

# **Sustainable Development of Low Income Countries through Investment in Tertiary Education: Indicative and Strategic**

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## ***Abstract***

*To countenance the challenges of globalization raising the superiority of our tertiary education to global standard is very significant. Tertiary education is the essential enabler of the human capital of the twenty-first century demands a set of new competencies. It draws on insights on these three issues to emphasize lessons for developing countries where policy makers have set out procedure to build a tertiary education in which higher priorities and future strategies would form the center of the for sustainable development strategy. In the case of low-income economies, where there is an concentration to invest in tertiary levels of education but the government budget is constrained, this study recommends the formation of financing sources. In addition, it is necessary to develop an effective lifelong learning system to provide continuing higher education and skill upgrading to persons after they have left higher education in order to provide the changing skills necessary to be competitive in the new global economy. This paper analysis and present importance of investment in tertiary education with low-income economies for ensure a gradual sustainable development over the years and include a new section of financing sources. It is apparent that Bangladesh will acquire potential gains from the countries followed by significant investment in tertiary education.*

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## **1. Introduction**

Previous studies on low-income economies place heavy emphasis on investment in primary education, partly due to the primary sector orientation of these economies and high rates of returns associated with the primary schooling. Gathak (1995), Gemmel (1996), Papagergiou (2003) and Psacharopoulos (1985, 1994), emphasized primary education as a necessary and adequate ingredient for economic growth and development in developing countries, especially those with low-income. This argument is based on the economic structure of these countries and the estimated high rates of return on investment in primary education. Jamison and Lau (1982); Lau, et al. (1991) and Psacharopoulos (1994), among others, argue that, based on the rate of returns, universal primary education is one of the most significant factors enhancing economic development in low-income economies. Their studies find that the rates of return on primary education are higher in poor countries, because wages earned by additional years of schooling exceed by far the initial cost of schooling.

Most low-income economies, however, are characterized by poverty, low state investment, limited numbers and quality of educational and legal institutions, inadequate financial resources and capital market imperfections. These factors combine to prevent adequate investment in human capital. Thus, the stock of skills and productive knowledge embodied in people remains low and consequently limits economic growth. Primary schooling is inadequate for the purpose of adopting the sophisticated technology that characterizes a modern economy. Secondary and tertiary educations are of greater significance for technological innovation, absorption and diffusion (Engelbrecht, 2002: 831). However, human capital theory postulates a positive relationship between the levels of education, the main way of acquiring human capital, and labor productivity. That means higher levels of education, *ceteris paribus*, contribute more to economic growth than lower levels of schooling. Human Development is a concept which considers both quantitative and qualitative aspects of sustaining life, aiming at increasing human welfare. Moving forward in a knowledge based economy, human capital becomes one of the major building blocks towards a sustainable growth path. Basic education should provide the foundation for learning, and tertiary education should develop core skills that encourage creative and critical thinking. As a consequence tertiary education is essential and tenacity of any nation key to development, advancement, progress and sustainable growth and its effective returns contribute towards development and advanced of a nation, which will get benefit from generation to generation. Education provides us positive correlation in our future generation and helps to accelerates development of a nation.

## **2. Literature Review:**

Education, Director General Koichiro Matsuura mentioned of a 'veritable revolution' in Higher education with the dynamics of accelerating demand, diversification of provider's impact of information and communication technologies, and globalization (UNESCO World Conference on Higher Education, 2009). Investment in human capital, through investment in tertiary education, is a necessary ingredient to economic growth and development; it is not sufficient (Cypher and Dietz, 1997). For a long time, the development of human capital was regarded as a requirement for the growth and development of any economy (Schultz, 1961). Economy will

take in future depends on the kind of educational investment made at present, therefore, defining a financing policy for education that promotes the country's human capital at higher levels, together with complementary policies to enhance their effective use in a way that can make the system sustainable should address this problem in the long-run. Not only is education significant for economic growth, it also holds considerable private benefits for individuals. These benefits are either directly or indirectly accrued. Economic development strategy on investment in human capital, as it sees its human resources as the most significant resource of the country.

