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AN ANALYTICAL STUDY OF PUBLIC HEALTH EXPENDITURE AND ECONOMIC GROWTH IN EASTERN STATES OF INDIA

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ABSTRACT **DOI No: 10.36713/epra14543** **Article DOI: https://doi.org/10.36713/epra14543**

This study examines a comparative analysis of the trend and pattern of healthcare expenditure in four major eastern states of India. The study is completely built on secondary sources of data from 1991 to 2020 taken from the RBI Database, the World Bank Database and various governmental reports. The study has used descriptive statistics, Log-linear regression, least square trend and graphical methods for analysis. This study shows the percentage share of total health expenditure to GSDP has an increasing trend. According to the regression analysis, health spending has a strong favourable effect on GSDP in the four eastern states of India. *A rise in the state of health helps to accomplish the maximum productive capacity of human capital and thereby increase the productivity of market structure. So, sound health plays an significant role in the economic growth and development of a nation.* ***This paper makes the case that governments should take immediate steps to produce alternative income from different sources including foreign grants and alternative tax revenue.***

KEY WORDS: ***Economic growth, Health- Expenditure, Regression, Time series***
JEL: **H51, I11, I18**

INTRODUCTION

The era of reforms started in mid-1991 which gives an unsatisfactory result with respect to social indicators, the related question to be measured is not what the situation would have been in the absence of reforms, but what it ought to be and whether the process of reform can allow such goals to be achieved. The impact of reforms is based on early conditions, growth rates and political commitment of state governments to education, health, and nutrition. Initial conditions showed a wide distinction in attainment, lack of correspondence between economic performance and social conditions, low government expenditure in low attainment states, an inaccurate pattern of expenditure skewed towards tertiary services in urban areas, and under-utilization of current infrastructure. According to (Dreze and Sen, 1995). At the beginning of the reforms in 1991 lagged the levels achieved in Southeast Asia 20 years earlier, where India's adult literacy rate in 1991 was per cent, compared with 57 per cent in Indonesia and 79 per cent in Thailand in 1971. The gap in social development is required to be closed, not only to growth the welfare of the poor and boost their income-earning capacity but also to form the preconditions for quick economic growth. While the economic reforms essential a withdrawal of the state from areas in which the private sector could do the job just as well, it also essential an enlargement of public sector support for social sector development.

Despite the surging concern and awareness of individuals and the government about public health and its effect on economic growth, major states are still suffering from many serious problems such as higher rates of Infant and Maternal Mortality(IMR) and low levels of life expectancy(LEI) and many others. The medical & public health facilities in these states have been very poor and highly inefficient. Owing to the improper and inappropriate facilities of medical & public health across these states, the inhabitants suffer from poor health. In order to improve the medical & public health facilities, governments of these states have been initiating many programmes for better and more efficient availability of medical & public health facilities. However, the condition of medical & public health facilities, by and large, remains unchanged. So, an attempt to study the reasons causing such failure becomes significant. It is hoped that the findings of this study will assist in raising awareness on issues related to medical & public health facilities, particularly for under-developed states in eastern India. This valuable information will stimulate initiatives like reduction of both infant and maternal mortality rates, improvement in life expectancy, and higher allocation of amounts to medical & public health so that an increase in economic growth (GSDP) of the major states may be possible. The findings of the present study will be useful for under-developed states in planning their strategies for providing sound medical & public health facilities. The Study will also throw more light on the role of public health at large.

LITERATURE REVIEW

This paper gives a brief overview of the theoretical and empirical foundation for the present research by reviewing the literature on analyzing the trend and pattern of public health expenditure in eastern states of India with their GSDP growth. There are so many studies conducted abroad on several aspects relating to the public financing of social sectors. Mainly it focuses on some of the relevant literature on the above-stated issues to understand the problem more precisely and to justify the present research gaps. A few important and relevant key pieces of literature are reviewed below.

Balani., K. et al (2023) have analysed the linkage between public health expenditure and income in India, the secondary sources of data have been collected from various Govt. sources in the period 1981–2017. For analysing the nexus, a robust version of the Granger causality test was applied, to get reliable results. It concluded that there is a non-linear and bidirectional relationship running from the stated variables. This study reports that there is an inter-state difference in the income elasticity of healthcare expenditure.

Khan., Z. and Khattak. F., (2022) aims to investigate the nexus between public health expenditure and economic growth. By using the panel data from the period 1995 to 2018 for seven South Asian countries. This study has applied the Granger causality test for prediction, panel cointegration test and panel cointegration regression FMOLS technique. This study highlighted that the panel cointegration regression FMOLS has a long-term economic growth Which is significantly affected by public health expenditure. This study concludes to give some specific evidence to policymakers for the growth of the economy. .

