



Public expenditure on social sectors in Bihar: An analysis

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Abstract

The social sector is one of the most important sectors of any economy. The level of development of this sector directly affects the level of human development of a region or a country. However, the social sector can play an important role in affecting the rate of economic growth as well. As the development of the social sector starts, quality of life will improve, leading to quality human capital that leads to higher labour and other factor productivity. Keeping these things in mind, this research paper discusses the social sector expenditure of Bihar from 1980-81 to 2017-18. This paper investigates, does the adaptation of Millennium Development Goals (MDGs) affect the allocation of social sector and what is the status of four critical expenditure ratio suggested by UNDP in the state? The study find that the allocation of social sector expenditure has been increasing constantly but out of four important social sector expenditure ratios suggested by UNDP, only the social priority ratio is well above the recommended expenditure norms.

Keywords: social sector, MDGs, UNDP, economic development, human development

Introduction

Generally, we define the social sector expenditure as the total expenditure incurred on social services, rural development, food storage, and warehousing as given in central and state budgets (Dev, 2003). The heads under social service includes education, healthcare, and family welfare, water supply and sanitation, housing, rural development, labour, and labour welfare, development of SC/ST and OBCs, social security & welfare, nutrition, and natural calamities (Economic survey, 2015). The expenditure under the head 'Rural Development and food, storage, and warehousing are placed under the economic services in the budget classification of union government (Kaur *et al.*, 2013). All these social sector expenditures are classified into two categories. First, there are social and economic overhead expenditures that have the larger objectives of broadening social opportunities and improving the outcome of social indicators like education, healthcare, and nutritional standards of the overall population. Second, some programs are primarily meant to alleviate poverty. Apart from self-employment generation programs for the rural and urban poor, there are specific health and nutritional programs for women and children, which mainly target the poorer segments of the population.

Bihar is among the poorest state of India, the performance on the social sector is poor, and it is lowest in the states. The low indicators of social sectors compare to the national average, and other developed states reflect the poor's inability to afford these social services in terms of education, health, drinking water, sanitation, and other indicators where government plays the dominant role (WDR, 2005). Bihar's social sector expenditure was deficient compared to the national average. The budgetary allocation for social services was consistently low as compared to the other developed states. The per capita social sector expenditure was lowest in the state. Bihar has a lot of work to do in the field of the social sector, particularly

in improving health and educational outcomes. The literacy rate is lowest in Bihar; it stands 64 percent, whereas it is 74 percent at the national level as per Census 2011. The state has one of the highest incidences of malnutrition and underweight children in the country. Infant mortality is declining but is still high (World Bank, 2016). IMR is 38 in the state, and it is 34 at the all India level in 2016, as per the NITI Aayog. Access to safe drinking water and sanitation is an important social indicator of any state. Better water supply and sanitation services are important for an improved health condition (Bihar Economic Survey, 2018-19, Page, 329). According to the Census 2011, only 4.4 percent of households in the state have access to tap water connection, in which only 3.1 percent of households use tap water from treated sources. Almost 90 percent of households of the state depend on hand pump or tube well for cooking and drinking water. Almost 77 percent of the household do not have a toilet facility on their premises, according to the Census 2011. This percentage is high in the rural areas of the state. The above discussion suggests that countries/states that have given priority to social sector development have performed better with respect to human development and have ultimately attained high rates of economic growth too. There exists a strong connection between economic growth and human development. On the one hand, economic growth is necessary for sustained improvements in human development; on the other, improvements in the quality of the labour force are important for sustainable economic growth (Gustav *et al.*, 2000). The government claims that eradication of poverty and the development of social sector are the main task, and the government intentions are clear and is fully committed to addressing these issues. Today, if we have to trust the government and its agencies which worked for the government in the policy formulation, the prime objective of most of the policies is to help the poor and reduce their numbers effectively. But how honest is this claim? Has the government made expenditure appropriately

to solve these problems? In this research paper, we try to check this claim by analysing the trend and patterns of social sector expenditures concerning public expenditure.

Data and Methodology

In this paper, it has been try to put focus on the social sector expenditure of the Government of Bihar after the partition of the state in 2000, although for the comparison of the expenditure level we have taken the data from 1980-81. The present study is based purely on the secondary data obtained from the repository of various institutions, research organizations and other databases such as World Bank, Global data lab, UNDP, Economic and Political Weekly Research Foundation (EPWRF), Reserve Bank of India (RBI), Ministry of Human Resource Development, Government of India, Ministry of Health and Family Welfare, Government of India and Ministry of Statistics and Programme Implementation, Government of India and various Economic Survey of India. Apart from these, data is also collected from Websites of NITI Aayog, multiple reports from the Planning Commission (Government of India), SRS statistical reports, and Census of India 1981, 1991, 2001 & 2011. In order to get data from Bihar, Finance Department, Government of Bihar, Bihar Economic Survey, Planning, and Development Department, Government of Bihar. The analysis carried out in this paper is quantitative and descriptive. For the meaningful analysis of the data, we have used simple statistical tools such Compound Annual Growth Rate (CAGR), percentage and ratios etc. Nominal expenditure data has been converted into Real expenditure data using the GSDP deflator on latest base year.

Discussion

The states account for a large part of the total government expenditures in India, and an even larger part in the functions or domains of social and economic infrastructure. In the area of the social sector, in particular, the states account for the bulk (more than 80 percent) of government expenditure (Bardhan, 1996) ^[1]. Among the economic services, railways, civil aviation, ports and shipping, posts and telegraph, and telecommunication are major infrastructure areas where the central government either has exclusive jurisdiction or dominates (Sen, 2003) ^[12]. Power is an area where originally the states dominated, but the central government started to supplement the state-level expenditures substantially in the late 1970s, and now it has a considerable presence in this sector. But areas like irrigation, road transport, food storage and warehousing, water supply, and housing are among the infrastructure services that are still dominated by the states (Sen, 2003) ^[13]. The development of infrastructure as a whole, and particularly of those that cater to the immediate needs of ordinary citizens, depends heavily on the states themselves.