Jan P. Voon (2000), the rate of return is the rate of interest that equates the PDV of the costs and benefits of acquiring a university degree. The general cost and benefit framework is expressed as:

$$PV = \sum_{t=1}^m \frac{B_t}{(1+r)^t} - \sum_{t=n+1}^m \frac{C_t}{(1+r)^t} = 0$$

$$\text{Or, } \sum_{t=1}^m \frac{B_t - C_t}{(1+r)^t} = 0$$

Where,  $C_t$  is opportunity costs of university degree in year  $t$ ;  $B_t$  is benefit of university degree in year  $t$ ;  $n$  is length of education;  $(m - n)$  is years in workforce or, individual earning life span assumed to terminate at the age of 65 when the same cohort of the graduates retires from the workforce;  $r$  is internal rate of return to the investment, (In this expression for the rate of return it is assumed that all costs are incurred in years 1 to  $n$ , and benefits accrue between year's  $n$  and  $m$ ). Cost includes any forgone earnings, sacrificed because the individual is in school and not works. In addition to forgone earnings, households face direct costs in spending a child to school. These costs may include school or uniform fees, payments for books and other materials, transportation costs, or other "unofficial" fees to ensure a child get the attention of a teacher. Even though the dollar value of the private benefits of an education is likely to far exceed the dollar value of the private costs, a value for can be found because future benefits are much more heavily discounted than costs incurred more immediately. Once the private rate of return to schooling is estimated, it can be compared to the internal rates of return to other household investments. Economists argue that one cannot simply add up the costs and compare them to the benefits because money received in the future is worth less than money that can be spent today. Such positive time preference is the results of both uncertainties about the future. Future benefit need to be discounted to compare them to current cost. One way of doing so is to compare the present value (PV) of all cost and benefits.

According to Psacharopoulos (1994), the elaborate method follows an algebraic definition of the rate of return which is the rate that equates a stream of benefit to a stream of costs for a given period. In this method of private rate of return calculation, the only cost of the education project under evaluation is the opportunity cost of staying on in school beyond the age of 18 instead of working in the labor market. The data requirement of this method is quite demanding and is usually not available for most developing countries. The basic earnings function is due to Mincer (1974) and involves the fitting of a semi-log ordinary square regression using the natural logarithm of earnings as the dependent variables, and then the years of schooling, potential years of labor market experience and its square as independent variables. In this semi-log earnings functions specification also used by Appleton et al (1999), the coefficient on years of schooling

can be interpreted as the average private rate of return to one additional year of education regardless of the education level to which this year of schooling refers. One of the most common approaches is to estimate the impact on earnings of schooling, age, and other demographic characteristics. Data on these variables can be obtained from either household or firm surveys and used to estimate a human capital earnings function or wage equation like the following:

$$\ln E_i = \alpha + \beta_1 S_i + \beta_2 EXP_i + \beta_3 EXP_i^2 + \varepsilon_i \quad (1)$$

Where,  $\ln E_i$  is the natural logarithm of earnings of each individual,  $\alpha$  is constant,  $S_i$  is individual's years of schooling completed,  $EXP_i$  is work experience,  $EXP_i^2$  is work experience squared.  $\alpha$ ,  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  parameters to be estimated,  $\varepsilon_i$  is an error term.

The above function can be modified to include regional dummies, sex, or different levels of educational attainment. For the purpose of this study, different levels of education attainment are used. Since we intend to calculate the private rate of returns to different levels of education, the basic earnings equation becomes:

$$\ln E_i = \alpha + \beta_1 PRIM + \beta_2 SEC + \beta_3 UNIV. + \beta_4 EXP_i + \beta_5 EXP_i^2 + \varepsilon_i \quad (2)$$

Where, PRIM, SEC, UNIV stand for primary, secondary and university levels of education respectively and  $EXP_i$  is work experience. From the above earnings function, one can calculate the rate of return of investment in education after acquiring an additional years of schooling. This is given as:  $\beta_1 = \ln dE_i / d S_i$  (3)

This is estimate of the average percent additional earnings resulting from an extra year of schooling. It is an estimate of how wages in an economy vary by education for the year in which the data are obtained. The term  $\beta_1$  is also interpreted as the average annual private rate of return to one additional year of schooling, regardless of the level of schooling already attained. Estimates of  $\beta_1$  vary widely. The way to compute the returns to an extra level of education is taking the antilog and using the formula:

$$\text{Returns} = \{EXP_i (\ln E_i - \ln E) - 1\} \quad (4)$$

This rate can be divided by the numbers of years at each level to get annual returns. The estimates from equation 2 provide consistent estimates; but there may be correlations between education and unobservable variables such as family characteristics, background. This is taken care of by adjusting the model to account for the observables or that may not necessarily have a significant effect.