Patra, A., and Sahu, S., (2021) examine the pattern of public health expenditure in Odisha from 2000-01 to 2017-18, its impact on health outcomes, and its relationship through the income of the State. Study reveals that total health expenditure as a percentage of GSDP is hovering around one per cent. Expenditure on Urban Health Services has been increasing, on the contrary, expenditure on Rural Health Services has declined and expenditure on 'Medical Education & Training' remains constant. 'Allopathic System of Medicine' soaks up to 75 per cent of expenditure on 'Medical & Public Health'. It is observed that both GSDP and health care expenditure have statistically significant positive impacts on LEB and negative effects on IMR and CDR. However, GSDP has an edge over health care expenditure. There exists a unidirectional causality from PCHE to PCGSDP in Odisha.

Basumallik (2017) has focused on the relationship among health and economic growth in India, in the period 1961to 2015 from World Development Indictors (WDI). By using a theoretical model and regression model, it found that that there is a significant relationship between health status and economic growth. Again by using 2SLS (Two Stage Least Square), it found that there is a highly significant effect of health indicators on economic growth in India.

Malik (2015) has investigated the long-run association and the two-way causality between public health expenditure and economic growth in India during the period 1960 -2008. Again, this study analysed a two-way causality between the healthecxpenditure and GDP in India. For this study, he collected data from the World Development Report, RBI, and World Health Organization (WHO), between 1960-2008. In this study, he has applied econometrics models such as co-integration and Granger Causality test. This study found that the percentage of health expenditure and infant mortality rate are non-stationary at the level, so the null hypothesis of unit root at level cannot be rejected, and

there a significant and two-way relationships exist in between health expenditure and economic growth in India. Again,the Granger causality test reveals that there is causality running from LEAB to HE and no causality from HE to LEAB.

SPECIFIC OBJECTIVES

1. To analyse the trend and pattern of public healthcare expenditure and GSDP in eastern states of India (1991-2020).
2. To examine a comparison analysis of total health expenditure and GSDP in four eastern states of India.

HYPOTHESES

1. There has been a significant decline in total health expenditure among four eastern states (Assam. Bihar, Odisha, West Bengal) in India from the period 1991-2020.
2. There is no significant relationship among total health expenditure and GSDP in four eastern states of India.

MATERIAL AND METHODS

Sources of Data: The present study is compiled on secondary sources of data from several government sources and plan documents. The data on Govt. expenditure on health are collected from RBI`s annual report on State Govt. finance published in the RBI bulletin and World Bank database etc.

Variables: Total health expenditure (Revenue and Capital) GSDP (eastern states)

Time Period:1991-2020 (30 years)

Methods: For analysing the trend and pattern simple tabular, percentage, Line Graph and Least Square Trends are used. Again, to analyse a state wise comparison among four eastern states health expenditure and its GSDP, this study has used Descriptive statistics, Log Linear Regression analysis.

Trend of total health expenditure and GSDP in four major states of Eastern India

The health-care expenditure by the government of India includes expenditure on (1) medical and public health (2) family welfare (3) water supply and sanitation (4) nutrition (5) social security and welfare with respect to child and differently abled care. The present study has taken broadly on four components of health expenditure i.e., medical and public health, family welfare and water supply, sanitation and nutrition.

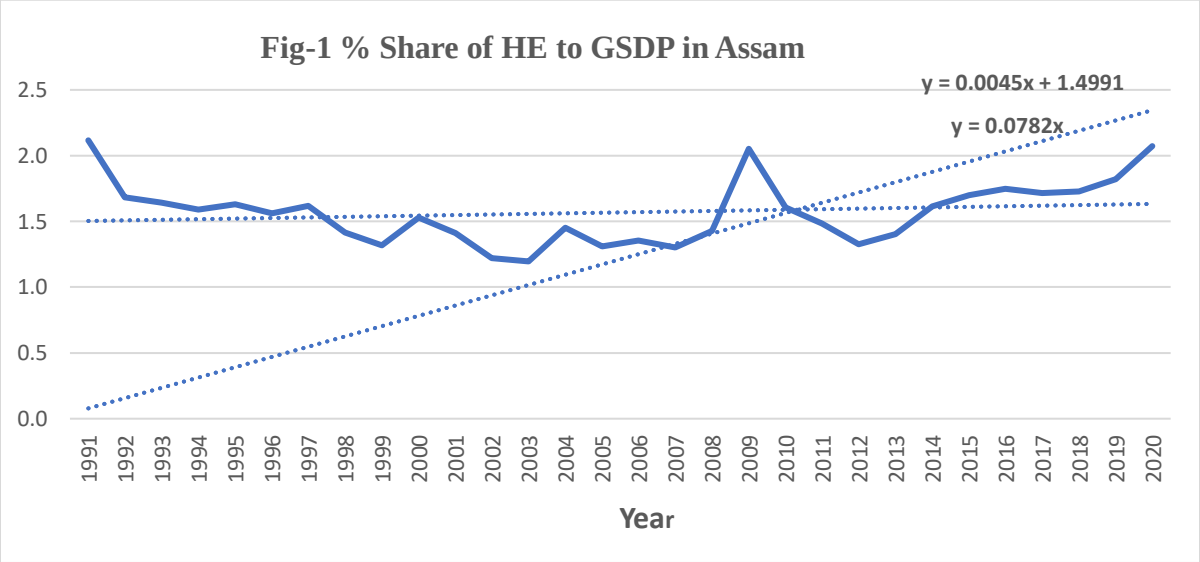
Table- 1 Trend of Total Health Expenditure and GSDP in Assam (1991-2020)

