decision-making and continuous improvement.

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