This study estimated the effects of three forms of human capital on schooling, namely formal education, experience provided by employers, and its squared pursued by employees. Human capital theory suggests that higher education raises the productivity of workers by imparting useful knowledge and skills, hence raising workers' future income by increasing their lifetime earnings (Becker, 1964). Becker (1964) and Mincer (1974) provide an explanation that links investment in higher education with workers' wages. Over the past thirty years or so, hundreds of studies have been conducted to estimate rates of return to education (RORE); most such studies show that higher schooling is a crucial factor in explaining variations of salary and wages

in well developed countries (Cohn & Addison, 1998). Comparative studies have been conducted in some less developed countries, focusing on investment in higher education (Psacharopoulos, 1985, 1994). At tertiary level, the graduates acquire skills to cope with logical and analytical reasoning tasks, as well as the technical knowledge required in the current era of globalization (Colclough, 1982). Endogenous growth models emphasize the importance of investment in human capital and the potential gains from the transfer of technology from countries with a more advanced study capacity to the low-income countries, because economic theory suggests that these levels of education help a country to make the transition from a low-income to a high-income economy. The study draws significant lessons for Bangladesh from the impressive investment in human capital and the economic growth achieved by the selected model countries.

This study explores interrelated issues in development economics. An objective of this study highlights the significant role of tertiary levels of education for sustainable development of future generation of low-income economies. More specific objectives of this study are to identify- the conditions under which the expansion of education at tertiary levels would be fruitful and sustainable for low-income economies, like Bangladesh. This study following the questions investigated:

- i. Why should the importance of tertiary education for long-run growth of low-income economies?
- ii. What are the sources to investment in these tertiary levels of education for sustainable development of future generation to overcome the resource constraints in respect of financing education in low-income economies?

### **3. Data and Methodology**

This study employs secondary data from previous studies. It draws on a variety of sources including books, theses, academic journals, institutional reports and the internet. The collection of data involves an extensive survey of the literature selected in accordance with the stated study questions and objectives. Existing literature on the contribution of education on long-term economic growth and sustainable development is generally reviewed. The study focuses on those studies that deal with the relationship between tertiary levels of education and sustainable development of future generation in selected low-income countries. Investment in schooling and other factors responsible for the significant impact of education on economic growth in these economies are analyzed.

To review theoretical methods of investment in tertiary education of low-income economies and its comparative analyze possibilities assessing the effectiveness of investment in tertiary education levels. This study, based on endogenous growth theory and empirical evidence, argues that tertiary levels of education are essential in order to develop human capital capable of driving economic growth. Endogenous growth models emphasize the importance of investment in tertiary education of low-income economies and the potential gains from the transfer of human capital from low-income countries to the more advanced study capacity countries.

## 4. Returns to Schooling Analysis:

### 4.1 Gross Enrollment Rates

Higher education influences economic well-being in three ways. First, the direct expenditures by the institutions, their employees, and their students impact the local economy. This spending multiplies through the local economy until the monies are used to purchase goods and services from outside the local area. Second, higher education provides financial and non-financial benefits to the individual who pursues an advanced education and to society in general. Third, institutions of higher education are increasingly focused on knowledge creation. Thus, universities are sources of key study and development innovations that simultaneously can be beneficial to society and conducive to economic growth (OECD, 1998).

People with more years of schooling tend to earn more than people with fewer years. Useful thinking about educations and investment and higher education produces human capital. The expectation is also that these investments will yield a positive return. By attending school, an individual hopes to acquire human capital, which makes that individual more productive, and therefore, better compensated.

**Table 1:** Changes in Schooling, Gross Enrollment Rates, by region, 1970-2000

| Region                   | Primary           |       | Secondary         |                   | Tertiary          |                   |
|--------------------------|-------------------|-------|-------------------|-------------------|-------------------|-------------------|
|                          | 1970              | 2000  | 1970              | 2000              | 1970              | 2000              |
| East Asia/ Pacific       | 89.4              | 111.4 | 23.8              | 66.4              | 1.1               | 14.4              |
| Europe/Central Asia      | 99.3 <sup>a</sup> | 99.5  | 86.2 <sup>a</sup> | 85.6              | 30.9 <sup>a</sup> | 46.0              |
| Latin America/Caribbean  | 107.2             | 124.7 | 27.6              | 84.8              | 6.2               | 22.6              |
| Middle East/North Africa | 70.1              | 95.6  | 23.5              | 70.3              | 4.4               | 20.7 <sup>b</sup> |
| South Asia               | 70.6              | 94.8  | 23.0              | 48.0              | 4.2               | 10.0              |
| Sub-Saharan Africa       | 51.0              | 81.7  | 6.3               | 25.7 <sup>b</sup> | 0.8               | 3.6 <sup>b</sup>  |
| High Income              | 100.0             | 101.9 | 75.0              | 106.0             | 26.2              | 61.1              |