Year	TOTAL RE	TOTAL CE	TOTAL HE	GSDP	RE AS A % OF GSDP	CE AS A % OF GSDP	HE IS A % OF GSDP
1991	2447.8	139.7	2507.6	118480.9	2.1	0.1	2.1
1992	2146.5	133.1	2196.6	130477.2	1.6	0.1	1.7
1993	2451.1	138.0	2489.1	151431.7	1.6	0.1	1.6
1994	2721.6	129.8	2790.4	175510.0	1.6	0.1	1.6
1995	3081.4	91.5	3166.4	194113.7	1.6	0.0	1.6
1996	3212.4	43.3	3281.8	210168.0	1.5	0.0	1.6
1997	3613.9	38.4	3694.3	228060.2	1.6	0.0	1.6
1998	3542.4	35.2	3620.7	255579.1	1.4	0.0	1.4
1999	4534.9	34.8	4588.0	348331.9	1.3	0.0	1.3
2000	5417.2	93.3	5623.5	368141.6	1.5	0.0	1.5
2001	5043.8	153.9	5411.1	383130.8	1.3	0.0	1.4
2002	4925.2	61.6	5300.3	434070.0	1.1	0.0	1.2
2003	5232.6	205.3	5656.8	473046.0	1.1	0.0	1.2
2004	7165.7	124.1	7757.9	533977.1	1.3	0.0	1.5
2005	7280.3	118.2	7768.3	593845.8	1.2	0.0	1.3
2006	8322.0	1326.9	8765.9	646922.1	1.3	0.2	1.4
2007	8337.1	2015.5	9264.0	710761.9	1.2	0.3	1.3

2008	10581.7	4240.5	11563.8	810736.7	1.3	0.5	1.4
2009	16556.3	2413.6	19706.0	959745.7	1.7	0.3	2.1
2010	16160.5	1410.7	18093.1	1126879.6	1.4	0.1	1.6
2011	17466.6	1213.7	21234.5	1431749.1	1.2	0.1	1.5
2012	18587.9	1030.6	20781.6	1568642.4	1.2	0.1	1.3
2013	20585.0	1193.9	24932.2	1777452.2	1.2	0.1	1.4
2014	26896.7	4940.0	31612.6	1957231.5	1.4	0.3	1.6
2015	34897.1	4627.1	38733.3	2279588.3	1.5	0.2	1.7
2016	41188.6	11318.7	44417.6	2543823.6	1.6	0.4	1.7
2017	46032.9	23602.9	48524.9	2831648.9	1.6	0.8	1.7
2018	48944.8	17693.9	53495.2	3093363.2	1.6	0.6	1.7
2019	55171.4	11229.1	63119.2	3468506.8	1.6	0.3	1.8
2020	63277.3	20669.4	70508.8	3401774.5	1.9	0.6	2.1

Sources-Computed by Authors

Table -1 illustrates the trend of total health expenditure and GSDP in the states of Assam from 1991to 2020. It indicates an increasing trend over the study period. The percentage share of total health expenditure to its GSDP was 2.1 in the initial period of 1991. After that gone down. Again, in the year 2020, it is around (2.1) percent . Which is very low value if we compare it to the other developed states. So proper intervention is needed for this state for a better health facility.



