AN EMPIRICAL STUDY ON THE RELATIONSHIP BETWEEN PUBLIC EXPENDITURE ON SOCIAL INFRASTRUCTURE AND HUMAN DEVELOPMENT

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Abstract:*The recent COVID-19 pandemic has emphasized the importance of the healthcare sector and its inter-linkages with other key sectors of the economy. The ongoing pandemic has showcased how a healthcare crisis can get transformed into an economic and social crisis. A good social infrastructure is very important to achieve higher growth and also helps in inclusive development. The policymakers had never given importance to these two sectors which are very essential to establish high and balance growth. This paper emphasized the importance of social infrastructure and analyses the status of health and education infrastructure in India. Human development is an important parameter of measuring actual economic development the paper analyzed the trends of human development data. To enhance the facilities or infrastructure in health and education the role of public spending is vital. Data of public expenditure on social services particularly health and education have been studied. From 2014-15 to 2019-20 expenditure of those two social services is doubled but compared to GDP there is no significant change. It seems almost stagnant. This paper also investigates the relationship between public expenditure on social infrastructure and human development.*

Keywords*: HDI, Education index, Life expectancy, GER*

Introduction:

To achieve economic growth the resources need to be utilized properly. The Utilization of resources depends upon the two types of Infrastructure, physical and social infrastructure. Physical infrastructure includes the transport, communication, water, and energy distribution networks which help productive activities like manufacturing, farming, and generating services. Social infrastructure refers to the creation and maintenance of the facility structure that supports the delivery of social services to the people. Social infrastructure plays an important role in the growth of developing economies. Social infrastructure comprises education, public health, women & child welfare, employment and policies for poverty alleviation, housing, environmental protection, water supply, and sanitation, providing social justice, etc. Government implements various welfare schemes for social development in this sector. Social infrastructure improves the quality of life and forms human capital. Social infrastructure is essential to maintain high and inclusive growth. American economist Thorstein Veblen, who wrote his views on social infrastructure that

knowledge and skills are the abstract tools or wealth which requires for the production of material wealth.

Neoclassical economists firmly stated the importance of investment in education to achieve technological growth and high growth rate in their theories. The research by Schultz (1961), Becker (1962), and Minser(1984) highlights that investment in education or human capital is highly influenced by economic growth.

Now in modern economics, the indicator of measuring development is shifted towards human development instead of growth. The concepts of human capital consider human beings as a factor in the process of production. That is why importance is given to enhance the productivity of human capital to improve growth. But the concept of human development is wider and considered to enhance the capabilities of the human capital because human beings are not only a part of the production process but also the end of the development or ultimate beneficiary of the process of development.

Objective: The major objectives of the paper are

- To examine the status of health infrastructure in India
- To study the status of education infrastructure in India
- To understand the human development index of India and identify the trends of the same.
- To analyze the trends in social service Sector expenditure by the government.
- To investigate the association between public expenditure on social services (particularly health and education) and human development.

Research Methodology:

The present paper is dependent on the secondary data published in the Economic survey report 2020-21 and human development reports and indicators published by UNDP. Data of public expenditure on social services particularly health and education have been received from the economic survey report 2020-21, volume 2, and the data related to selected indicators of human development (education index and life expectancy at birth) have opted from the official website of UNDP. Pearson correlation test is used to identify the association between two variables i.e. budgetary expenditure on education and health and education and two components of human development i.e. life expectancy and education index.

Status of health infrastructure in India:

Health is an important parameter of measuring the human development index. Healthy human capital is a prerequisite of economic growth. According to Banerjee, Duflo, and Deaton (2004) better provision of health care is the key to improve health conditions and also economic growth and development in poor countries like India. Healthy human capital is essential to economic growth. Human health influenced the growth pattern poor health of the labor may reduce the productivity and production level. The importance of health for all to achieve inclusive socio-economic development is given at the international level.

In India, health facilities have been provided by the private and government sector. India is considered one of the highest out-of-pocket expenditure countries in the world. India's hospitalization rate is 3 to 4 percent, which is the lowest compared to other middle-income countries in the world; the average hospitalization rate for middle-income countries is 8 to 9 percent and the same is 13-17 percent for OECD countries. The low hospitalization rates don't mean that the population of the country is healthy but it shows the lower access to healthcare. Thus, the low hospitalization rates reflect lower access and utilization of healthcare in India. (Economic survey 2019-20). The health status of the country is highly dependent on the available health infrastructure. Studies on this area prove that there is a significant association between the availability of the health workforce in a healthcare system and health outcomes (Jadhav et al, 2019, Choudhury and Mohanty 2020,Anand and Bärnighausen 2004).

