

# Human Development and Economic Growth Nexus: A Comparative Study between Bangladesh and Pakistan

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## Abstract

Human development and economic growth are believed to be linked in several ways. This paper aims at examining the plausible nexus among human development and economic growth in a comparative setup between Bangladesh and Pakistan. The study was based on systematic study of available records, mainly data from the World Bank and examined the linkages among per capita GDP, total spending on health and public spending on education within an econometric framework, where descriptive statistics and least square technique were used to accomplish the study. Bangladesh in spite of its narrow resource base as compared to Pakistan has been spending fairly a larger share of its GDP on health to attain better health of its population as compared to that of Pakistan, while both the countries' public spending on education has been more or less stable but less than 3 percent of their GDP, where Pakistan has been spending slightly a larger share on education than Bangladesh. Although both the countries are lacking in skilled, flexible and healthy human capital, Pakistan has been lacking far behind in investing in human capital that have produced mixed impacts on economic growth of two countries. Bangladesh achieved a dramatic improvement in reducing its women fertility rate and improving life expectancy at birth, while Pakistan's achievement was not up to the mark. Therefore, to build a knowledge driven society, it requires the citizens to be transformed into educated, skilled and competent human capital through higher education and better health. This requires greater investment in human development that will require substantial budgetary intervention and improved quality of governance.

**Keywords:** Human Development, Expenditure On health, Public Education Spending, Knowledge Driven Economy and Economic Growth.

## Introduction

Human development is a human capital formation process and refers to acquiring and increasing the number of persons who have skills, education, and experience that are crucial for economic growth and development of a country. Human development and economic growth are linked in several ways. Human development through better education and health care facilities offer developing countries an invaluable opportunity to prepare a well-trained workforce which can generate growth in a knowledge-driven economy that enable them to promote skilled, flexible human capital needed to meet national needs

and also to compete in global markets. Besides, when an economy grows in terms of GDP, it enjoys more ability to invest in human capital in terms of better education and better health services. Thus there exists a nexus between growth and human development.

Human factor enters into the production function in at least two forms, namely labor and organization. Healthy, educated and skilled labors and innovative organizers are the preconditions for any economy to grow. This puts strategic importance on human development for an economy to grow and develop. Human development necessitates better education and health care facilities. Education, especially at the higher level, contributes directly to economic growth by making labors more productive, and indirectly by leading creation of knowledge, ideas, and innovations. Therefore, human development is believed to be a basic requirement to economic growth and regarded as the only instrument through which society can be transformed.

Education is a vital factor of human development and economic growth as it enhances an individual's future income potential. Not surprisingly large-scale investments have been made to improve educational indicators in developing countries including Bangladesh and Pakistan. An equally important dimension of human capital is health; poor health in childhood may translate into poor adult health, lower productivity and hence lower wages. Moreover, poor health during childhood can impede cognitive development, educational attainment which in turn translates into lower returns to future education. Thus, both education and health are very important as ends in themselves and also as the determinants of peoples' capability and economic growth.

It has long been recognized that education is strongly related to a broad range of demographic behaviors. The spread of education among population has been shown to be of central importance for the long-term demographic transition from high to low levels of fertility. Caldwell (1980) has maintained that high levels of fertility would nowhere persist for long once a society had achieved mass education, that is to say, once a large majority of children were sent to school. More recent trends have generally borne this out (Lloyd, Kaufman and Hewett, 2000).

Thus, education is the key to human capital formation which enhances the knowledge, skill, competences and personality attributes of the labor force of the economy so as to enable them to produce economic values. Studies show that education greatly raises a person's income, even after netting out direct and indirect costs of schooling, and even after adjusting for the fact that people with more education tend to have higher IQs. This is evident covering many years from more than a hundred countries with

different cultures and economic systems. The earnings of more-educated people are almost always well above average, and even the gains are generally larger in less-developed countries (Becker 1975). Education directly alters the productivity of its labor forces, and hence it has a direct effect on the growth potentials of a country as labor is a major factor of production. Thus, a country can never prosper socially, intellectually and economically without proper education and training of its population.

Moreover, the provision of education and health are constitutional obligations of the state both in Bangladesh and Pakistan. Since women constitute almost fifty percent of the total populations in two countries, sub-optimal human capital investments in females will translate into a lower growth trajectory in the future. In addition to enhancing labor productivity, investments in women also influence future human capital and demographic outcomes, because of positive spillover effects on fertility and inter-generational education and health dynamics. In this paper the author examines this dimension of human development.