<sup>a</sup> Due to insufficient data for 1970, the values for Europe and Central Asia refer to 1980.

<sup>b</sup> Values refer to the late 1990s.

Source: World Bank, World Development Indicators online.

Worldwide, gross enrollment rates, Gross enrollment rates refers to the total number of children enrolled in a given school category divided by the number of children of the age group that officially corresponds to the levels of schooling and Net enrollment rates refer to enrollments of only those of the relevant age group, in any type of tertiary education amount to about one out of every four members of your age group. In the high-countries, the rate close to 60 percent; in the middle-income nations, it falls 22 percent; and in the low-income nations, it drops to 10 percent. International evidence also shows that no country could become an economically advanced country, if the enrolment ratio in higher education is less than 20 per cent. In fact, we find no country in the group of the developed countries whose enrolment ratio in higher education is less than 20 per cent, and conversely we find very few countries with an enrolment ratio of above 20 per cent among the developing countries.

The importance of higher education further increases in the era of international competition and globalisation. International experience also shows that it is only those countries that had built up

high quality human capital stocks, through good higher education systems, could reap the benefits of globalisation (e.g., East Asian economies), and countries that do not have stocks of quality human capital suffered the most from the policies of globalisation and structural adjustment (e.g., countries in sub-Saharan Africa). Given all this, it is imperative that societies pay adequate attention to higher education. This is more significant, if societies would like to transform themselves into prosperous economic tigers.

#### 4.2 Returns to investment on Schooling

Table-2 and 3 presents estimates of annual private and social internal rates of return for schooling by income categories. The results are from a meta-analysis by World Bank economists, psacharopoulos and harry patrinos. The authors compiled the results of internal rate-of-return calculations for over 75 nations. Some of these studies refer to outcomes as far back as the late 1950s, while others refer to the 1990s. At all levels of schooling, private rates of return may be higher in low-income economies than higher-income economies. This may seem surprising given the much higher wages and salaries workers earn in high income nations. But rates of return measure something different than the levels of earnings. Take the case of graduates of tertiary education.

**Table 2:** Returns to investment in education by level, full method, latest year, averages (%)

| Region                           | Private Rate of Return |           |        | “Social” Rate of Return |           |        |
|----------------------------------|------------------------|-----------|--------|-------------------------|-----------|--------|
|                                  | Primary                | Secondary | Higher | Primary                 | Secondary | Higher |
| Asia *                           | 20.0                   | 15.8      | 18.2   | 16.2                    | 11.1      | 11.0   |
| Europe/Middle East/North Africa* | 13.8                   | 13.6      | 18.8   | 15.6                    | 9.7       | 9.9    |
| Latin America/Caribbean          | 26.6                   | 17.0      | 19.5   | 17.4                    | 12.9      | 12.3   |
| OECD                             | 13.4                   | 11.3      | 11.6   | 8.5                     | 9.4       | 8.5    |
| Sub-Saharan Africa               | 37.6                   | 24.6      | 27.8   | 25.4                    | 18.4      | 11.3   |

Source: G. Psacharopoulos and H. Patrinos, “returns to Investment in Education: A Further Update”, *Education Economics* 12, no. 2 (august 2004)

\*Non-OECD.

