

Public Expenditure on Education and Its Impact on Human Development Index in India and Brazil

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Abstract—Human Development Index (HDI) is a statistical tool used to measure a country's overall achievement in its social and economic dimensions. The Human Development Index (HDI) can be defined as a composite statistic of life expectancy, education and per capita income indicators, which are used to rank countries into four tiers of human development. India and Brazil are both fast growing developing economies and are performing quite good in economic development. At the same time, both the countries are quite proactive in investing in health, education and other social services to improve the level of human development of their people and are often praised by global community for their social protection schemes. Both these nations are investing a good deal of their GDP in education and due to this investment, education is made free and compulsory for school students for a specific period. The study tries to find the impact of public expenditure on education and its impact on the human development level in these countries by the method of document analysis of the Human Development Reports from 1990 to 2024. The paper is delimited in its scope as it only considers central government expenditure on education and does not include the state or local governments spending on education in both the countries.

Index Terms—Education, health, human development, public expenditure, social protection schemes

I. INTRODUCTION

Human development means expanding the people's choices that results in long and healthy life, ample education opportunities, having access to resources for a decent standard of living and many such choices. And so human development has many facets, and the combination of these facets is the best measure of human development level of any nation. The Human Development Index (HDI) is a composite

statistic of life expectancy, education, and per capita income indicators, which are used to rank countries into four tiers of human development (UNDP, 1990). The Human Development Index (HDI) is a statistical tool used to measure a country's overall achievement in its social and economic dimensions. The social and economic dimensions of a country are based on the health of people, their level of education attainment and their standard of living. The Human Development Index is used to rank countries into four tiers of human development. The HDI was developed by Pakistani economist Mahbub ul Haq in 1990 and was published by the United Nations Development Programme. HDI was expanded by inputs given by Amartya Sen (Stanton, 2007).

Calculation of the index combines four major indicators: life expectancy for health, expected years of schooling, mean of years of schooling for education and Gross National Income per capita for standard of living. The origins of the HDI are found in the annual Development Reports of the United Nations Development Programme (UNDP). These were devised and launched by Pakistani economist Mahbub ul Haq in 1990 and had the purpose to shift the focus of development economics from national income accounting to people-centred policies. The maximum value for HDI is One and Countries fall into four broad human development categories depending upon their HDI value:

- a. Very High Human Development (0.800 or greater for very high human development.)
- b. High Human Development (0.700–0.799 for high human development)
- c. Medium Human Development (0.550–0.699 for medium human development)
- d. Low Human Development (less than 0.550 for low human development)

Since the HDI is bounded to a maximum of one, it might be subject to declining marginal improvement; because the income component (a flow) is often more volatile than the health and education components (stocks), short-term changes might be driven mainly by income (particularly during an economic crisis). The differences in HDI are not statistically significant at the fourth decimal place. For this reason, countries with the same HDI value at three decimal places are listed with tied ranks. Various studies confirm that the countries, which have managed and distributed economic growth for the benefit of the people, performs better in HDI as compared to countries, which have high economic growth but failed to translate their income to human progress (UNDP, 1990).

Since 1990, the world has made remarkable progress in the human development and the number of people living in low development has fallen from 3 billion in 1990 to slightly more than 1 billion in 2014. The living conditions of people have improved, life expectancy at birth in the developing nations has been expanded, more people have access to clean water and sanitation and more children are going to schools in this globalized era. In additions to these facets of human development, the major change in terms of political development observed during the recent decades is the increase in the number of people living under democratic regimes. However, these global trends are quite uneven between different countries and regions for example it has been reported that between 2014 to 2016, less than 5 percent of people in Latin America were malnourished as compared to 16 percent in South Asia and 23 percent in Sub-Saharan Africa. Most of the out-of-school children are living in either in South Asia or Sub-Saharan Africa. The Human Development Index (HDI) value of South Asia and Sub-Saharan Africa in 2014 was less than world average and less than the HDI value of developing countries. On the other hand, HDI value of Latin America was higher than the world average. From these values, it can be concluded that the basic deprivations in the world are heavily concentrated in these two regions (Dreze and Sen, 2005; UNDP, 2015).