Trends in Public Expenditure in Bihar

It is important to investigate the trends of aggregate public expenditures of the economy as the overheads of the social sector are based on it. Table 1 shows the trends in the total expenditure of the Bihar government from 1980-81 to 2014-15. Total expenditure increased from Rs. 1790.6 crores in 1980-81 to Rs. 7870.67 crores in 1991 to 92 and reached the figure of Rs. 17178.22 crores in 2001-02. After the partition of the state between Bihar and Jharkhand and adaptation of Millennium Development Goals (MDGs), the sizable jump can be noticed in total public expenditure of Bihar.

Table 1: Expenditure (Rev + Cap) Under Plan and Non-Plan Heads in Bihar (Figures in Crores)

Year	Revenue Expenditure			Capital Expenditure			Total Expenditure
	Plan	Non Plan	Total	Plan	Non Plan	Total	
1980-81	172.41	756.12	928.53	303.87	558.2	862.07	1790.6
1981-82	198.6	968.5	1167.1	287.48	416.04	703.52	1870.62
1982-83	226.44	1130.1	1356.54	310.26	272.89	583.15	1939.69
1983-84	266.77	1165.46	1432.23	375.56	335.85	711.41	2143.64
1984-85	363.83	1323.39	1687.22	373.35	347.64	720.99	2408.21
1985-86	472.48	1625.56	2098.04	527.63	340.67	868.3	2966.34
1986-87	606.05	1671.26	2277.31	761.98	320.61	1082.59	3359.9
1987-88	747.1	1871.75	2618.85	911.15	384.08	1295.23	3914.08
1988-89	833.02	2377.62	3210.64	705.92	406.92	1112.84	4323.48
1989-90	667.37	3277.19	3944.56	921.39	353.38	1274.77	5219.33
1990-91	971.34	3916.37	4887.71	2013.6	643.92	2657.52	7545.23
1991-92	1386.44	4352.25	5738.69	1388.58	743.4	2131.98	7870.67
1992-93	1130.66	5438.89	6569.55	1385.48	962.3	2347.78	8917.33
1993-94	1401.5	5917.14	7318.64	1231.74	997.48	2229.22	9547.86
1994-95	1221.35	6509.87	7731.22	804.76	841.88	1646.64	9377.86
1995-96	1030.01	7426.16	8456.17	902.18	1019.38	1921.56	10377.7
1996-97	1078.91	7174.95	8253.86	1209.46	1096.34	2305.8	10559.7
1997-98	1113.43	7843.03	8956.46	794.3	1724.42	2518.72	11475.2
1998-99	1344.74	9277.8	10622.5	1598.94	1498.2	3097.14	13719.7
1999-00	2428.02	13700.3	16128.3	3949.6	2890.14	6839.74	22968.1
2000-01	1758.01	12587.4	14345.4	2821.06	2380.16	5201.22	19546.7
2001-02	1194.5	11365.9	12560.4	2243.58	2374.28	4617.86	17178.2
2002-03	1893.8	12131.6	14025.4	3664.24	3789.9	7454.14	21479.5
2003-04	1292.32	13340	14632.3	3852.72	12154.7	16007.4	30639.7
2004-05	1263	13375.5	14638.5	1762.98	54608.2	56371.2	71009.7
2005-06	2431.4	15324.6	17756	3304.94	100111	103416	121172
2006-07	3281.79	17303.2	20585	5913.9	95050.2	100964	121549
2007-08	6099.8	17465.1	23564.9	11728.2	89840.2	101568	125133

2008-09	6120.01	22391.6	28511.6	12431.3	156622	169054	197565
2009-10	8173.74	24410.4	32584.2	14186.8	197111	211298	243882
2010-11	10687.6	27528.3	38215.9	19969.6	143582	163551	201767
2011-12	12484.3	34015.2	46499.5	21029.1	150092	171121	217621
2012-13	16892.5	37573.7	54466.1	22977.4	116401	139379	193845
2013-14	19096.2	43381	62477.2	29162.7	160918	190081	252558
2014-15	25548	47022	72570	36856	213174	250030	322600

Source: Author’s calculation. Data were taken from EPW Research Foundation.

The total expenditure increased from 17178.22 crores in 2001-02 to 197565.07 crores in 2008-09 and reaches to 322599.85 crores in 2014-15. The corresponding figures for revenue expenditure were Rs. 346.06 crores, and 5738.69 crores in 1973-74 and 1991-91, respectively. In 2001-01, 2008-09 and 2014-15, the revenue expenditure was Rs 12560.36, 28511.57, and Rs 72569.98 crores for the respective years. Capital expenditure shows a faster growth from Rs. 204.82 crores in 1973-74 to Rs. 2657.52 crores in 1991-92 and further to Rs. 4617.86 crores in 2001-02. After 2001-02 capital expenditure increases faster than before, it crosses the revenue expenditure and reaches Rs 169053.50 crores in 2008-09 and Rs 250029.87 crores in 2014-15, whereas revenue expenditure was Rs 23564.86 crores and Rs 72569.98 crores in the same years. The increment in capital expenditure, especially in the developmental expenditure shows the state’s commitment toward social development. The growth rate in the developmental expenditure is necessary and required for the growth of basic infrastructure, which is the support system for the state government.

The break-up of public expenditure into plan and non-plan heads shows the proportion of the total expenditure

available for introducing new schemes and programs during a plan period after fulfilling committed liabilities such as salaries and other administrative expenditures described under non-plan expenses. The size of plan expenditure has its relevance as it indicates the financial space available for meeting the possibilities of introducing new schemes after fulfilling regular commitments. The Bihar government has a limited plan size because the state has been facing a severe financial crunch in the recent past.