Sources- Computed by Authors

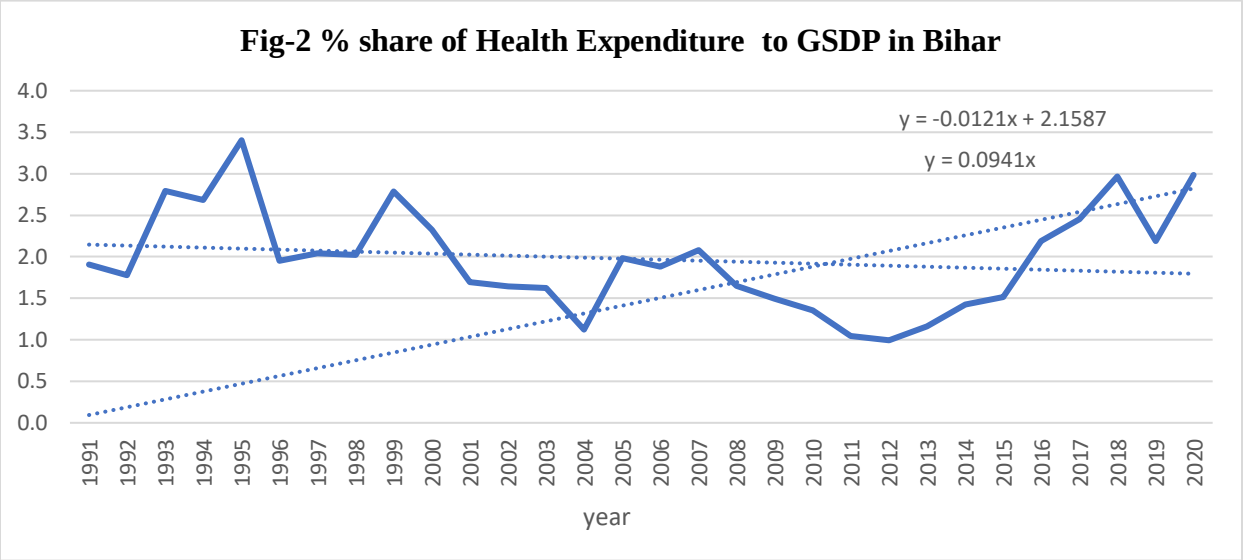
Figure 1 shows an increasing trend of the percentage share of health expenditure to GSDP in Assam from 1991-2020. The least-square trend equation was computed and the coefficient was found to be 0. 004. Since the coefficient is positive, there is an increasing trend, which is a positive factor for developing countries like India.

Table- 2 Trend of total health expenditure and GSDP in Bihar (1991-2020)

Year	TOTAL RE	TOTAL CE	TOTAL HE	GSDP	R.E AS A % OF GSDP	C.E AS A % OF GSDP	H.E AS A % OF GSDP
1991	5031.1	598.3	5629.4	295188	1.7	0.2	1.9
1992	4854	818.7	5672.7	319142.5	1.5	0.3	1.8
1993	5644.3	730.7	6375	228119.8	2.5	0.3	2.8
1994	6201.6	764	6965.6	259448.1	2.4	0.3	2.7
1995	7726.1	607.2	8333.3	244834.7	3.2	0.2	3.4
1996	6163.4	194	6357.4	325408.4	1.9	0.1	2.0
1997	6348.5	516.7	6865.2	336615.4	1.9	0.2	2.0
1998	6766.7	1124	7890.7	390331.9	1.7	0.3	2.0
1999	12640	1335.6	13975.6	501737.6	2.5	0.3	2.8
2000	12214.1	1085	13299.1	572420.8	2.1	0.2	2.3
2001	8894.8	869.5	9764.3	576567	1.5	0.2	1.7
2002	9445.3	1248.4	10693.7	649654.7	1.5	0.2	1.6
2003	8748.3	1979.6	10727.9	661738.8	1.3	0.3	1.6
2004	7844.5	903.7	8748.2	777811.6	1.0	0.1	1.1
2005	13761	2589.2	16350.2	824902	1.7	0.3	2.0
2006	14759.3	4164	18923.3	1007371	1.5	0.4	1.9
2007	17824.5	5788.7	23613.2	1136800	1.6	0.5	2.1
2008	20688.5	2794.4	23482.9	1422791	1.5	0.2	1.7
2009	18687.15	5685.7	24372.85	1629229	1.1	0.3	1.5
2010	19655.96	7917.5	27573.46	2035550	1.0	0.4	1.4
2011	19522.45	6264.5	25786.95	2471440	0.8	0.3	1.0
2012	19863.16	8208.7	28071.86	2823679	0.7	0.3	1.0
2013	26069.99	10783.2	36853.19	3171013	0.8	0.3	1.2
2014	36765.98	12009.8	48775.78	3429509	1.1	0.4	1.4
2015	37639.83	18642.2	56282.03	3716018	1.0	0.5	1.5
2016	71793.94	20343.2	92137.14	4210515	1.7	0.5	2.2
2017	91580.44	23285.46	114865.9	4687463	2.0	0.5	2.5
2018	130459.1	26310.76	156769.898	5279758	2.5	0.5	3.0
2019	104457.8	23161.86	127619.67	5825165	1.8	0.4	2.2
2020	122443.4	52937.23	175380.64	5871544	2.1	0.9	3.0

Sources-Computed by Authors

Table-2 Shows the trend of percentage share of health expenditure to GSDP in Bihar over the years 1991-2021. The percentage share of health to GSDP in the year 2020 is around (3.00) per cent. Which indicates that in Bihar so many Intervention are taken in the health sector in the present scenario.



