

# Public Health Expenditure and Human Development Attainments in India

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**Abstract:-** The core of development is enhancement of capabilities of people by enforcement of their entitlements to education and health. The idea of Human Development got prominent during 1990 when the first HDR was published under aegis of UNDP. India has been characterised as a country with low level of human development with the country's rank 131 in 2019, among 189 countries.

In order to achieve higher growth rate and match the global standards, Government of India was supposed to be a bit liberal in its social sector development expenditure but the new economic reforms proposed thrift on the part of public expenditure.

This paper aims to study the concept and dimension of HDI, also it would review the HDR to find out the inter-state ranking trends during 1990 to 2020 in India. To analyse the government expenditure on health and social sector expenditure in relation to human development attainments is also an objective of this paper.

**Keywords:-** Human Development Index, Expenditure, Social Sector Development, Economic Growth, Regional Ranking.

## I. INTRODUCTION

The World Health Organisation (WHO) defines health as 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity' (WHO, 1948).

Health is a basic component that complements human well-being. To achieve higher status of human development 'health' is the primitive social service that directly impacts the efficiency of human capital. Health plays a very important role to attain economic growth<sup>1</sup>. India being a welfare state remained a main investor in the economy but the process of economic reforms commenced from 1991 shifted India towards private investment model. The idea of PPP model was articulated by government of India to fetch the development goals. This restructuring influenced the share of public expenditure on health also.

Our country is in fast growing economy but poverty is still there in the society as nearly 22% of population is

poor<sup>2</sup>. Thus a more focused and systematic approach needs to wash-off of such disparities. India invested in health around 3.3 percent is total plan investment in first five year plan and 3%, 2.6% in second and third respectively. Public Expenditure on health plays a very important role in determining human development.

The 2019 Human Development Report (HDR) by the United Nations Development Program (UNDP) focuses on understanding the components of disparity generally imperative to individual's prosperity, and what is behind them. Inequality is an indicator of development or inequality is the only reason for India's low rank in HDI. The study shall also analyse the state of Human Development Index (HDI) as a composite index of health, education and per capita income.

## II. LITERATURE REVIEW

In order to make an economic analysis of public expenditure on health in India and its relation with HDI and earlier studies done on this topic are reviewed.

Social Expenditure plays a major role to achieve the goal of development to build societies that are socially inclusive, economically healthy. There have been many attempts to measure the quality of life of society across the countries in world (Human Development Index of UNDP, various years), or across the states in India (HDR of different states, various years).

The other literature<sup>3</sup>, (Kartik Prasad Jena and Subodh Kumar Sinha) analyse different aspects of human development. This paper focused changing socioeconomic and political scenario of India and other paper (Indian Economic Journal)<sup>4</sup> described the inequality and human development and vulnerability.

While reviewing the literature, a literature named "Towards Millennium Development goals: A critical analysis of Indian Performance<sup>5</sup> is describe MDGs target and performance analysis. The Millennium Development Goals are the world time bound and quantified targets for

<sup>2</sup> Census 2011

<sup>3</sup> Changing notion of human development and inclusive growth- Evidence and Experience with reference to the disadvantaged groups in Odisha (Indian Economic Journal).

<sup>4</sup> Anamika Choudhary (2015), "Vulnerability and Inequality in Assessing the Progress of human Development," *The Indian Economic Journal, Special Issues Dec-2015*.

<sup>5</sup> Wishwanath Kumar and Ravi Ranjan

addressing extreme poverty in its many dimensions-income poverty, hunger, diseases, lack of adequate shelter, and exclusion while promoting gender equality, education, and environmental sustainability. According to this paper these targets are also basic human right of each person on the planet to health, education, shelter and security. The planning for Human Development<sup>6</sup> focused the relation between economic development and human development.

The paper of Indian Economic Journal- “Reflections on state indicators of growth, human development, poverty and inequality<sup>7</sup> explain the rapid transformation of Indian economy due to Human Development Indicators and also analysed the GSDP and expenditure on education as percentage of GSDP in Indian states. Human development can be defined as a process of widening people’s choice as well as raising the level of wellbeing achieved. It measured by method used by United Nation Development Programme and its report published annually known as Human Development Index Report developed in 1990. It classifies the countries as Very high development (more than 0.800), High development (0.700-0.799), Medium (0.550-0.699), Low (less than 0.549).