During the 1980-81 to 1999-00, the public expenditure in Bihar increased at a Compound Annual Growth Rate (CAGR) of 13.61 percent, with capital expenditure rising at the rate of 10.91 percent and revenue expenditure at 15.34 percent (see Table 2). During this period, the government tried to curtail the expenditure to maintain fiscal imbalances, especially in the 1990s after the new economic policy. However, during the next phase, from 2000-01 to 2014-15, the growth pattern reversed. Revenue expenditure slowed down with a growth rate of 11.41 percent per annum, but the CAGR of capital expenditure triggered a sharp jump to 29.46 percent per annum. The total expenditure also increases with the annual growth rate of 20.55 percent per annum.

Table 2: Compound Annual Growth Rate of Public expenditure in Bihar (in Percent)

Year	Revenue Expenditure			Capital Expenditure			Total
	Plan	Non Plan	Total	Plan	Non Plan	Total	Expenditure
1980-81 to 1999-00	14.14	15.59	15.34	13.68	8.57	10.91	13.61
2000-01 to 2014-15	19.53	9.18	11.41	18.69	34.94	29.46	20.55

Source: Author’s calculation. Data Source: Data were taken from EPW Research Foundation.

Developmental and Non-Developmental Expenditure of Bihar

The developmental expenditure (Revenue + Capital) was mainly spent on social sectors, economic services, on creating the transport infrastructure of roads and bridges, on power, on irrigation and flood control (Mohanty and Patra). The capital outlay on social sector was spent on creating and

improving health infrastructure, improving the water supply and sanitation, and creating educational infrastructure in the state. Table 3 shows the trends of developmental and non-development expenditure of Bihar from 1980-81 to 2018-19. The developmental expenditure on social and economic services increased from Rs 885.67 crore in 1980-81 to 3700.05 crore in 1990-91 and Rs 9238.48 crore in 2000-01.

Table 3: Development and Non-Development Expenditure of Bihar (Figures in Crores)

Year	Developmental Expenditure			Non-Developmental Expenditure		
	Revenue	Capital	Total	Revenue	Capital	Total
1980-81	629.19	256.48	885.67	295.08	0.94	296.02
1981-82	847.03	292.49	1139.52	315.07	3.87	318.94
1982-83	980.44	304.81	1285.25	370.6	3.37	373.97
1983-84	1000.62	320.64	1321.26	422.23	3.4	425.63
1984-85	1160.73	373.52	1534.25	521.56	1.46	523.02
1985-86	1486.44	494.32	1980.76	601.17	10.07	611.24
1986-87	1564.78	596.78	2161.56	705.87	10.81	716.68
1987-88	1738.99	625.14	2364.13	869.21	13.18	882.39
1988-89	2205.76	497.36	2703.12	994.9	8.1	1003
1989-90	2467.01	535.1	3002.11	1466.39	9.24	1475.63
1990-91	3128.67	571.38	3700.05	1747.87	13.38	1761.25
1991-92	3646.12	470.68	4116.8	2081.4	10.98	2092.38
1992-93	4142.99	442.25	4585.24	2423.81	2.72	2426.53
1993-94	4598.62	398.73	4997.35	2717.28	4.23	2721.51

1994-95	4630.16	344.71	4974.87	3098.31	2.22	3100.53
1995-96	5019.72	376.05	5395.77	3434.55	3.14	3437.69
1996-97	4789.76	444.37	5234.13	3462.15	5.79	3467.94
1997-98	5151.48	218.25	5369.73	3803.05	8.3	3811.35
1998-99	6001.04	694.68	6695.72	4619.29	4.79	4624.08
1999-00	9299.84	1856.61	11156.5	6825.94	46.21	6872.15
2000-01	8126.83	1111.65	9238.48	6216.41	22.65	6239.06
2001-02	6200.44	1111.72	7312.16	6357.68	6.1	6363.78
2002-03	6888.77	1569.57	8458.34	7134.33	85.63	7219.96
2003-04	7235.52	1724.13	8959.65	7392.69	136.31	7529
2004-05	6830.66	1136.86	7967.52	7803.51	67.65	7871.16
2005-06	9229.01	2011.99	11241	8522.78	71.91	8594.69
2006-07	11938	5056.03	16994.1	8643.01	155.1	8798.11
2007-08	14305.9	5881.26	20187.1	9253.97	222.51	9476.48
2008-09	17978.1	6229.7	24207.8	10529.5	206.65	10736.2
2009-10	20274.4	7057.6	27332	12202.4	274.48	12476.8
2010-11	22925.7	8800.23	31725.9	15287	395.71	15682.7
2011-12	28766.6	8243.95	37010.6	17729.7	608.06	18337.8
2012-13	35817.3	8867.18	44684.5	18645.1	717.34	19362.5
2013-14	40454.9	12668.5	53123.4	22018.5	1332.53	23351
2014-15	46157.8	16401.7	62559.5	26408.2	1748.68	28156.9
2015-16	55639.4	20349	75988.4	27972.3	3617.03	31589.3
2016-17	64153.9	25118.1	89271.9	30607	2090.35	32697.3
2017-18	89550.5	31733.3	121284	42105.7	4246.86	46352.6
2018-19	96499.8	29121.7	125621	40233.9	3295.19	43529

Source: Author's calculation. Data were taken from EPW Research Foundation.

In the 1980s and 1990s, the growth of development expenditure was noticeable, and it grows in many folds. Between 2001-02 and 2017-18, the developmental expenditure increased in multiple times; it raises from Rs. 7312.16 crore in 2001-02 to Rs. 121283.87 crore, while the non-developmental expenditure (Revenue+ Capital) grew at a slower rate, rising from Rs. 6363.78 crore to Rs. 43529.04 crore in the same period. The bulk of it owing to pension as well as interest payments. The development expenditure of the state government, stood

at Rs 121283.87 crore in 2017-18, about 70 percent of the total expenditure, compared to 68 percent in 2014-15. The state government is committed to maintaining a high growth rate in development expenditure, both in revenue and capital account; this is also reflected in the budget estimates of several years. The expenditure on non-developmental general services stood at Rs 6363.78 crore in 2001-02, and it increased to 46329.04 crore in 2017-18. The rise of non-developmental spending was mainly due to the increases in pension and interest payments.