Sources-Computed by Authors

Figure -2 shows an increasing trend of the percentage share of health expenditure to GSDP in Bihar from 1991-to 2020. The least-square trend equation was computed and the coefficient was found to be 0. 001. Since the coefficient is positive, there is an increasing trend, which is a positive factor for developing countries like India.

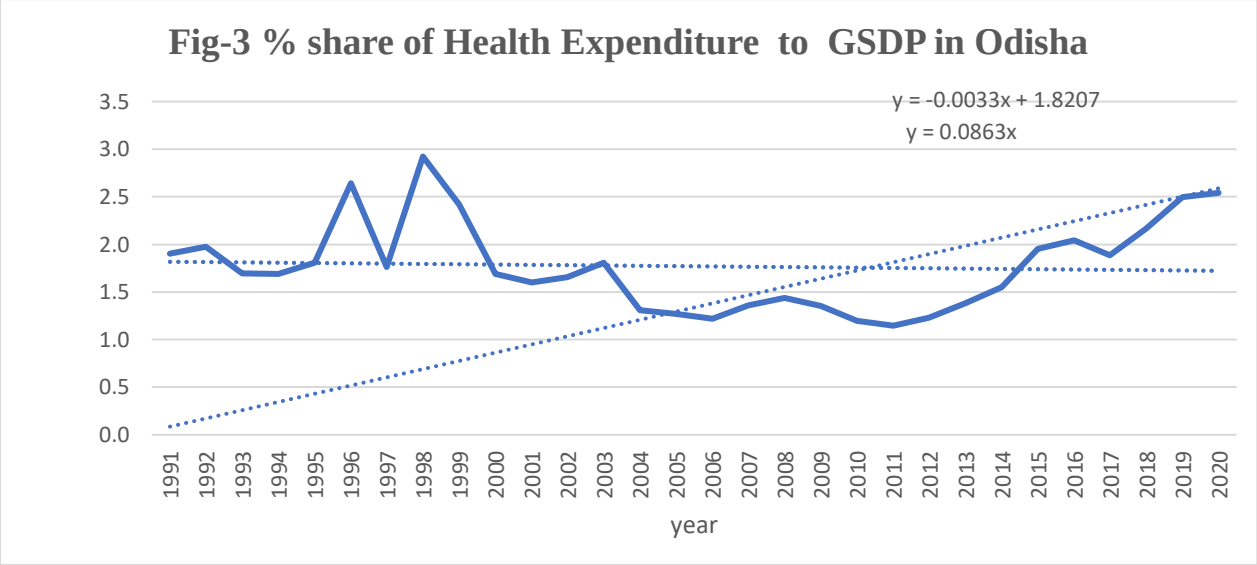
Table- 3 Trend of total health expenditure and GSDP in Odisha (1991-2020)

Year	Total Revenue	Total Capital	Total Health Exp	GSDP	Re As A % Of GSDP	Ce As A % Of GSDP	He As A % Of GSDP
1991	2344.8	320	2664.8	140124.9	1.7	0.2	1.9
1992	2788.9	201.2	2990.1	151375.2	1.8	0.1	2.0
1993	2828.4	311.4	3139.8	185366.6	1.5	0.2	1.7
1994	3257.2	498.8	3756	222239.8	1.5	0.2	1.7
1995	4560.8	332.9	4893.7	271176.2	1.7	0.1	1.8
1996	6521.5	475.8	6997.3	265044.1	2.5	0.2	2.6
1997	5119.9	553.4	5673.3	322349.6	1.6	0.2	1.8
1998	9977.4	420.9	10398.3	355813.7	2.8	0.1	2.9
1999	10131.4	273.6	10405	429860.8	2.4	0.1	2.4
2000	6528	806.5	7334.5	433509.5	1.5	0.2	1.7
2001	6450.1	1025.2	7475.3	467557.4	1.4	0.2	1.6
2002	7400.1	829.6	8229.7	497126.1	1.5	0.2	1.7
2003	10135.4	879.6	11015	610079.3	1.7	0.1	1.8
2004	9668.9	503.2	10172.1	777294.3	1.2	0.1	1.3
2005	9944.7	865.5	10810.2	850964.9	1.2	0.1	1.3
2006	10797.1	1597.3	12394.4	1018395	1.1	0.2	1.2
2007	12959.1	4611.3	17570.4	1292745	1.0	0.4	1.4
2008	14106.3	7277.1	21383.4	1484907	0.9	0.5	1.4
2009	18427.6	3587.7	22015.3	1629464	1.1	0.2	1.4
2010	22750.3	914.5	23664.8	1975299	1.2	0.0	1.2
2011	25232.6	1245.7	26478.3	2309871	1.1	0.1	1.1
2012	29625.2	2611.7	32236.9	2616996	1.1	0.1	1.2
2013	33939.9	7072.9	41012.8	2964754	1.1	0.2	1.4
2014	39150.8	9487.2	48638	3142500	1.2	0.3	1.5
2015	52180	12031.9	64211.9	3285495	1.6	0.4	2.0