Human Development Index takes all aspects of human development and calculation of the index combines four major indicators: life expectancy for health, expected years of schooling, mean of years of schooling for education and Gross National Income per capita for standard living. In which two indicators are based on Education Quality of the country which is a outcome of expenditure done on social sector (education) by Country. India’s performance can traced from establishment of index i.e. 0.429 to 0.645.

The article, “Budgetary Expenditure on Health and Human Development in India” described human development and health outcomes across major Indian states.<sup>8</sup>

The other paper related to social sector expenditure analysed the social sector expenditure and human development index in India.<sup>9</sup>

Sen, Amartya (2000) mention the relation between unemployment and capability deprivation. Unemployment other than loss of income has serious effects on the lives of the individuals including psychological harm, loss of work motivation, skill and self-confidence, increase in ailments and morbidity, disruption of family relations and social life, hardening of social exclusion and accentuation of racial tensions and gender asymmetries.

### III. CONCEPT OF HUMAN DEVELOPMENT INDEX

The Human Development Index (HDI) introduced by UNDP in 1990 is a simple average of three dimension indices that measure average achievements in a country with regard to ‘A long and healthy life’, as measured by life expectancy at birth, ‘Knowledge’, as measured by the adult literacy rate and the combined primary, secondary and tertiary gross enrolment ratio; and ‘A decent standard of life’, as measured by estimated earned income in Purchasing Power Parity (PPP) US\$.<sup>10</sup>

The concept of human development throws light on total development of human being by considering the improvement of these sectors; social, economic, educational, and cultural and health of human being. Human resource should also be looked after properly and continuously regarding various aspects like development economic, social and psychological aspects.

The measurement of HDI is following formula-

Formula:

The HDI is calculated as the geometric mean of life expectancy, education, and GNI per capita-

$$HDI = (I \text{ Health} * I \text{ Education} * I \text{ Income})^{1/3}$$

The education dimension is the arithmetic mean of the two education indices (mean years of schooling and expected years of schooling).

<sup>6</sup> Pinki chakraborti Sr.

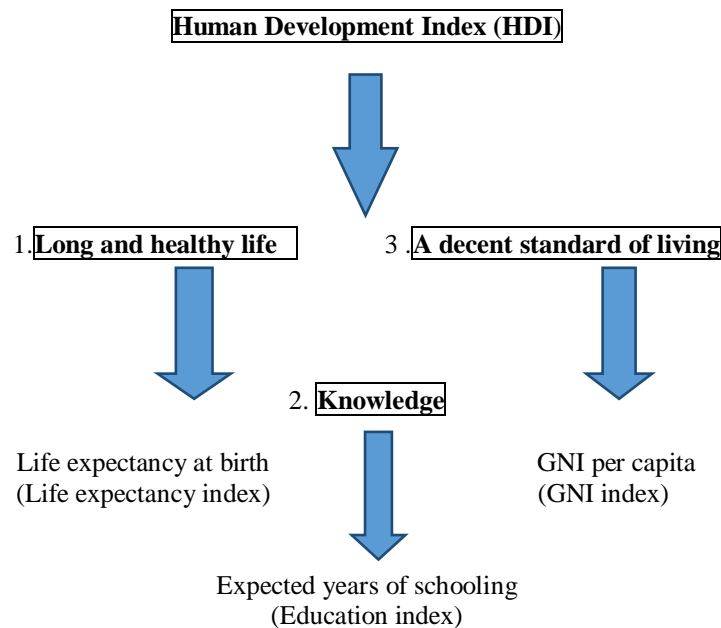
<sup>7</sup> P. Punitha

<sup>8</sup> Brijesh C. Purohit

<sup>9</sup> Pranjal Mittal

<sup>10</sup> Social Sector Expenditure and Human Development Index of Indian State- Pranjal Mittal.

The following flowchart shows the different dimensions of Human Development Index which are define by UNDP--  
Dimensions Of Human Development



Source: Human Development Report

HDR measures development in terms of three indicators- Health, Education and Standard of Living-converted into a composite human development index, the HDI. Whereas, HDI sets range for each dimension, called goalposts it reflects the status of countries in relation to these goalposts, as a value between 0 and 1.