Table 4: Ratio of Public Expenditure Aggregates in Bihar

Year	AE (Percentage of GSDP)	RE (Percentage of TE)	CE (Percentage of TE)	DE (Percentage of AE)
1980-81	3.39	78.29	21.71	49.45
1981-82	3.36	79.75	20.25	60.9
1982-83	3.44	81.49	18.51	66.25
1983-84	3.50	81.55	18.45	61.63
1984-85	3.63	81.82	18.18	63.71
1985-86	4.35	80.62	19.38	66.78
1986-87	4.62	78.94	21.06	64.33
1987-88	5.59	80.4	19.6	60.4
1988-89	5.53	86.4	13.6	62.51
1989-90	6.75	87.87	12.13	57.52
1990-91	7.34	89.31	10.69	59.52
1991-92	8.37	92.26	7.74	60.5
1992-93	9.95	93.66	6.34	59.22
1993-94	10.5	94.78	5.22	59.26
1994-95	9.6	95.71	4.29	58.15
1995-96	12.28	95.71	4.29	57.3
1996-97	9.91	94.83	5.17	55.64
1997-98	11.19	97.53	2.47	52.56
1998-99	12.4	93.82	6.18	55.01
1999-00	19.2	89.45	10.55	57.07
2000-01	14.34	92.67	7.33	54.52
2001-02	13.21	91.83	8.17	49.18
2002-03	14.11	89.44	10.56	47.65
2003-04	16.03	88.72	11.28	46.83
2004-05	14.98	92.4	7.6	39.73
2005-06	17.14	89.5	10.5	49.81
2006-07	17.74	79.8	20.2	62.63

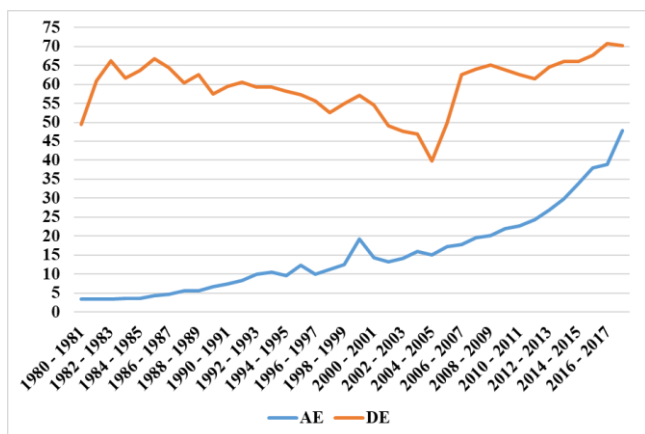
2007-08	19.56	79.43	20.57	63.94
2008-09	20.11	81.58	18.42	65.11
2009-10	21.97	81.63	18.37	63.87
2010-11	22.63	80.6	19.4	62.56
2011-12	24.35	84.01	15.99	61.5
2012-13	26.95	85.04	14.96	64.56
2013-14	29.82	81.69	18.31	66.07
2014-15	33.88	79.99	20.01	66.06
2015-16	38	77.72	22.28	67.65
2016-17	38.89	77.69	22.31	70.68
2017-18	47.82	78.54	21.46	70.15

Notes: AE: Aggregate Expenditure; RE: Revenue Expenditure; CE: Capital Expenditure; DE: Development Expenditure
 Source: Author's calculation. Data were taken from (i) EPW Research Foundation, (ii) RBI: State Finances, A Study of Budgets.

Table 4 shows some critical ratios at the macro level, and we can draw very valuable inferences from it. Firstly, we find that the percentage of aggregate public expenditure to GSDP increased significantly during the study period. Secondly, the share of capital expenditure in aggregate expenditure recorded an increase with fluctuations in this period. Thirdly, the share of developmental expenditure during 1980-81 to 1988-89 shows a continuous increase, but after that it starts fluctuating till 2004-05 and after that again shows a massive jump in the developmental expenditure pointing towards an increase in the government's attention to the developmental sector of the state economy. Thus, the macro scenario regarding public expenditure during the study period can be characterized by the continuous increase in the share of public expenditure in GSDP, increase in the share of capital expenditure in total spending by the state, and rise in the share of development expenditure. Development expenditure constitutes economic services and social services, of which social services assume more importance in Bihar in 2005-06. The share of development expenditure to the public expenditure of Bihar shows almost a 10 percent jump. The fluctuations in the public expenditure ratios indicate the intentions of the government toward the social sector, which is not consistent.

the social amenities of the people. Earlier studies by Prabhu (1997), UNDP (1997), and Chelliah and Sudarshan (1999) have shown that social sector expenditure either taken as a proportion of GDP or as a proportion of aggregate expenditure started declining for the majority of the states from the mid-1980s. This trend continued in the early 1990s as well. In our study, we cover the before and after the reforms as reforms at the state level transcended a bit late, which focused on the lagging status of human development, and the primary responsibilities for social sector expenditure lie with the states.