2016	64606.1	15712.7	80318.8	3928037	1.6	0.4	2.0
2017	59611.34	23538.2	83149.54	4403953	1.4	0.5	1.9
2018	80557.712	27526.73	108084.4	4986113	1.6	0.6	2.2
2019	96602.81	36305.02	132907.8	5324320	1.8	0.7	2.5
2020	106753.23	28456.78	135210	5326517	2.0	0.5	2.5

Sources-Computed by Authors

Table-3 Shows the trend of percentage segment of health expenditure to GSDP in the states of Odisha over the years 1991-2020. The percentage share of health to GSDP in the year 2020 is around (2.5) per cent. Which indicates a positive trend in the current year.



Sources-Computed by Authors

Figure 3 shows an increasing trend of the percentage share of health expenditure to GDP from 1991-2020. The least-square trend equation was computed and the coefficient was found to be 0. 003. Since the coefficient is positive, it indicates an increasing trend.

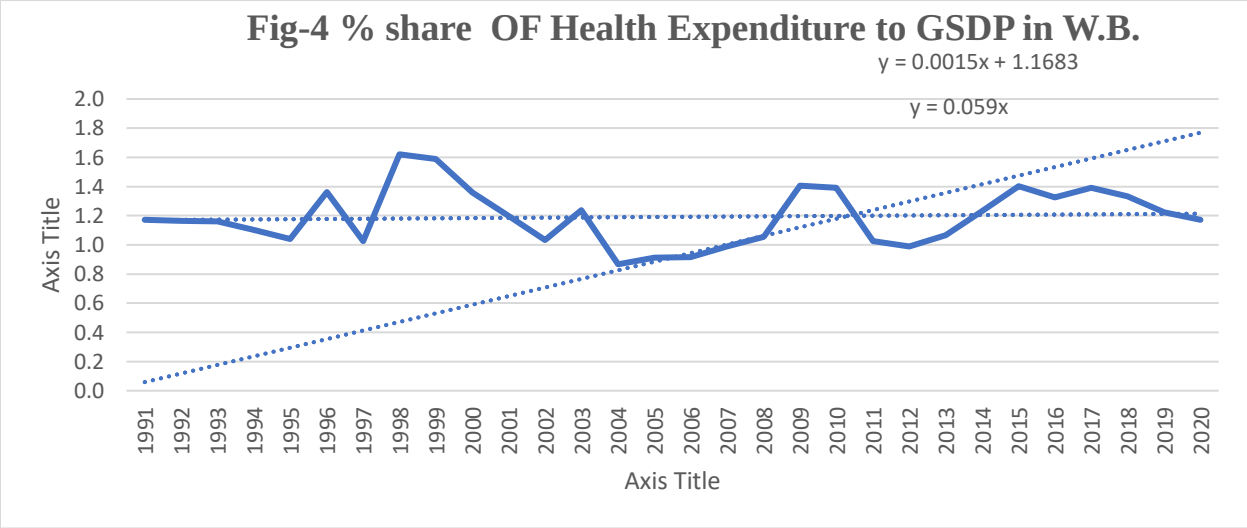
Table 4 Trend of total health expenditure and GSDP in West Bengal (1991-2020)

Year	TOTAL RE	TOTAL CE	TOTAL HE	GSDP	RE AS A % OF GSDP	CE AS A % OF GSDP	HE IS A % OF GSDP
1991	4512.2	213.9	4726.1	403803.7	1.1	0.1	1.2
1992	4847.8	185.5	5033.3	432903.9	1.1	0.0	1.2
1993	6051.6	158.5	6210.1	534241.4	1.1	0.0	1.2
1994	6766.4	75.5	6841.9	620315.8	1.1	0.0	1.1
1995	7558.6	123.9	7682.5	738646.1	1.0	0.0	1.0
1996	11022.4	166.8	11189.2	820754.1	1.3	0.0	1.4
1997	9925	106	10031	979664	1.0	0.0	1.0
1998	18550.8	168.4	18719.2	1155160	1.6	0.0	1.6
1999	20673.3	828.6	21501.9	1353761	1.5	0.1	1.6
2000	18240	1293.8	19533.8	1437249	1.3	0.1	1.4
2001	17916.7	904.9	18821.6	1571443	1.1	0.1	1.2
2002	16458	887.8	17345.8	1680000	1.0	0.1	1.0
2003	21577.3	1820.9	23398.2	1892585	1.1	0.1	1.2
2004	17098	988.7	18086.7	2086564	0.8	0.0	0.9
2005	18436.8	2607.1	21043.9	2302450	0.8	0.1	0.9