The three indicators or dimensions use to develop the composite index are as given below-

- a) Participation in the Knowledge Sector: This quantitative indicator of human development, talks about the number of enrolment of students in primary, secondary and senior secondary schools. Though, this dimension aims to identify the capability to acquire knowledge yet it does not take into account the quality it concentrates on quantity. The enrolment of students in school is silent on the gain of knowledge; in order to lead a meaningful life attendance is not a sufficient measure. Since the 1990s when the first Human Development Report was published to various changes that have been made over the years in Education, as one of the indicators of Human Development:

1990: Education was initially measured by literacy rates.

1991: Mean years of schooling was added to literacy rates attainment (weights are given one-third and two-thirds respectively). This comprised a composite indicator to measure educational attainment.

1995: The estimate for mean years of schooling was replaced by combined gross enrolment rate at primary, secondary and senior secondary levels. This was due to the

unavailability of data on average years of schooling in most countries.

However, the 'mean year of schooling' and expected years of schooling' remained unchanged in 2019 compared to 2018. However, considering the value of planetary pressures adjusted HDI (PHDI).<sup>11</sup>

- b) Long and Healthy Life (Life Expectancy at Birth): Life expectancy at birth is defined as the average number of years that a newborn is expected to live. This indicator is also a quantitative measurement of human development, life expectancy at birth, does not reveals whether the years lived are healthy and enjoyable or not.
- c) A Decent Standard of Living (Per Capita Income): Per capita income or average income measures the average income earned by a person in a given area in a specified year. Per Capita Income is considered as one of the factors of Human Development to determine the ability to achieve a decent Standard of living. Per Capita Income per se is a quantitative indicator.

HDI represents the development process of an economy in terms of efficiency and productive capabilities, involving both physical and human resources, as a means to attain the desired social ends. This process generates a build-up of the economy's productive potential to keep the development on a path of sustainable improvement in well-being.

<sup>11</sup> Economic Survey-2020-21 , volume 2

#### IV. PERFORMANCE OF INDIAN STATES IN HUMAN DEVELOPMENT INDEX

In India the value of HDI has increased from 0.428 in 1990 to 0.645 in 2019. The average annual growth during 2010-2019 was 1.21 per cent as compared to 1.58 per cent during the period 2000-2010.<sup>12</sup> In a recent released data on Human Development Index (HDI) for Indian States for the period 1990 to 2019 reflects some interesting results. The following table represent, Indian states for the 29 year period ended 2019. The researcher has observed that states like Haryana, Himachal Pradesh, Tamil Nadu and Punjab along with Kerala remain at the top position. Another fact is that the States which were at the lower rank HDI during 1990s are presently doing well on the social parameter since 2014. For e.g. Rajasthan, UP, Odisha & MP have seen the largest jump in change in HDI value among the 25 major States in India, though not in positions. The region wise trends of HDI scores suggest that mostly Southern States and Northern States have performed much better as compared to their respective peers. Eastern States have not performed well in Human development Index. The gap between Eastern region and rest of the regions, which widened till 2014, has either declined or remain same since 2015.