Some of the categories of the society, such as females, ethnic minorities, disabled persons etc., are more deprived as compared to others. The females in

South Asia are discriminated at each stage of their life and the female HDI of South Asia was 20 percent lower than male HDI. The greatest inequalities are present in education and deprivation of education in disadvantaged sections prevent them for becoming more capable. And this inequality in education is the main reason for low human development in this region. The concept of human development is not only limited to health, education and income but it encompasses active engagement of people in development, sustainability, equity and democracy. Inequality in education leads to inequality in income and this in turn can influence the inequalities in other dimensions such as well-being and vice-versa (UNDP, 2016). So, the investment in education sector by the governments can drastically improve the human development level of any country and bring a huge change in the lives of many disadvantaged sections of the society.

II. PUBLIC EXPENDITURE ON EDUCATION IN INDIA AND BRAZIL AS PERCENTAGE OF GDP OVER THE PERIOD 1990-2025

The Education indicator of HDI is geometric mean of Mean year of schooling and Expected year of schooling and both these indicators critically influenced the value of HDI of any country. The performance of any nation in education indicator can drastically improve with proper education policy implementation and sound public expenditure on education by the governments. The effectiveness of education policy implementation depends on the financial resources allocation. The countries, which devote ample public resources on education, have less or no privatization in education and better quality of education in government institutions. Cuba is one such country which performs better in HDI as compared to many nations which have high economic growth. Sri Lanka, Costa Rica, Chile, Jamaica, Tanzania and Thailand are often praised for their contribution in human development despite low-income levels (UNDP, 1990).

India and Brazil are both fast growing developing economies and are performing quite good in economic development. Both the countries are quite proactive in investing in health, education and other social services to improve the level of human development of their people. Brazil has often been

praised for its social protection schemes by the global community. Both the countries are also applauded for their affirmative action plans and their positive effect on reducing the caste-based inequalities in education in India and increasing educational participation of Afro-Brazilian in Brazil (UNDP, 2016). Despite the efforts of India and Brazil, both these countries have high levels of social and economic disparities. Brazil has high economic growth and substantial public expenditure on the social sectors, but it failed to translate these into human development due to the lack of well-structured planning and uneven distribution its economic resources (UNDP, 1990). Economy of India is growing rapidly but this robust economic growth in India has failed to improve the human development levels in the country. However, with continuous investment in public sector, India has succeeded in reducing the education disparities between advantaged and disadvantaged sections of the society. The educational attainment level of Scheduled Caste, Scheduled Tribe and other backward classes has increased in past two decades (UNDP, 2019).

Both these nations are investing a good deal of their GDP in education and their investment is in accordance with the international standards for the public expenditure on education. Besides this, education is made free and compulsory for elementary level in India, but on the other hand education is free and compulsory for the children ages between 7 to 17 years. Brazil is investing more percentage of GDP in education.

Table 1
Public Expenditure on Education in India and Brazil as percentage of GDP over the period 1990-2025

Years → Country ↓	1995	1997	2000	2005	2010	2015	2020	2021
India	...	3.36	4.41	3.18	3.37	4.11	4.04	4.63
Brazil	4.58	...	3.94	4.47	5.64	6.24	5.77	5.49

Source: World Bank
(<https://data.worldbank.org/indicator/SE.XPD.TOTL.GB.ZS>)

Public Expenditure on Elementary Education has been analyzed with the help of total public expenditure on education as a percentage of Gross