2006	20843.6	3089.5	23933.1	2616819	0.8	0.1	0.9
2007	23018.4	6595.7	29614.1	2994828	0.8	0.2	1.0
2008	26215.3	9792.7	36008	3419425	0.8	0.3	1.1
2009	49546.3	6575.4	56121.7	3988804	1.2	0.2	1.4
2010	45337.3	18839.1	64176.4	4609589	1.0	0.4	1.4
2011	49416.1	3979.3	53395.4	5204851	0.9	0.1	1.0
2012	54200.9	4273.5	58474.4	5914645	0.9	0.1	1.0
2013	61845.8	10165.4	72011.2	6768481	0.9	0.2	1.1
2014	76367.3	11905.6	88272.9	7180817	1.1	0.2	1.2
2015	91680.7	20060.7	111741.4	7972998	1.1	0.3	1.4
2016	101960.1	13574.1	115534.2	8725272	1.2	0.2	1.3
2017	105172.3	30261.42	135433.7	9746998	1.1	0.3	1.4
2018	114862.7	31891.67	146754.4	11022828	1.0	0.3	1.3
2019	128476.6	19416.96	147893.6	12078226	1.1	0.2	1.2
2020	137053.6	15595.83	152649.4	13010168	1.1	0.1	1.2

Sources-Computed by Authors

Table-4 shows the trend of total health expenditure and GSDP in West Bengal in the year 1991-2020. This table shows that there is a constant trend over the study period. The percentage share of total health expenditure to its GSDP is around (1.2) percent. Which is very less in compare to the other three eastern states we compare states. So proper intervention is needed for this state for a better health facility.



Sources-Computed by Authors

Figure 4 demonstrates an increasing trend of the percentage share of health expenditure to GSDP from 1991-to 2020. The least-square trend equation was computed and the coefficient was found to be 0. 001. Since the coefficient is positive, there is an increasing trend, which is a positive aspect for states of West Bengal.

Comparative analysis of health expenditure and economic growth in Eastern States of India

The Gross State Domestic Product (GSDP) of Indian states deliver insightful metrics that reflect the financial health and prosperity of the states. The present research study emphasizes on four less-developed eastern states of India which are -Assam, Bihar, Odisha, and West Bengal. The health status was compared in these states in order to recommend appropriate state health policy. The linkage between health expenditure and GSDP of these states was computed and analysed using Regression Models. In the states like -West Bengal has the fourth largest economy in India in terms of its GSDP, but ranks twelfth in terms of per capita income. It endures to be one of the most densely populated states with a population growth rate above that of the

nationwide average. In Assam costs politely in terms of Adult Health index as well as Child Health Index, but fares poorly in relations to development of Rural Health infrastructure. Now a days there are 131 private sector hospitals in Assam dispersed over 13 districts. These are unevenly distributed. If we see some of the districts there is not even a single private sectors hospital. In Bihar the indicators of health depend as much on drinking water, female literacy, nutrition, early childhood development, sanitation, women's empowerment, etc., as they do on hospital and health systems. Almost 40% of Bihar's population lives below the poverty line. This imitates in the poor health indicators of the population. Malnutrition among children and women has increased in day- by-day and the presence of some vector borne diseases, communicable diseases, and water borne diseases is also highest in comare to the other states . Here the Maternal Mortality Ratio (371 per 100,000 live births) is the 4th highest in the nation. In Odisha was and still continues to be a major contributor in the national figure of deaths due to Malaria. Diarrhoeal diseases are still rambling, but there is a significant drop in the deaths due to diarrhea. Tuberculosis (TB) detection and treatment has shown promising trends in the last few years.

Table-5 Descriptive Statistics (Rs Million)

The average value of total health expenditure and GDP at current prices over 30 years in four eastern states in India are briefly discuss in table -5 below. The mean value of total health expenditure in West Bengal is highest as compared to the other three states with the value (50072.6) where the Standard Deviation is with the value;(3787290.2).