Rank 2019	State/Territory	HDI 1990	HDI 1995	HDI 2000	HDI 2005	HDI 2010	HDI 2015	HDI 2019
131	India	0.428	0.463	0.493	0.535	0.581	0.627	0.645
1	Kerala	0.540	0.568	0.593	0.674	0.715	0.757	0.782
	Chandigarh	0.627	0.641	0.633	0.659	0.649	0.730	0.776
2	Goa	0.546	0.581	0.608	0.668	0.736	0.754	0.763
	Lakshadweep	0.693	0.704	0.699	0.727	0.718	0.732	0.751
	Delhi	0.572	0.620	0.660	0.688	0.708	0.730	0.746
	Andaman and Nicobar Island	0.679	0.693	0.690	0.717	0.706	0.721	0.741
	Puducherry	0.713	0.730	0.725	0.752	0.743	0.730	0.740
3	Himanchal Pradesh	0.475	0.530	0.583	0.640	0.665	0.704	0.725
4th	Punjab	0.492	0.536	0.574	0.611	0.657	0.703	0.724
5	Sikkim	0.541	0.548	0.544	0.588	0.631		0.717
6	Haryana	0.463	0.506	0.544	0.587	0.634	0.686	0.708
	Daman and Diu	0.646	0.662	0.660	0.685	0.677	0.690	0.708
7th	Tamil Nadu	0.467	0.504	0.537	0.595	0.647	0.689	0.709
8th	Mizoram	0.520	0.547	0.565	0.627	0.686	0.698	0.704
9	Maharashtra	0.490	0.525	0.553	0.599	0.643	0.680	0.697
10	Manipur	0.490	0.526	0.555	0.594	0.682	0.696	0.697
11	Jammu and Kashmir	0.489	0.511	0.523	0.583	0.641	0.674	0.688
12	Uttarakhand	0.594	0.635	0.624	0.653	0.640	0.664	0.683
13	Karnataka	0.440	0.479	0.513	0.562	0.605	0.659	0.683
14	Nagaland	0.526	0.533	0.517	0.553	0.661	0.679	0.679
15	Gujrat	0.466	0.498	0.524	0.570	0.606	0.651	0.672
16	Telangana	0.617	0.630	0.622	0.648	0.638	0.651	0.669
	Dadra and Nagar Haveli	0.667	0.683	0.677	0.705	0.695	0.663	0.663
17	Arunachal Pradesh	0.432	0.471	0.499	0.532	0.641	0.661	0.661
18	Tripura	0.442	0.488	0.525	0.558	0.609	0.643	0.658
19	Meghalaya	0.452	0.469	0.472	0.530	0.620	0.648	0.656
20	Andhra Pradesh	0.420	0.450	0.473	0.526	0.579	0.629	0.641
21	West Bengal	0.437	0.473	0.501	0.535	0.573	0.619	0.641
22	Rajasthan	0.399	0.436	0.465	0.507	0.548	0.605	0.628
23	Assam	0.411	0.447	0.483	0.528	0.567	0.498	0.613
24	Chhattisgarh	0.557	0.569	0.559	0.584	0.573	0.594	0.613
25	Odisha	0.396	0.429	0.453	0.491	0.535	0.585	0.611
26	Madhya Pradesh	0.403	0.433	0.456	0.498	0.537	0.585	0.606
27	Jharkhand	0.556	0.568	0.559	0.584	0.573	0.584	0.603
28	Uttar Pradesh	0.374	0.429	0.438	0.400	0.515	0.577	0.599
29	Bihar	0.375	0.407	0.432	0.468	0.514	0.557	0.574

Table 1: Performance of Indian States in Human Development Index (During: 1990 to 2019)

Source- UNDP, 2020

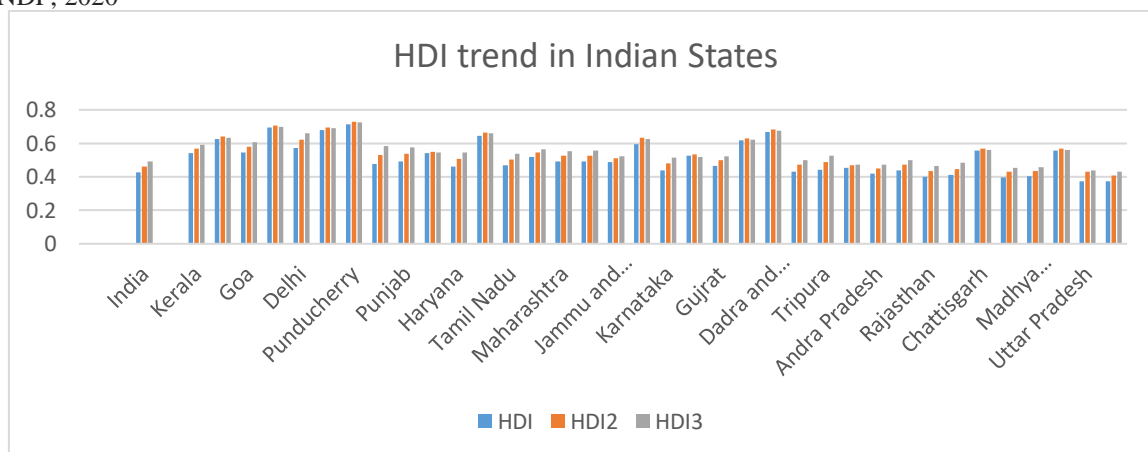


Fig. 1: Performance of Indian States in Human Development Index (1990 to 2019)

Source: As per table 1

Table 1 and figure 1 described human development index in Indian states during 1990 to 2019. Indian states have been classified into four categories, in the first category Kerala achieved high level of human development index, second category is Punjab-Haryana states which despite high level of per capita income and the third category is of states such as Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh where neither economic nor social opportunities have been realised. The fourth category are which states where social and economic opportunity is not large.