Until 1971, Bangladesh was East Pakistan, a part of the later. Just after being liberated from Pakistan in 1972, Bangladesh faced a war devastated fragile economy with massive poverty and widespread illiteracy; it accounted for a per capita of only 86 US\$, while that of Pakistan was 144 US\$ respectively. This study highlights how these two countries with their meager per capita GDPs having same origin have addressed the constitutional obligation of human development and how those human development efforts are linked with economic growth. The paper is organized as follows: section two presents objectives of the study, section three presents methodology, section four deals with results and discussion, and section five includes conclusion and policy implications.

### Objective of the Study

Meaningful, clear-cut and achievable objectives are the key to success in all kinds of research. This study envisages how far the governments of Bangladesh and Pakistan are oriented towards meeting the constitutional obligation to provide health and education, and what consequences they are producing towards their economic growth. In view of the aforesaid discussion, the following specific objectives were formulated:

- To portray the comparative expenditure pattern of the two governments on health and education,
- To uncover the effectiveness of expenditures on human capital formation, and to determine the impact such spending on the human development and economic indicators of two countries,

- To suggest appropriate policy options addressing human development and economic growth.

### Data and Methodology

The study is based on secondary data and relies upon the systematic study of available records. Major data are compiled from the World Bank databank: World Development Indicators for inter country comparison and analysis purpose. Data covered a period of 20 years ranging 1998-2017, but data on health expenditure was available only for the period of 2000-2017. Besides education data had some missing values as well. Thus, the quality of data does not qualify the properties of time series analysis that restricts the author to apply OLS technique in estimating the model equation.

### Model specification

We specify the growth model as a nexus among economic growth represented by GDP per capita, and human development represented by expenditure on health and expenditure on education.

$$pgdp=f(\text{thex}, \text{peex}) \dots \dots (1)$$

$$pgdp = \alpha + \beta_1 \text{thex} + \beta_2 \text{peex} + u \dots \dots (1.1)$$

Where pgdp = per capita gross domestic product recorded as 2005 constant prices in terms of US\$, thex = total health expenditure as a percentage of GDP, and peex = public education expenditure as a percentage of GDP. It is imperative that total expenditure data on education would have been proposed in this model, as the case of total expenditure data on health, but unfortunately only public expenditure data on education was available. The model equation has been estimated using STATA 11.

### Result and Discussion

A nation's population is development if it is healthy,

educated and skilled. Human development is done by human capital formation through better health, and education facilities that intern depend on spending on health and education. Therefore, the governments are to be committed to provide access to education and health to all, and with this end they are allocating public budget in these social sectors. The following Table 1 captures data on the GDP per capita, expenditures on health and education in two countries. As documented, per capita GDP has been historically much higher in Pakistan than that of Bangladesh.

Bangladesh has been spending fairly a larger share of GDP on health to attain better health of its population as compared to that of Pakistan. Thus the total expenditure on health and public health expenditure has been stable and the share of later has also been handsome in total expenditure during the period under study. However, the spending on health in Pakistan has been less stable throughout the study period, and especially declining in recent years. In addition, the public health expenditure as percentage of GDP has historically been very small in Pakistan as compared to that of Bangladesh (Table 1).

It is also documented that in both the countries public spending on education has been less than 3 percent of their GDP, and more or less stable. Bangladesh government increased its spending from 1.6 percent in early nineties to 2.34 percent in late nineties and then has been oscillating around it. During the same period Pakistan government expenditure on education was 2.55 percent of GDP and then it had been oscillating around it until 2003-05, and then kept on increasing until 2008, afterward it started declining. Thus Pakistan has been spending slightly a larger share of GDP on education than Bangladesh. However, there are several striking facts to be uncovered here as depicted in Table 2

**Table 1: GDP Per Capita, Expenditure on Health, and Education**

Country	Indicator (% of GDP)	1998-2002	2003-07	2008-11	2012	2013	2014	2015	2016	2017	1998-2017
Bangladesh	GDP per capita (2005 constant prices)	286	327	388	444	467	491	514	539	569	447
Pakistan		560	587	635	723	750	748	761	774	783	702
Bangladesh	Total health expenditure	3.53	2.91	3.09	3.4	3.46	3.54	3.71	3.69	3.72	3.24 <sup>g</sup>
Pakistan		3.27 <sup>a</sup>	3.42	2.87	2.76	3.01	3.33	2.88	2.79	2.51	3.06 <sup>g</sup>
Bangladesh	Public health expenditure	1.28 <sup>a</sup>	1.15	1.18	1.24	1.19	1.26	1.36	1.35	1.36	1.22 <sup>g</sup>
Pakistan		0.85 <sup>a</sup>	0.78	0.73	0.86	0.82	0.87	0.76	0.79	0.68	0.77 <sup>g</sup>
Bangladesh	Public spending on education	1.6 <sup>b</sup>	2.34 <sup>c</sup>	2.35 <sup>d</sup>	2.46	2.56	2.39	2.23	-	-	2.15
Pakistan		2.55	2.57 <sup>e</sup>	2.05 <sup>f</sup>	2.63	2.84	2.93	2.69	2.37	-	2.47

Source: World Development Indicators, 2017 and author's calculations.