Statistical Measures	TOTAL RE	TOTAL CE	TOTAL HE	GSDP	% OF RE TO GSDP	% OF CE TO GSDP	% OF HE TO GSDP
	Assam						
Mean	16527.42	3682.2	18353.5	1106906.4	1.5	0.2	1.6
Standard Deviation	17779.0	6503.1	19818.7	1068518.9	0.2	0.2	0.2
Range	61130.8	23568.1	68312.2	3350025.9	1.0	0.8	0.9
	Bihar						
Mean	29149.8	8122.1	37271.9	1856058.9	1.6	0.3	2.0
Standard Deviation	36200.6	11592.6	47059.0	1831418.6	0.6	0.6	0.6
Range	125605.1	52743.2	169751.2	5643424.1	2.5	0.8	2.4
	Odisha						
Mean	25498.6	6342.5	31841.1	1722308.2	1.57	0.2	1.8
Standard Deviation	29042.3	9946.2	38655.8	1697553.1	0.4	0.2	0.5
Range	104408.4	36103.8	132545.2	5186391.9	1.9	0.6	1.8
	West Bengal						
Mean	42854.4	7218.2	50072.6	4108809.5	1.1	0.1	1.2
Standard Deviation	40533.7	9131.6	48607.2	3787290.2	0.2	0.1	0.2
Range	132541.4	31816.2	147923.3	12606364.0	0.8	0.4	0.8

Sources-Computed by Authors

Regression Analysis of Total Health Expenditure Among Four Eastern States in India

The regression model is used to know association between total health expenditure and GDP growth. The relationship will be tested by a log-linear regression model due to the large value in(Million) of the data set from the RBI bulletin in India.

State	Intercept (α)	Slope (β)	R^2	T	P-value	Equation
Assam	1.970	0.989	0.979	36.03	0.00	GSDP = 1.970 + 0.989 Health Exp
Bihar	1.804	0.955	0.913	17.091	0.00	GSDP = 1.804 + 0.955 Health Exp
Odisha	1.857	0.976	0.951	23.641	0.00	GSDP = 1.857 + 0.976 Health Exp
West Bengal	2.09	0.989	0.978	35.01	0.00	GSDP = 2.09 + 0.989 Health Exp

Sources-Computed by Author using SPSS

The regression result shows that the health expenditure in the four eastern states has a positive impact to its (GSDP). The R^2 value is varies between (0.913 to 0.979) in the four states. Which indicates a good fit regression equation. The P-value is zero (0.00) it clearly shows the coefficient is significant at a 1% level. So, it concludes that if we invest more on health sector it will create the more productivity and the GSDP will reach a better position. Which benefitted to all the people of that nation

RESULT AND DISCUSSION

1. The performance of health expenditure in Bihar is highest than the other three states, the expenditure on health in Bihar is around 3.5% of its GSDP.
2. Where as in West Bengal which is very less with the value 1.2; Which indicates a constant trend over the study period. Which is not good for an economy.
3. The trend line equation shows an increasing trend of the share of health expenditure to GSDP from 1991-to 2020. the coefficient is in between (0.001 to 0.003). which is a positive slope for the four eastern states in India.
4. Coming to the average value of total health expenditure and GSDP at current prices over 30 years, The mean value of total health expenditure in the states like -Assam (18353.5) Bihar (37271.9) Odisha (31841.1) So it clearly reveals that West Bengal is contributes highest to its GSDP growth as compared to the other three states.
5. The regression analysis results that the R^2 value is varies between (0.913 to 0.979) in the four states. Which indicates a good fit regression analysis. The P-value is zero (0.00) it clearly shows the coefficient is significant at a 1% level

RECOMMENDATION

The present study has the following policy recommendations for ensuring better healthcare management in India.

1. Adequate priority should be given to the needy states or economically less developed states as their economic growth and health, expenditure does not show any long-run relationships.
2. Fiscal capability and fiscal space for health expenditure should be improved for all the states so that there will not be any negative repercussions impacts on delivering health care services during crisis time.
3. To achieve a 5 percent near of health expenditure as a percentage of GDP, the governments of India should generate an alternative earning from the sources of external grants and alternative tax revenue.
4. Underdeveloped states with a special goal of "Health for all" are complementary in nature and introduced to each other.

CONCLUSION

This paper makes a comparative study of total health expenditure and GSDP in four eastern states in India. When the people are more and more willing to care about their health conditions as they are getting wealthy. The cost of medical care should be measured while the economy is developing in order to find the equilibrium of medical health development and economic development. This study confirms that the growth pattern of GDP on healthcare expenditure positively increases over the period. It also concluded that the relationship between health expenditure and GDP is positively significant. At last this study suggests that there is a need for govt intervention especially in remote areas for better planning, monitoring and utilization of funds.

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