In this section, an attempt is made to assess the extent and direction of expenditure on the social sector in Bihar from 1980-81 to 2017-18. The expenditure of the social sector includes both revenue and capital expenditure, where capital expenditure makes promotional activity, and revenue expenditure is meant for protective and social security measures. Social services expenditure comprises expenditure on 12 items in the revenue expenditure part. Within the social services, education expenditures include expenditure on sports and youth affairs. Health expenditure is defined in two ways; one way it comprises expenditure on the heads of medical, public health, and family welfare, whereas in another, it includes expenditure on water supply and sanitation. These categories were kept separate as expenditure on water supply, and sanitation contributes to health indirectly and is not considered as an integral part of health (Prabhu, 2001; Nayak, 2010). Generally, people benefit from general public investment and the development spending on a variety of services delivered by the government, including education, health, and family welfare, water supply and sanitation, housing and urban development, social security and welfare, and nutrition (Birdsall, 1993). The government of Bihar had increased its allocations to the social sectors quite significantly after reform. It was almost stagnant for quite a long time. The early period of stagnation was attributable to the acute fiscal health crisis that engulfed almost all states, including Bihar. The situation changed after 2005-06 when then fiscal health improved considerably as a result of a larger transfer of resources from the union government to the states as recommended by the twelfth finance commission, and the acceleration in economic growth (Rao, 2016) [28].



Source: Table 4

Fig 1: Aggregate Expenditure (AE) as Percent of GSDP and Development Expenditure (DE) as Percent of AE in Bihar.

Trends in Social Sector Expenditure of Bihar

A state is said to be a welfare state when it spends more on

Table 5: Trends of Social Sector Expenditure in Bihar

Year	Expenditure on Social Sector (in	Per capita Social Sector Expenditure	Percent of GSDP	Percent of Aggregate Expenditure	Percent of Development Expenditure
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	crores)				
1980-81	431.98	62	0.82	24.12	48.77
1981-82	579.84	82	1.04	30.99	50.88
1982-83	667.44	92	1.18	34.4	51.93
1983-84	661.67	90	1.08	30.86	50.08
1984-85	742.47	98	1.12	30.83	48.39
1985-86	960.58	125	1.41	32.39	48.5
1986-87	1000.53	127	1.37	29.78	46.29
1987-88	1055.98	131	1.51	26.98	44.67
1988-89	1402.53	171	1.79	32.44	51.89
1989-90	1716.09	205	2.22	32.88	57.16
1990-91	2009.58	234	2.37	32.32	54.31
1991-92	2269.39	259	2.79	33.35	55.13
1992-93	2316.9	259	2.98	29.92	50.53
1993-94	2517.86	275	3.13	29.86	50.38
1994-95	2904.52	311	3.26	33.95	58.38
1995-96	3334.38	350	4.35	35.41	61.8
1996-97	3297.29	339	3.47	35.05	63.0
1997-98	3692.14	372	4.05	36.14	68.76
1998-99	3976.68	513	4.05	32.67	59.39
1999-00	6467.72	813	6.35	33.09	57.97
2000-01	6061.91	740	5.13	35.77	65.62
2001-02	4559.82	541	4.05	30.67	62.36
2002-03	4916.69	574	3.91	27.7	58.13
2003-04	5479.85	628	4.59	28.64	61.16
2004-05	4932.27	556	3.68	24.59	61.9
2005-06	7190.35	797	5.46	31.86	63.97
2006-07	8513.08	929	5.57	31.37	50.09
2007-08	10666.9	1146	6.61	33.78	52.84
2008-09	12892.1	1364	6.97	34.67	53.26
2009-10	14309	1494	7.35	33.44	52.35
2010-11	16161.5	1663	7.21	31.87	50.94
2011-12	19535.9	1983	7.9	32.46	52.78
2012-13	24438.2	2449	9.51	35.31	54.69
2013-14	28252.7	2797	10.48	35.14	53.18
2014-15	33386.3	3264	11.95	35.26	53.37
2015-16	38683.5	3457	13.09	34.44	50.91
2016-17	44329.1	3902	13.65	35.1	49.66
2017-18	65878.7	5709	18.22	38.11	54.32

Source: Author's calculation. Data Source: (i) EPW Research Foundation, (ii) RBI: State Finances, A Study of Budgets.

Table 5 gives an overview of the social sector expenditure (in crores), per capita social sector expenditure (in rupees), as a percentage of GSDP, as a proportion of aggregate expenditure, and as a percent of development expenditure from the period 1980-81 onwards. The per capita social sector expenditure rises over the period. It means the allocation of the social sector increases over time. It was only rupees 62 in 1980-81, and it increases to rupees 541 and rupees 5709 in 2001-02 and 2017-18, respectively. As a proportion of GSDP, the share of social sector expenditure has increased during the period. The share in 1980-81 was 0.82 percent. It grew to 2.79 percent in 1991-92. It further starts rising continuously and reaches the highest level at 18.22 percent in 2017-18. The share of social sector expenditure to the aggregate expenditure of Bihar is growing continually but with a moderate rate from 24.12 percent in the year 1980-81 to 33.35 percent in the year 1991-92, but after this, it starts to decline and touches its lowest at 24.59 percent in 2004-05. After this, it is continuously increasing and reaches to highest level 38.11 in 2017-18.

As a proportion of total expenditure, the share of the social sector has increased since the beginning of the study period, but as a proportion of development expenditure, it is almost stagnant to the whole period with minor fluctuation. In

1980-81 it was 48.7 percent, and in 2017-18 it is 54.32 percent of total development expenditure. As a percent to development expenditure registered almost 6 percent growth in 38 years.

However, when considered as a proportion of public expenditure, the priority given to the social sector spending has been increasing. One could be tempted to conclude, therefore, that the state has done better after the launch of National Flagship Programs to look into the social wellbeing. Over the years, the numbers of centrally sponsored schemes have continued to increase at the expense of the allocation from the overall plan outlays to the states (Dev and Mooji, 2002). However, the primary responsibilities of the state in increasing the social sector expenditure cannot be denied (Dev and Mooji, 2002).