As the governments of these two countries have been investing in human capital formation as discussed above,

these investments are likely to be translated into various human development indices. In fact spending on health and

education has positive impacts on demographic features especially on reproductive health, and life expectancy at birth. The spread of health care facilities among population are likely to cause a long-term demographic transition from high to low levels of fertility. But the impacts of investments in human capital are quite different in two countries. Data in Table 2 depicts these facts.

As Bangladesh has been spending increasing share of GDP on health care, it achieved a dramatic improvement in reducing its women fertility rate from 4.06 in 1998 to 2.2 in 2017. During the same period Pakistan also reduced its fertility rate to a significant extent, but not to the extent as Bangladesh reduced, because Pakistan has been spending a

smaller share, especially public spending on health has been really very small. Consequently, the fertility rate in Pakistan still remained much higher than that of Bangladesh. Undoubtedly high fertility is seen as an impediment to economic development, and it should be addressed.

Similarly, life expectancy at birth in Bangladesh significantly increased from 61 years in 1998 to 69 years in 2017. While during the same period the improvement in life expectancy was 62 years to 65 years only. Thus, the health indicators have been poorer in Pakistan than that of Bangladesh.

**Table 2: Human Development Indicators and Gross Enrolment Ratio**

Country	Indicator	1998-2002	2003-07	20089-11	2012	2013	2014	2015	2016	2017
Bangladesh	Fertility rate	4.06	3.35	2.8	2.51	2.43	2.36	2.3	2.24	2.2
Pakistan		5.66	4.85	4.01	3.71	3.65	3.58	3.5	3.42	3.34
Bangladesh	Life expectancy at birth (years)	61	64	66	67	68	68	68	69	69
Pakistan		62	63	64	64	65	65	65	65	65
Bangladesh	Adult literacy rate	35.32 <sup>g</sup>	-	47.49 <sup>h</sup>	-	-	55	-	56.78	-
Pakistan		-	42.7 <sup>i</sup>	49.87 <sup>j</sup>	54.15	-	55.53	54.89	-	-
Bangladesh	Secondary gross enrollment ratio	-	46.24 <sup>k</sup>	48.62	46.39	47.28	45.41	49.28	51.08	51.9
Pakistan		25.36 <sup>l</sup>	-	29.33 <sup>m</sup>	30.76	33.09	33.51	33.58	34.12	34.98
Bangladesh	Tertiary gross enrollment ratio	-	5.54 <sup>n</sup>	6.17	7.12	7.7	8.67	10.59	-	13.58
Pakistan		2.06 <sup>o</sup>	-	3.27 <sup>p</sup>	4.76	5.37	5.36	6.64	-	8.32

Note: g. in 1991, h. in 2001, i. in 1998, j. in 2005, k. 1998-2000, l. 1991-92, m. 2003-05, n. 1999-2000, o. 1992, p. 2002-05.

Source: World Development Indicators, 2013 and author's calculations.

Although public spending as percentage of GDP on education in both the countries have been much lower, where Pakistan's spending has been slightly more than that of Bangladesh, but its education outcome especially the adult literacy rate is comparatively lower. Similarly, the gross enrollment ratios at secondary and especially at tertiary levels have been remarkably lower in Pakistan than that of Bangladesh. It is noteworthy to mention that secondary education completes the provision of basic education and aims at laying the foundations for lifelong learning and human development, while tertiary education emphasizes on more specialized and skill-oriented learning and lays foundation for the knowledge-driven economy. Data presented in Table 2, testifies that although both the countries are enormously lacking in promoting skilled, flexible human capital to form knowledge-driven economy, Pakistan has been seriously lacking in this effort as compared to Bangladesh.

In an era of globalization in 2017 in Pakistan's 8.32 percent gross tertiary enrollment ratio indicates that 93.36 percent of population of school going age group did not go for tertiary education. Similarly, secondary gross enrollment ratio of 34.98 percent in the same period reflects that still 65.02 percent of secondary school going age people did not

attend school. With this alarming statistics a knowledge driven economy cannot be realized. During the same period, Bangladesh encountered a comparatively better position as the tertiary and secondary gross enrollment ratios were 13.58 and 51.9 percent respectively, but it has to go miles ahead to reach a knowledge driven economy.

Besides, the spread of education among people is also of central importance for demographic transition from high to low levels of fertility. It is found that high levels of fertility cannot persist for long, once a society had achieved mass education (Caldwell 1980). Thus, educating girls will raise their status in the society and eventually enhance their asset and income base, and empower them to a significant level. Besides, today's girls will be tomorrow's mothers, and when they will be self-reliant, they can envision their children's future in a different way.