**V. HUMAN DEVELOPMENT ATTAINMENTS IN INDIA (During 1990-2019)**

According to Human Development Index (HDI)-2017, India has secured ranked 130 among 189 countries. HDI is a

summary of measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. Though, over the years (between 1990 and 2019), India’s position of human development has improved significantly, reflecting the better HDI values from 0.427 to 0.645, an increase of 50% in its performance has been noticed, still its position is lowest among its peer countries (Asian and Developing economies).

However, India’s growth performance in some of the metrics is commendable: between 1990 and 2019, like life expectancy at birth has increased by nearly 11 years, with even more significant gains in expected years of schooling where today’s Indian school-going children can expect to stay in school for 4.7 years longer than in 1990.

The following table represent India’s HDI value, rank and its Sub-components-

Year	Rank	Life Expectancy at Birth	Expected Years of Schooling	Mean Years of Schooling	GNI Per Capita (2017 PPP \$)	HDI value
1990	135	57.9	7.6	3.0	1,787	0.429
1995	115	60.3	8.2	3.5	2,078	0.461
2000	124	62.5	8.3	4.4	2,548	0.495
2005	127	64.5	9.7	4.8	3,217	0.536
2010	119	66.7	10.8	5.4	4,182	0.579
2015	130	68.6	12.0	6.2	5,391	0.624
2019	131	69.7	12.2	6.5	6,681	0.645

Table-2: Trends in India’s HDI Value and its Sub-components

Source-Human Development Report, 2020,UNDP

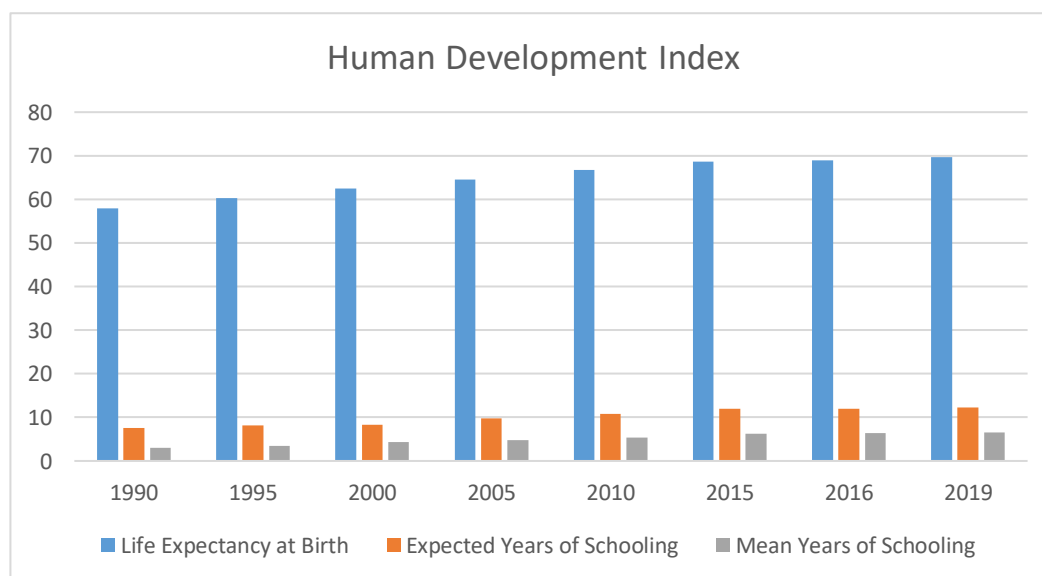


Fig. 1: Human Development Index (Health and Education)