In the last few decades, India could improve and expand health infrastructure but still, it is inadequate compared to the population and it is observed that the distribution of health facilities is also uneven. Medical education facilities in the country have grown fast in the last some years. At present, there are 479 medical colleges. Total 67,218 MBBS students studying In the country including government and private medical colleges regulated by the Medical Council of India. As per the data from the Medical Council of India (MCI) currently, there are 936,488 registered doctors in the country. The World Health Organization (WHO) has promulgated a desirable doctor population ratio as 1:1,000. Yet, over 44% of WHO Member countries reported less than one physician per 1,000 population. In India, there were a total of 10, 22,859 MBBS (Modern Medicine) doctors registered with the MCI or State Medical Councils as on March 31, 2017. After considering attrition, it gives a doctor (modern medicine) and population ratio of 0.77:1,000 as per the current population estimate of 1.33 billion. India has 1.7 nurses per 1,000 population, 43% less than the World Health Organisation norms (3 per 1,000). This includes nurses, midwives, women health visitors and auxiliary nurse-midwives. Overall, India has 3.07 million registered nursing personnel, as of March 2020. There are 24,855 Public Health Centers (PCH) and 5335 Community Health Centers (CHC) in India. PHC and CHC had played a dominant role in curative and preventive healthcare in rural areas.

Apart from the western medical system, Indian traditional AYUSH medical colleges and hospitals are also available and spread all over India. Under the department of AYUSH, there are 488 undergraduate colleges with an admission of 26,406 in India. The trained supportive staff plays a vital role in the healthcare system. If state-wise distribution of trained supportive staff is observed we found that top rank holding states are Arunachal Pradesh, Mizoram, and Nagaland, and their trained supporting health workers are 35.412, 30.168 and 27.849 per one lakh population, Even though these states have fewer training institutes. The bottom three states are Maharashtra, Uttar Pradesh, and Bihar with the staff of 5.359, 4.133 and 2.495 per one lakh population, respectively. In terms of population density, Uttar Pradesh and Bihar are high-density states. The quality of the healthcare system in these states get affected due to fewer numbers of trained healthcare supporting staff.

Status of education infrastructure in India:

Education is an important input for the balanced Socioeconomic development of the country. People are empowered by taking skills and knowledge which ultimately help the economy to grow. To have an inclusive growth of the society all the people should get equal access and opportunities of education. To achieve those objectives adequate educational facilities are essential. The statistics of education reveal certain facts. The number of educational institutions in India is 15, 22,346. School education institutes include Primary, upper primary, secondary and senior secondary schools. In higher educational institutes, there are 799 universities in India including Central universities, State universities, Deemed, State private, central open, State open universities, institutes of national importance and others and 39071 colleges working under these universities. India has 11923 diploma-level training institutes in all. Enrolment at primary, secondary and higher levels in India is increasing constantly. Enrollment under all categories as per education statistics published by MHRD in 2018 there were 260597000 students enrolled in standard I to XII. For higher education enrollment in all the categories was 34585000 in the year 2015-16. The number of girl enrolment per hundred boys enrolled by stage of education is in the year 2015-16 (provisional data) for primary (class I to V) is 100.7, for upper primary (class VI-VIII) it is 97.6, for secondary (class IX-X) girl enrolment per hundred boys enrolled is 81.0. At the senior secondary level, girl enrollment is 56.4 and at higher education, it falls to 23.5. The above statistics prove that there is gender inequality in education.

The girl dropout is very high compared to boys. At every higher stage of education, girl enrolment is declining. The pupil-teacher ratio for primary 23, for upper primary 17, secondary 27, senior secondary 37 and at higher level education it is 24 (does not include standalone institution). The pupil-teacher ratio seems improving but at the senior secondary level, it is high compared to upper primary and higher education. The gross enrollment ratio (GER) in school education under all categories (From I to XII) was 86.5 whereas in higher education it is just 19.4. This data shows that the GER at higher levels of education is declining due to increasing dropout rates in India. To accommodate an increasing number of students at all levels it is indispensable to have more educational institutes and the distribution of the educational institutions should be equal.

Human Development:

The Human Development Index is considered a modern parameter for measuring the development of nations. The HDI is a summary measure that assesses long-term progress in three basic indicators of human development: a long and healthy life, access to knowledge, and a decent standard of living. Long and healthy life is measured by life expectancy. The knowledge level is measured by mean years of schooling among the adult population, which is the average number of years of schooling received in a lifetime by people aged 25 years and older; and access to learning and knowledge by expected years of schooling for children of school-entry age, which is the total number of years of schooling a child of school-entry age can expect to receive if prevailing patterns of age-specific enrolment rates stay the same throughout the child's life. Standard of living is measured by Gross National Income (GNI) per capita expressed in constant 2017 international dollars converted using purchasing power parity (PPP) conversion rates.

India's HDI value for 2019 is 0.645— which puts the country in the medium human development category—positioning it at 131 out of 189 countries and territories. Between 1990 and 2019, India's HDI value increased from 0.429 to 0.645, an increase of 50.3 percent. Table A reviews 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.