The table 6 presents the trends of the Compound Annual Growth Rate (CAGR) of gross state domestic product at factor cost, public expenditure, developmental expenditure, public expenditure on the social sector and per capita expenditure on the social sector. In the case of gross state domestic product (GSDP) data indicates that the growth performance has been quite weak, it was 3.87 percent during 1980-81 to 1989-90, and it was further decline to 1.86 during 1990-91 to 1999-00. Post bifurcation, GSDP growth rate has been improved and reaches 5.13 percent during

2000-01 to 2009-10, but Bihar continued to lag with many other states. The overall CAGR of GSDP stood at 5.19 percent during 1980-81 to 2017-18, which below the national average. With the increasing GSDP public expenditure, development expenditure, social sector

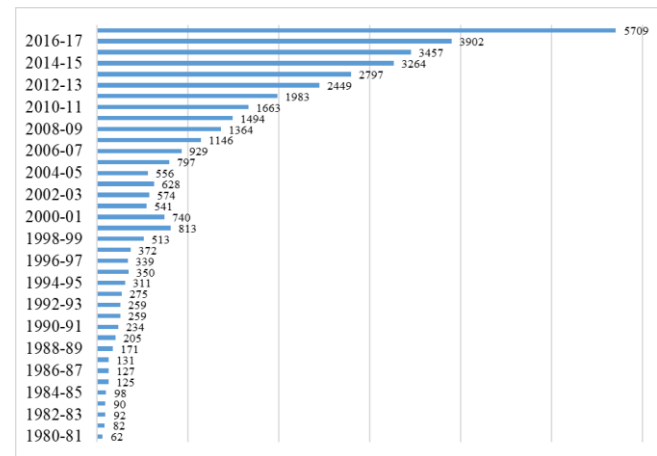
expenditure, and per capita social sector expenditure also rises. During 1980-81 to 1989-90 and 1990-91 to 1999-00, the CAGR of public expenditure was 11.29 percent and 12.14 percent.

Table 6: Compound Annual Growth Rate of Social Sector Expenditure in Bihar (in Percent)

Period	GSDP	PE	DE	SSE	PCSSE
1980-81 to 1989-90	3.87	11.29	12.98	14.79	12.60
1990-91 to 1999-00	1.86	12.14	11.67	12.40	13.23
2000-01 to 2009-10	5.13	9.71	11.46	8.97	7.27
2010-11 to 2017-18	6.16	16.57	18.25	19.20	16.67
1980-81 to 2017-18	5.19	12.78	13.82	14.14	12.62

Note: GSDP: Gross State Domestic Product (at Factor Cost); PE: Public Expenditure; DE: Development Expenditure; SSE: Social Sector Expenditure; PCSSE: Per Capita Social Sector Expenditure. Source: Authors calculation. Data Source: (i) EPW Research Foundation, (ii) RBI: State Finances, A Study of Budgets

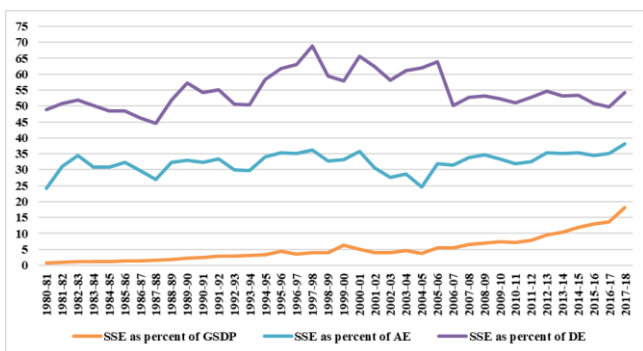
The pattern of development expenditure and social sector expenditure (SSE) has been different from the public expenditure and declining, which stood at 12.98 percent and 14.79, respectively, during 1980-81 to 1989-90 and 11.67 percent and 12.40 percent respectively during 1990-91 to 1999-00. The per capita social sector expenditure (PCSSE) has followed the public expenditure, and it is rising during the same period. But the trend is different in the case of per capita social sector expenditure. During 2000-01 to 2009-10, all the indicators except GSDP, registered its lowest growth rate. During 2010-11 and 2017-18, all the indicators have shown improvement in their growth rate and perform at its best. During 2010-11 and 2017-18, the CAGR of GSDP was 6.19 percent followed by public expenditure, development expenditure, SSE, and PCSSE stood at 16.57 percent, 18.25 percent, 19.20 percent, and 16.67 percent respectively during the same period. From the above data, it can be perceived that the Bihar government focus some attention towards the social sector only after 2010 and onwards but still lagging behind the many states in terms of the social sector expenditure.



Source: Table 5

Fig 3: Per Capita Social Sector Expenditure in Bihar (In Rupees)

Tables 7 and 8 give expenditure on the various heads as a proportion of aggregate expenditure. The share of education (which includes sports, arts, and culture) registered an increasing trend till 2000-01; after that, it starts falling and reaches its lowest at 40.68 percent in 2017-18(RE). The share of medical and public health, family welfare and water supply and sanitation continuously decline since 1980-81. Expenditure on medical and public health has been continuously decline from 22.72 percent in 1980-81 to 9.59 in 2018-19. And the share for housing and urban development, social security and welfare, and other social services recorded rise since 1980-81. One can realize that as a percentage of GSDP, the share of the social sector increased over time. The proportion of individual components in total social sector expenditure points towards the relative priority being assigned to each component by the state government. These shares have been given in the table 7 and 8 respectively.