### Summary of Regression Analysis

Equation 1 was estimated using STATA 11, and the result is summarized in the following Table 3. The coefficients of explanatory variables gives the rate of change in the conditional probability of the per capita GDP occurring for a given unit change in the value of the explanatory variable.

**Table 3: Regression Summary for Bangladesh**

Variables (Explanatory)	Value of $\beta_s$	Standard error ( <i>se</i> )	<i>t</i> -value	<i>p</i> -value
Total health expenditure ratio	157.49	31.19	5.05	0.00
Public education expenditure ratio	298.79	67.66	4.42	0.00
Constant	-806.79	205.69	-3.94	0.00
R-squared = 0.75, Adj R-squared = 0.71, Number of obs. = 15, F(2, 12) = , Prob> F= 0.00				
Regression Summary for Pakistan				
Variables (Explanatory)	Value of $\beta_s$	Standard error ( <i>se</i> )	<i>t</i> -value	<i>p</i> -value
Total health expenditure ratio	-222.10	53.06	-4.19	0.00
Public education expenditure ratio	118.82	38	3.13	0.00
Constant	1074.68	136.37	7.68	0.00
R-squared = 0.59, Adj R-squared = 0.52, Number of obs. = 16, F(2, 13) = 9.2, Prob> F= 0.00				

$$pgdp = -806.79 + 157.49thex + 298.79peex \dots \dots (bd)$$

$$pgdp = 1074.68 - 222.1thex + 118.82peex \dots \dots (pak)$$

The regression summary shows that both public education spending ratio and total health expenditure ratio have had statistically significant impact on GDP per capita in both the countries. However visible differences are found in terms of affect of such spending in two countries because of differences in spending. In Bangladesh, both total health expenditure ratio and public education expenditure ratio have had positive impact on GDP per capita, while in Pakistan public education expenditure ratio have had positive impact, but total health expenditure ratio have had a negative effect. This is a matter of serious concern and needs further explanation.

Expenditure on health care is likely to have a positive effect on the GDP per capita in an ideal situation, but in case of Pakistan, data reveal a different picture. This may be because, mass people are left with a big private budget for health care at times they need it for other economic uses that might have retarded growth of GDP and thus, have had a negative impact on the later. Besides, it also seems that public expenditures on health are not translated into reality perhaps for lack of governance. For example, during 1998-2017 total health expenditure including public expenditure in Pakistan was 3.06 percent of GDP slightly less than that of Bangladesh, but this expenditure is not translated into human development indices such as life expectancy at birth and fertility ratio as captured by data in Table 1. There is a gulf of difference into these two ratios of the two countries in spite of the fact they have been spending more or less same ratios of their GDPs.

### Conclusions and Policy Recommendations

A nation's population is development if it is healthy, educated and skilled, that can be realized by allocating sizable share of its GDP per capita into better health and education facilities. Both the countries have had relatively small per capita GDP, but it has been comparatively much smaller in Bangladesh than that of Pakistan. Nonetheless, Bangladesh has been spending fairly a larger share of GDP

on health to attain better health of its population as compared to that of Pakistan, while the spending on health in Pakistan has been less stable throughout the study period, and especially declining in recent years. In addition, the public health expenditure as percentage of GDP has historically been very small in Pakistan as compared to that of Bangladesh. In both the countries public spending on education has been more or less stable but less than 3 percent of their GDP, where Pakistan has been spending slightly a larger share of GDP on education than Bangladesh.

As the governments of these two countries have been investing in human capital formation, these investments have mixed the impacts in two countries. Both public education spending ratio and total health expenditure ratio have had statistically significant impact on GDP per capita in both the countries. However, in Bangladesh, both total health expenditure ratio and public education expenditure ratio have had positive impact of GDP per capita, while in Pakistan public education expenditure ratio have had positive impact, but total health expenditure ratio have had a negative effect.

Thus, Bangladesh achieved a dramatic improvement in reducing its women fertility rate and improving life expectancy at birth, while Pakistan's achievement was not up to the mark. Although both the countries are lacking in promoting skilled, flexible and healthy human capital, Pakistan has been seriously lacking in this effort as compared to Bangladesh especially in terms of secondary and tertiary gross school enrollment ratios.

Therefore, in the era of globalization, to build a knowledge driven society, it requires the citizens to be transformed into educated, skilled and competent human capital through secondary and tertiary education so that they can fit into global society and be able to contribute fruitfully to economic development. Therefore, millions of students who are out of school must be brought into school network,



ensure greater share of national income to finance health and education. This requires greater investment in human development that will require substantial budgetary intervention and improved quality of governance.

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