Source: As per above table



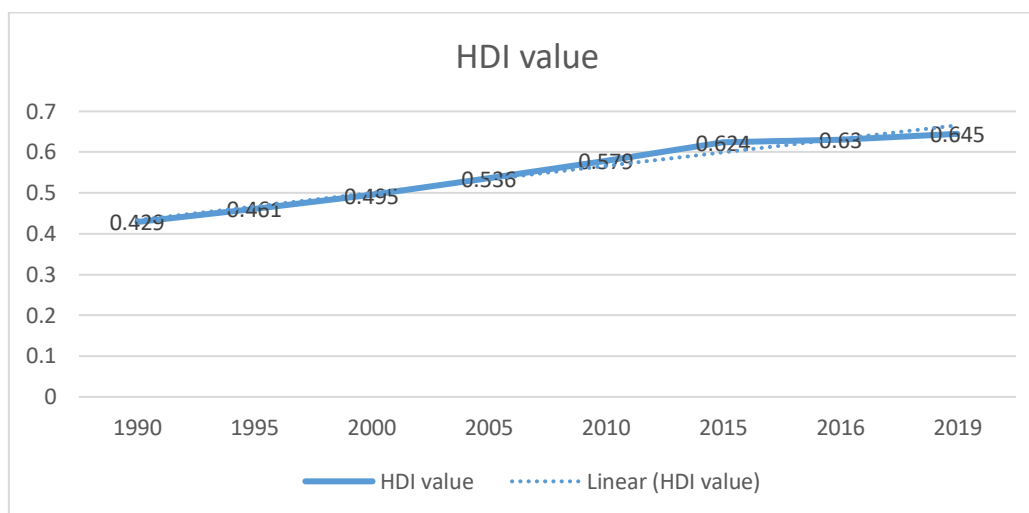


Fig. 2: HDI Value

Source: As per above table

According to the Human Development Report-2019 out of a total 189 countries India’s rank in Human Development Index (HDI) was 131 in 2019, as compared to 129<sup>th</sup> in 2018. It can be mentioned that the decline in HDI ranking by two points in 2019 is relative to other countries. The above table and figures represent the sub-components of HDI.

At the sub-components wise performance of HDI indicators, India’s HDI value for 2017 is 0.640— which puts the country in the medium human development category. Between 1990 and 2019, value increased from 0.429 to 0.645, an increase of 50.3 percent. India’s progress in each of the HDI indicators between 1990 and 2019, India’s life expectancy at birth increased by 11.8 years, mean years of schooling increased by 3.5 years and expected years of schooling increased by 4.5 years. India’s GNI per capita increased by about 273.9 percent between 1990 and 2019.

The following table and figures represent the trend of Human Development Index based on life expectancy at birth, expected years of schooling, mean years of schooling

and GNI per capita. India’s GNI per capita (2017PPP\$) has increased from US\$ 6,427 in 2018 to US\$6,681 in 2019, and ‘life expectancy at birth’ has improved from 69.4 years in 2018 to 69.7 years in 2019, respectively.

The value of HDI is shows linear trend line during this time periods.

### VI. HUMAN DEVELOPMENT INDEX AND TREND IN GOVERNMENT EXPENDITURE ON HEALTH AND SOCIAL SECTOR EXPENDITURE (DURING 1990-2019)

The expenditure on health, education and social infrastructure is a sign of commitment of government towards its responsibility to uplift its society and improve their overall wellbeing of person living in country. The public expenditure helps the vulnerable sections of the economy to access critical resources for their development. Table shows trends in government health expenditure on social sector expenditure done by both centre and state government.

Year	Social Sector Expenditure (in Crore)	Increase in Expenditure on Social Sector	Government Expenditure on Health in India (in Crore)	Increase in Government health Expenditure	Human Development Index (Value)	Increase in HDI Value
1990	351.3	-	23,748	-	0.428	-
1995	551.4	200.1	1,72,151	148,403	0.463	.035
2000	1,136.6	585.2	2,472.33	169,678	0.493	.058
2005	1,640.8	504.2	6,684.49	4,212.16	0.535	.042
2010	3,929.4	2,288.6	18,641.47	11,956.98	0.581	.046
2015	8,300.56	4,371.16	140054.55	121,413.08	0.627	.046
2017	11,40000	309,944	178875.63	38,821.08	0.641	.014
2019	15,31000	391000	62,559	44,672	0.645	0.04

Table 3: Trend in Social Sector Expenditure

Source: Budget Documents, Various years UNDP Report-2020

The above table represents the government expenditure on health and social services (education, health and other

social sectors) expenditure by Centre and States. An increase in the respective heads can be noticed while

observing the table -2 .In absolute terms 351.3 lakh cr. to 1531000 lakh cr. was the amount of increase during the period 1990 to 2019.increase was witnessed across all social sectors. According to this table increase in health attainments have also increased from 23,748 crore rupee to 62,559 crore rupee during the given frame of time. The HDI value is increased from 0.428 to 0.645 during the given periods. They are co-depending on each other.