Source: Table 5

Fig 2: Social Sector Expenditure (SSE) as Percent of GSDP, as Percent of Aggregate Expenditure (AE) and as Percent of Development Expenditure (DE) in Bihar

Table 7: Composition of Social Sector Expenditure in Bihar

Heads	1980-81	1982-83	1984-85	1986-87	1988-89	1990-91	1992-93	1994-95	1996-97	1998-99	2000-01
(1) Education, Sports, Art and Culture	54.66	54	58.46	50.27	61.49	61.82	57.9	58.22	67.66	64.76	66.19
(2) Medical and Public Health	22.76	19.34	22.11	17.24	14.67	16.16	16.95	17.58	11.9	11.87	11.78
(3) Family Welfare	NA	NA	NA	NA	NA	NA	NA	NA	3.39	2.86	4.65
(4) Water Supply and Sanitation	NA	NA	NA	9.91	6.25	4.22	6.83	5.72	3.76	5.11	5.16
(5) Housing	0.31	0.59	0.35	1.15	0.48	0.28	0.05	0.04	0.11	0.16	0.17
(6) Urban Development	NA	NA	NA	1.21	0.91	1.14	1.45	1.11	1.61	1.46	2.51

(7) Welfare of SC, ST and OBC	NA	NA	NA	5.93	4.13	4.86	4.45	5.95	2.96	3.76	2.98
(8) Labour and Labour Welfare	4.79	3.2	2.37	2.28	1.51	1.88	1.99	1.72	1.18	1.02	0.8
(9) Social Security and Welfare	10.88	17.65	12.59	7.45	5.57	6.94	7.72	8.04	5.3	4.8	4.03
(10) Nutrition	NA	NA	NA	0.64	0.57	0.5	0.7	0.69	0.23	0.01	0.34
(11) Relief on account of Natural Calamities	4.25	3.77	2.46	3.37	3.98	1.74	1.51	0.56	1.43	3.74	1
(12) Others	2.19	1.38	1.54	0.52	0.44	0.43	0.43	0.36	0.48	0.46	0.39
Social Services (1 to 12)	100	100	100	100	100	100	100	100	100	100	100

Note: NA: Data not available; Source: Author's Calculation, Data were taken from EPW Research Foundation

Table 8: Composition of Social Sector Expenditure in Bihar

Heads	2002-03	2004-05	2006-07	2008-09	2010-11	2012-13	2014-15	2015-16	2016-17	2017-18	2018-19
(1) Education, Sports, Art and Culture	66.3	64.06	62.95	53.38	51.01	59.11	49.51	49.52	45.63	40.68	46.34
(2) Medical and Public Health	11.56	10.67	11.93	8.73	8.79	8.49	9.68	10.87	11.41	9.42	9.59
(3) Family Welfare	3.64	2.09	1.61	1.28	1.53	1.33	1.12	0.94	0.98	1.32	0.9
(4) Water Supply and Sanitation	5.7	4.27	5.62	4.29	6.42	2.54	4.46	3.58	5.34	5.65	10.7
(5) Housing	0.15	0.03	0.09	0.09	4.86	3.38	4.79	3.84	8.11	9.79	9.65
(6) Urban Development	1.72	2.21	3.28	8.03	3.13	4.66	4.36	4.26	6.37	6.08	5.67
(7) Welfare of SC, ST and OBC	2.36	2.1	2.23	2.11	3.51	7.18	6.84	10.53	5.07	4.64	4.12
(8) Labour and Labour Welfare	0.69	2.33	4.65	0.52	0.49	0.38	0.36	0.45	0.87	0.7	0.95
(9) Social Security and Welfare	4.31	5.68	3.54	7.85	11.82	8.3	13	11.42	11.25	10.31	8.16
(10) Nutrition	0.84	0.7	3.06	3.92	3.29	3.27	3.58	2.78	2.15	2.71	2.28
(11) Relief on account of Natural Calamities	2.29	5.4	0.6	8.89	3.4	0.86	1.26	0.9	1.85	7.8	0.9
(12) Others	0.43	0.45	0.39	0.62	1.67	0.11	0.5	0.5	0.42	0.55	0.53
Social Services (1 to 12)	100	100	100	100	100	100	100	100	100	100	100

Source: Author's Calculation, Data were taken from EPW Research Foundation.

The table 7 and 8 portrays the changes in the composition of social sector expenditure in Bihar. It can be inferred that the education sector has absorbed the largest chunk from the social sector expenditure as it is known that education is key to all success and achievements; hence the government is intentionally investing more on the educational front. The share of the health sector is conspicuous by being the neglected sector as compared to education. The share of medical and public health is less half of the education expenditure, and it continues to decline all the years, and in recent past, it has experienced a drastic decline in its share too. While it is equally important for human resource development, as we know that health is one of the determinants of the human development index. The share of water supply and sanitation, housing and urban development increased overtime but the sub sectors like family welfare, welfare of SC, ST and OBC, social security and welfare, nutrition and natural calamities registered decline in their share overtime.

Critical Expenditure Ratios

Several commentators have pointed out that it is the lack of political commitment, not lack of financial resources that is the real cause of human neglect. It was the main conclusion of the Human Development Report 1991- the second in a series of annual reports on the subject. In order to measure the extent of the political commitment of the government to the social sector, we estimated four critical expenditure ratios of Bihar following the UNDP methodology. To analyse the how public spending on human development

can be designed and monitored, four ratios have been suggested in the Human Development Report 1991(UNDP, 1991).

- The Public Expenditure Ratio** – The Public Expenditure Ratio (PER) is the percentage of national income (in this case, it is state income, i.e., GSDP) that goes into public expenditure. UNDP suggested that if a government is to allow for sufficient spending on priority areas, a public expenditure ratio of 20-25 percent is desirable.
- The Social Allocation Ratio** – The Social Allocation Ratio (SAR) is the percentage of public expenditure earmarked for social services. UNDP suggested that it should be more than 40 percent of total public expenditure.
- The Social Priority Ratio** – The Social Priority Expenditure (SPR) is the percentage of social expenditure devoted to priority areas. What is considered to be a priority will naturally change from one country to another and one state to another and change over time as human development proceeds. In our case, we have taken education, public health, water supply, and sanitation, and food and nutrition as a priority area. This ratio has to be more than 50 percent (UNDP, 1991)
- The Human Expenditure Ratio** – The Human Expenditure Ratio (HER) is the percentage of national income devoted to human priority concerns. The human expenditure ratio is the product of the first three ratios and should be 5 percent, suggested by UNDP.