Table: 01

India's HDI trends based on consistent time series data and new goalposts

Years	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (2017 PPP$)	HDI value
1990	57.9	7.6	3	1,787	0.429
1995	60.3	8	3.5	2,078	0.461
2000	62.5	8.3	4.4	2,548	0.495
2005	64.5	9.7	4.8	3,217	0.536
2010	66.7	10.8	5.4	4,182	0.579
2015	68.6	12	6.2	5,391	0.624
2016	68.9	11.9	6.4	5,722	0.63
2017	69.2	12.3	6.5	6,119	0.64
2018	69.4	12.2	6.5	6,427	0.642
2019	69.7	12.2	6.5	6,681	0.645

Source: Human Development Report 2020

Trends of Public expenditure on Education and Health:

The expenditure on social services (education, health, and other social sectors) by Centre and States combined from 7.68 lakh crore to 15.31 lakh crore during the period of 2014-15 to 2019-20 and as a proportion of GDP, it has increased from 6.2 to 8.8 percent during the same period. But compared to total budgetary expenditure it has increased at a declining rate. Expenditure on education during the period is almost doubled from 3.54 lakh crore to 6.13 lakh crore and of the health sector it is increased from 1.49 lakh crore to 3.12 lakh crore. The health expenditure seems to be half of the education expenditure. Even if the amount of expenditure on education and health seems increasing but as a percentage of GDP expenditure on education and health is almost constant. In the year 2014-15 expenditure on

education was 2.8 percent of the GDP. It has been constant as a percentage of GDP from 2014-15 to 2018-19.

Table: 02

Trends in Social Service Sector Expenditure by General Government (Combined Centre and States)

Items	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Expenditure on social services (in lakh crore)	7.68	9.16	10.41	11.40	12.78	15.31
Expenditure on Education and Health (in lakh crore)						
Education	3.54	3.92	4.35	4.83	5.26	6.13
Health	1.49	1.75	2.13	2.43	2.66	3.12
As a Percentage of GDP						
Education	2.8	2.8	2.8	2.8	2.8	3.0
Health	1.2	1.3	1.4	1.4	1.4	1.5
As a percentage of social services						
Education	46.1	42.8	41.8	42.4	41.2	40.0
Health	19.4	19.1	20.5	21.4	20.8	20.4

Source: *Economic Survey 2020-21 Volume 2*

- Social services include education, sports, art, and culture; medical and public health, family welfare; water supply and sanitation; housing; urban development; the welfare of SCs, STs, and OBCs, labor, and labor welfare; social security and welfare, nutrition, relief on account of natural calamities, etc.
- Expenditure on 'Education' pertains to expenditure on 'Education, Sports, Arts and Culture'.

- Expenditure on 'Health' includes expenditure on 'Medical and Public Health', 'Family Welfare' and 'Water Supply and Sanitation.
- The ratios to GDP at current market prices are based on the 2011-12 base.
- Data up to 2016-17 pertains to all states. From 2017-18 onwards, it pertains to all states and UTs

There is little improvement in health expenditure compared to GDP. In 2014-15 health expenditure as a percentage to GDP was 1.2, it increased up to 1.4 percent in 2016-17 since 2016 -17 to 2018-19 it was constant. The same was little improved in 2019-10 it increased by 1.5 percent of GDP. Even though there is a small improvement in public expenditure on health in terms of GDP but it is unsatisfactory. It should be at least 3 percent of GDP.

Correlation Analysis:

Correlation analysis between the variables is computed using Pearson's correlation analysis. The result is shown in Table.03. The results reveal that both the variables are statistically correlated to each other at a significance level of 0.01, thereby, indicating that both the variables are positively related to each other. Because p-value 0 .000 is less than 0.01.The correlation coefficient shows the direction and the strength of the association between variables. Pearson correlation value 0.990 is between 0.01 and 0.5. Hence there is a significantly strong correlation between Public expenditure on social infrastructure and human development.

Table: 03

Correlation table

		Education index and life expectancy at birth	Budgetary expenditure on health and education
Education index and life expectancy at birth	Pearson correlation	1	990**
	Sig. (2-tailed)		.000
	N	6	6
Budgetary expenditure on health and education	Pearson correlation	.990**	1
	Sig. (2-tailed)	.000	
	N	6	6

**. Correlation is significant at the 0.01 level (2-tailed).

Conclusion:

The main focus of this paper is to analyze the current status of social infrastructure particularly health and education. Social infrastructure is inadequate compared to the high population of India. Availability of health facilities is inadequate in India as per WHO norms. After studying education statistics it is found that the girls are more vulnerable. Dropout of girl students in India is very high. Public expenditure on social services like health and education is not as per required norms. Inadequate public expenditure ultimately affects the human development of the country.

Notes:

- Education Index: Education index is an average of the mean year of schooling (of adults) and expected years of schooling (of children) both expressed as an index obtained by the scaling with corresponding maxima
- Life expectancy at birth: Number of years a newborn infant could expect to live if the prevailing pattern of the age-specific mortality rates at the time of birth stays the same throughout life.
- Gross enrollment ratio (GER): is total student enrollment in a given level of education, regardless of age expressed as a percentage of the corresponding eligible official age group population in a given school year.

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