Domestic Product (GDP). The government expenditure on education as a percentage of GDP in India was 4.41 percent in 2000, it decreased to 3.18 percent in 2005 and it again increased by a small margin to 3.37 percent in 2010. It continued to follow an upward trend till 2015, but then decreased to 4.04 in 2020. As per the latest data available on the World Bank, India spent 4.63 percent of GDP on education. Brazil spent 4.58 per cent of GDP on education in 1995 and the value decreased in 2000 and then followed an upward trend from 4.48 in 2000 to 6.24 in 2015. However, it followed a downward trend and in 2020, Brazil only spends 5.77 percent of GDP on education in 2020 and it went downwards to 5.49 in 2021. From this data, it can be concluded that Brazil is spending more on education as compared to India. The latest World Bank data is only available for 2021 for Brazil and 2022 for India. However, from the national government sources, it has been found that India allocated 4.6 percent of GDP on education. The international benchmarks set by the agenda 'Education 2030 Framework for Action'; it has been recommended that countries should allocate 4-6 percent of GDP towards education (Gohain, 2024). As per these guidelines, both India and Brazil both allocate enough GDP on education. It has been found that after Covid-19, the world's public expenditure on education has witnessed a decline but India and Brazil have remained consistent with their education expenditure.

III. HUMAN DEVELOPMENT INDEX OF INDIA AND BRAZIL FROM 1990 ONWARDS TILL NOW

India falls under Medium Human Development category whereas Brazil falls under High Human Development category. The performance of India has remained poor as compared to Brazil as HDI value of India has been reported to be low from 1990 to 2022. No doubt, there was huge difference between India and Brazil' HDI value in 1990 and Brazil's value was more than double from India's HDI value. But if we consider the robust economic growth of India, then improvements in HDI value of India seems quite negligible.

Table 2
Human Development Index Value and Rank of India and Brazil

Year s → Country ↓	1990	2000	2010	2017	2022
India	0.308/ 123	0.577/ 124	0.519/ 119	0.640/ 130	0.644/ 134
Brazil	0.665/ 75	0.741/ 89	0.658/ 91	0.759/ 79	0.760/ 89

Source: Human Development Reports of various years.

As the education indicator played a significant role in the HDI of any country, so the latest data on education indicator have been studied to get an insight into the performance of selected developing countries. From the data, it has been observed that the mean year of schooling and expected years of schooling in India were significantly less as compared to Brazil. However, both these countries followed an upward trend in Expected and Mean Years of Schooling from the year 2017 to 2022, but both these indicators had remained low for India. From this analysis, it can be concluded that India performed poorly in HDI as compared to Brazil. At the same time, India also performed poorly in quality of education as compared to Brazil. No doubt that India has increased access to education, but it must reduce the gaps in learning between children from rich and poor families (UNDP, 2019).

Table 3
Education Indicators in India and Brazil

Country	Expected Years of Schooling		Mean Years of Schooling	
	2017	2022	2017	2022
India	12.3	12.6	6.4	6.6
Brazil	15.4	15.6	7.8	8.3

Source: Human Development Report of 2018 & 2024.

In the selected countries, various forms of inequalities are prevalent. Besides education, health services in India have extreme geographic differences for example all births in Kerala were attended by health personnel as compared to only 27 percent in

Uttar Pradesh (UNDP, 2016). India suffered major loss in its HDI level due to inequalities in health and education. On the other hand, when the inequalities in most of the developing countries are increasing, Brazil emerged as a star performer in reducing the past inequalities in health, education and income with the help of various social protections schemes (UNDP, 2010). The affirmative action plan of Brazil has been considered effective in reducing race-based inequalities and at the same the affirmative action plan of India also helped to reduce the caste-based inequalities in the education access. The protection of right to education in the constitution of India ensure that schools should be provided within the reasonable distance to all children (UNDP, 2016). Brazil also made school education free and compulsory and due to this, past inequalities in the access of education has been decreased. The ‘Zero Hunger’ strategy of Brazil is quite instructive for other developing countries as it improves food security, social protection and school attendance. In both the selected countries, school meals are provided to children and such programs have strong and multiple effects on the human development of these countries (ibid.).