Table 9: Selected Social Sector Critical Ratios in Bihar

Year	PER (TE/GSDP)	SAR (SSE/TE)	SPR (SPE*/SSE)	HER (SPE/GSDP)
1991-92	8.37	33.35	81.79	2.28
1992-93	9.95	29.92	82.38	2.45
1993-94	10.5	29.86	81.34	2.55
1994-95	9.6	33.95	82.2	2.68
1995-96	12.28	35.41	76.13	3.31
1996-97	9.91	35.05	83.55	2.9

1997-98	11.19	36.14	83.1	3.36
1998-99	12.4	32.67	81.74	3.31
1999-00	19.2	33.09	82.79	5.26
2000-01	14.34	35.77	83.47	4.28
2001-02	13.21	30.67	84.8	3.44
2002-03	14.11	27.7	84.41	3.3
2003-04	16.03	28.64	82.45	3.78
2004-05	14.98	24.59	79.71	2.94
2005-06	17.14	31.86	82.63	4.51
2006-07	17.74	31.37	83.57	4.65
2007-08	19.56	33.78	72.84	4.81
2008-09	20.11	34.67	70.32	4.9
2009-10	21.97	33.44	75.45	5.54
2010-11	22.63	31.87	69.51	5.01
2011-12	24.35	32.46	68.73	5.43
2012-13	26.95	35.31	73.41	6.98
2013-14	29.82	35.14	70.08	7.34
2014-15	33.88	35.26	67.24	8.03
2015-16	38	34.44	66.75	8.73
2016-17	38.89	35.1	64.53	8.81
2017-18	47.82	38.11	58.46	10.65

*Social Priority Expenditure or Expenditure on priority area or Human priority concern.

Source: Authors calculations. Data taken from EPW Research Foundation, RBI State Finances: A Study of Budgets.

It is a powerful operational tool that allows policy-makers who want to restructure their budgets to see existing imbalances and the available options. If the public expenditure is already high (as in many developing countries), but the social allocation ratio is low, the budget will need to be reassessed to see which areas of expenditure could be reduced. If the first two ratios are high, but the ultimate human development impact, as reflected in human development indicators, is low, the social priority ratio must be increased. The human expenditure ratio should increasingly become one of the principal guides to public spending policy. When resources are tight, greater attention must be paid to allocation priorities and efficiency in spending (Kumar, 2017)^[16].

The table 9 gives trends of the social sector expenditure in Bihar in the light of expenditure norms recommended by UNDP (1991). Table 9 shows that during the study period, none of the years till 2010-11, public expenditure ratio (PER) was close to the norm of 25 percent of GSDP in the state. It varies from a minimum of 8.37 percent in 1991-92 to a maximum of 26.95 percent in 2012-13, thus reflecting upon low per capita income and low tax-GDP ratio in the State. But after 2012-13, the PER gains momentum and reaches its peak at 47.82 percent in 2017-18(RE). The share of social allocation ratio (SAR) out of total public expenditure has a rising trend from the beginning till 1997-98 after it starts to decline and reaches its lowest at 24.59 percent in 2004-05. The SAR again registered increasing trend and touched its highest at 38.11 percent. Thus, we find that SAR has not fulfilled the standard UNDP norms of public expenditure being 40 percent in the social services as put forth by UNDP, which is the outcome of fiscal constraints. This fiscal strain is well explained by the mounting proportion of expenditure being spent on salary, pension, and interest payment in the state. The social priority ratio (SPR), however, stood above the prescribed norm of 50 percent throughout the year, thus fulfilling the suggested criteria by UNDP. Social priority expenditure includes the expenditure on education, health, water &

sanitation, and food and nutrition. Out of twelve heads, which is the part of the social sector, these four heads absorb most of the expenditure of the social sector. The expenditure on social priority areas was well over the 80 percent till 2005-06. After that, it also starts declining and reaches its lowest to 58.46 percent but still above the recommended norms. The human priority expenditure (HER) as a proportion of GSDP gives a disappointing sense as it remained below the suggested norm of 5 percent till 2008-09. After this, it is continuously rising and reaches at its best at 10.65 percent in 2017-18(RE).

Conclusion

The level of social sector expenditure directly affects the level of human development of a region or a country. However, the social sector can play an important role in affecting the rate of economic growth as well. As the development of the social sector starts, quality of life will improve, leading to quality human capital that leads to higher labour and other factor productivity. Therefore, the achievement in the economic front is closely dependent on and related to the social sector. From the above comprehensive data analysis of social sector expenditure, it can be perceived that the Bihar government focuses some attention towards the social sector only after the 2010 onwards but still lagging behind the many states in terms of the social sector expenditure. It is found that Bihar's share of capital expenditure in total social sector expenditure is improving over the years, although its percentage is minimal as compared to the share of revenue expenditure of the state. The growth rate in the developmental expenditure is necessary and required for the growth of basic infrastructure, which is the support system for the state government. The per capita expenditure on the social sector by the state is amongst the lowest in Bihar, which has been a severe threat to ensuring the quality of social services to poor masses in the state because poor people have been almost dependent on government services. The share of the social sector to total public expenditure of Bihar was diminishing, but the long-term growth rate is positive. It can be noticed from the analysis; the education sector has absorbed the substantial chunk from the social sector

expenditure as it is known that education is key to all success and achievements; hence the government is intentionally investing more on the educational front. But at the same time health sector is conspicuous by being the neglected sector as compared to education which have a serious repercussion on health of the poor in the state. The share of medical and public health is less than half of the education expenditure, and it continues to decline all the years, and in recent past, it has experienced a drastic decline in its share too while it is equally essential for human resource development, as we know that health is one of the determinants of the human development index. Out of four important critical expenditure ratios suggested by UNDP, only one critical expenditure ratio fulfilling the expenditure norms in Bihar, i.e. social priority expenditure and rest three is the under-investment, which has been a highly detrimental effect on the overall development of the social sector in the state.

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