- A. *Coefficient of correlation:* In this study we have witnessed the impact of Health expenditure on Human Development .In order to ratify the assumption the researcher has explored the trend of public expenditure and increase in health attainments during the time of study. To find out the said relation statistical tool Pearson coefficient has been applied.
- B. *Pearson Coefficient Correlation:* - Pearson Coefficient help us to find the relation between two variables and gives magnitude of correlation and also direction of correlation. To find this we took expenditure on social sector expenditure as variable ‘x’ and HDI values as variable ‘y’, and again find the relationship between health as variable ‘x’ and HDI values as variable ‘y’-

Government Expenditure on Health(Rs. Crore) As variable ‘x’	HDI as variable ‘y’
23.748	0.428
1,72,151	0.463
2,472.33	0.493
6,684.49	0.535
18,641.47	0.581
140054.55	0.627
178875.63	0.641

Table 4.2: Correlation Coefficient (Government Health Expenditure and HDI)

This result  $r=0.444311$  show a medium positive relation between variable ‘x’ (health expenditure) and ‘y’ (HDI value).

According to this study, increasing the health expenditure in a country increase the Human Development in country, health expenditure is a part of social sector expenditure so that both are positively correlated with human development index.

- a) Findings of the study: To achieve the high Human Development Goals, it is of utmost importance to ensure sufficient public spending on social sector in India. The analysis leads to the, that the expenditure on health sector has increased during the past few decades. The researcher observes an increase in government health expenditure is a necessary step for economic growth in India.

India is a country with the second largest population in the world. Increase in health expenditure must be an important step taken by government of India to achieve higher rank in Human Development Index. If, India succeeds in attaining the development components it would mean a larger section of the world has achieved it. Therefore it is imperative for India to develop effective methods for implementing, monitoring and measuring the progress of development. The biggest challenge for India seems to be the development of suitable indicators.

The analysis leads to construe that glaring diversity is found amongst Indian states with respect to HDI value. Economic growth is may basically be achieved by inclusive and sustainable growth pattern. The level of disparity among social groups and states has a great impact on the overall development in India. To meet out the higher HDI ranking India need to increase its social sector expenditure specially public expenditure on health increase health expenditure.

**VIII. SUGGESTIONS**

The researcher has proposed the following suggestions based on the study:

- The government of India, needs to increase public expenditure on social sector especially on health sector, to improve health status it is necessary to spend on health facilities and it is also a key of development. We are well known of the situation of covid-19.

Expenditure on Social Sector (in Crore) as variable ‘x’	Human Development Index (Value) as variable ‘y’
351.3	0.428
551.4	0.463
1,136.6	0.493
1,640.8	0.535
3,929.4	0.581
8,300.56	0.627
11,40000	0.641
15,31000	0.645

Table -4.1: Correlation Coefficient (Social Sector Expenditure and HDI)

**VII. RESULT**

Formula-  
In Excel,  
Correlation=CORREL (Array1:Array2, Array1:Array2)

This result  $r=0.662179$  show a medium positive relation between variable ‘x’ (social sector expenditure) and ‘y’ (HDI value).

It shows that increase in the social sector expenditure in a country directly complements the Human Development attainments of country.

The researcher has noticed an increasing trend in government health expenditure, which has certainly impacted the positive result of HDI attainments during the time period of study.



- To reduce the inequalities of different states, the government will have to increase spending on schemes and policies that are growth oriented.

## IX. CONCLUSION

On the basis of the findings the study concludes, that human development is important for any country because citizens are the wealth of nation. Therefore it is important for every government to deploy resources towards health and well-being. The growth of public expenditure on social sector 'health' is positively correlated with human development attainments in India.

It is obvious that India's expenditure on social services (as percentage of GDP) is lower than the global average. It is also been observed that Indian states have disparity in performance related to HDI, the ranking reflects that Kerala has remained a consistent performer, though Uttar Pradesh, Bihar, Madhya Pradesh have got lower ranks. To meet out the regional disparity these measures will be of great use.

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