IV. IMPACT OF PUBLIC EXPENDITURE ON HUMAN DEVELOPMENT INDEX OF INDIA AND BRAZIL

Education is most critical factor for the overall growth and development of any nation. So, many developing countries are spending a lot on education of their citizens and have made rules and regulations for free and compulsory education for a specific period. Education has both direct and indirect benefits for the individuals and it acts as catalyst to enhance human capabilities. So, the governments need to ensure that all have access to quality and equitable education. Declining public expenditure on education in developing countries, such as India, is seriously damaging the government educational institutions and simultaneously increasing the private participation in education sector. This trend is resulting in compartmentalization of the school system in India which means high quality of education is available for those who can afford it and low quality of education for those who are poor. It is estimated that in some of urban areas, 80 percent of students are enrolled in private schools (Dreze & Sen,

2005). Further, it has been noted that 36 percent of school students, from both urban and rural areas, in session 2023-24 were enrolled in private schools in India. And it is expected that by 2030, approximately 50 percent of school students will attend private school in India. The enrollments in private schools are following an upward trend from 1990 onwards. As per the data from the Government of India, at present 46 percent of students are enrolled in private schools and 70 percent of higher education students are studying in private institutions. These figures showed that the privatization of education in India is increasing day by day due to inadequacy of public expenditure on education (Motkuri & Revathi, 2024).

On the other hand, Brazil has only 18 percent of students enrolled in private school which is exactly half than India'. From the above analysis, it can be found that Brazil is spending more on education and so its HDI and both education indicators are higher as compared to India. Brazil is being praised by global community for its comprehensive social protection schemes and these schemes have been adopted by many other countries due to their impressive success in improving health and education in Brazil. India is spending less on education and that's way the public education system of the country is declining. Besides low spending on education, the government expenditure on education in India is not properly targeted towards the most critical level of education. At present, India needs to direct its public spending on achieving the goal of universal education access and attainment of Sustainable Development Goal 4. Public spending should be directed to all levels of school education starting from the pre-primary level to secondary level of education (Singh, 2019).

It has been found from the analysis that the value of HDI increases with increase in the public expenditure on education and on health. But as this paper is only focused on education, it has been observed that Brazil was spending more on education in 2015 and at that time, it has high HDI value in 2017 but after that, the public expenditure on education in Brazil got decreased and so its HDI value also followed a downward trend. An increase in public expenditure on education means that it will improve the gross enrollment ratio, literacy rates, quality of education, basic facilities in the schools etc. These

improvements will eventually lead to improvement in mean and expected years of schools and an improved education indicator would result in high HDI value. Brazil has introduced participatory budgeting in 1989- a process in which citizens got involved in the preparation of municipal budgets. This approach has proved quite effective in Brazil by doubling the enrolment rates of primary school students. Due to its success in various municipalities of Brazil, this participatory budgeting has been replicated in other 40 countries (UNDP, 2002).

Public spending on education also benefits the health of individuals. It has been found that the education level of mother, as compared to household income, played a more important role in the survival of newborn baby. So, education has direct and indirect impact on the mortality and health of individuals. The children of educated parents find more opportunities as compared to uneducated ones. According to the analysis, drawn from various human development reports, it is found that investment in education yields multidimensional benefits (UNDP, 1990; UNDP, 2016). It is observed that investment in female education has multiple benefits such as reduced fertility, decreased population, improved family nutrition and reduced drop-out rates. An educated person will be able to find good job and thus by earning more as compared to less educated person, he/she will contribute more towards the growth and development of the country. Education has negative impact on the poverty of families and individuals and so it can transform the lives of individuals by improving their financial condition and thus resulting in better health and longevity.

V. CONCLUDING REMARKS

Human Development Index (HDI) is considered as an impressive indicator of any country's growth and development. The governments of all nations need to focus more on social spending on education. From the analysis, it is found that public spending especially on primary and secondary education yields high level and multidimensional benefits. However, the governments are spending more on military rather than education and health. Some of the developing countries are spending two or three times more on military spending than health and education.

Governments need to improve the efficiency of public spending by devoting more resources to health and education as both these sectors can result long term and sustainable benefits to the overall growth and development of the country as well as individuals. The public spending of governments needs to be directed towards all levels of education but keeping in mind the present situation of both these countries, school education should be given more priority due to its multidimensional benefits. The sustainable growth and development of any nation is dependent upon the human capabilities of its citizens and so the global community as well as national governments of India and Brazil should make considerable investment in education as well as in health.

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