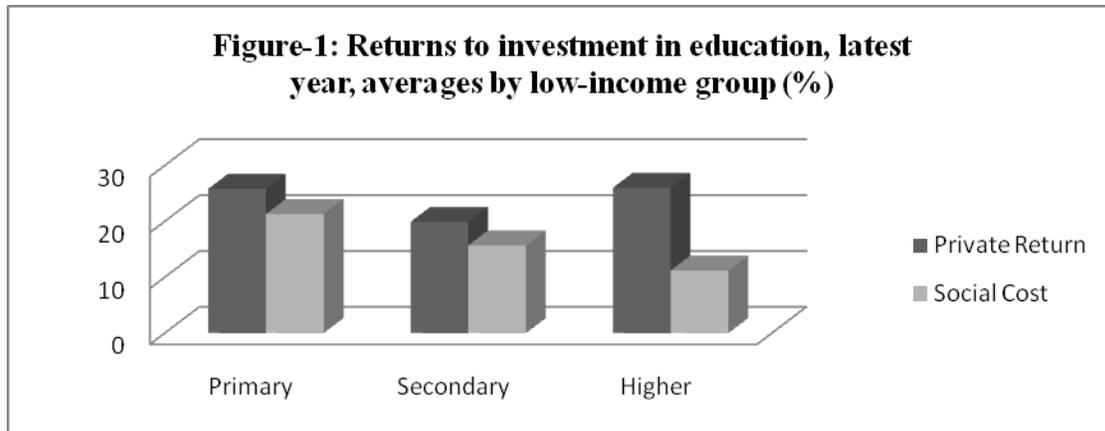
Table also finds, as expected, that the returns to schooling tend to be grater the poorer is the country. This is especially evident when comparing low-income economies to the high-income economies. This may be due to much larger pay differentials between tertiary and primary school graduates. Or it may reflect opportunities tertiary school student have to earn some income while studying (so there is less cost from foregone earnings), including receipt of government stipends for attending a school, a common practice in many developing nations.

**Table 3:** Returns to investment in education by level, latest year, averages income group (%)

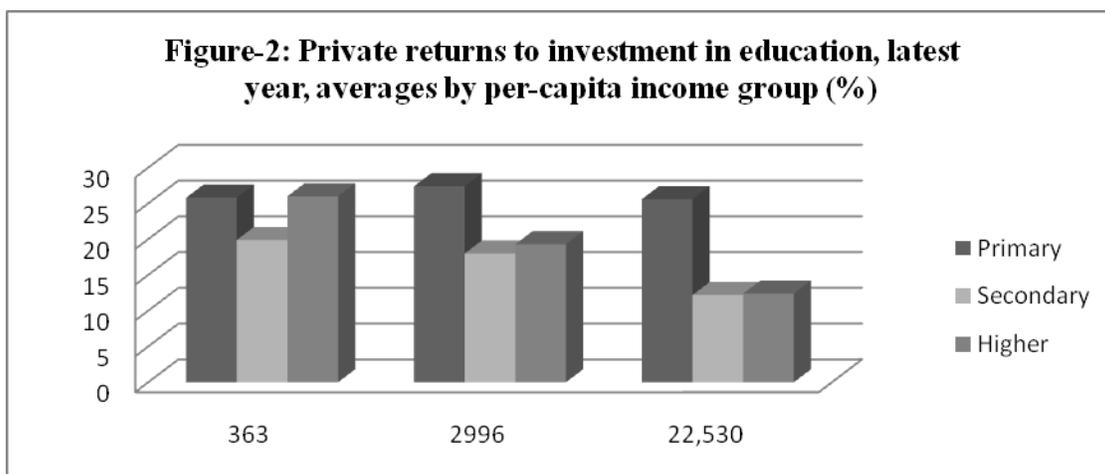
| Per-capita income group      | Mean per capita(US\$) | Private Rate of Return |           |        | “Social” Rate of Return |           |        |
|------------------------------|-----------------------|------------------------|-----------|--------|-------------------------|-----------|--------|
|                              |                       | Primary                | Secondary | Higher | Primary                 | Secondary | Higher |
| Low income (\$755 or less)   | 363                   | 25.8                   | 19.9      | 26.0   | 21.3                    | 15.7      | 11.2   |
| Middle income (to \$9265)    | 2996                  | 27.4                   | 18.0      | 19.3   | 18.8                    | 12.9      | 11.3   |
| High income (\$9266 or more) | 22,530                | 25.6                   | 12.2      | 12.4   | 13.4                    | 10.3      | 39.5   |

Source: G. Psacharopoulos and H. Patrinos, “returns to Investment in Education: A Further Update”, *Education Economics* 12, no. 2 (august 2004).

The relative gap between private and social returns is especially large for tertiary schooling in low and middle-income nations. This reflects the relatively high per pupil cost and high degree of state subsidy for tertiary education, often including free tuition. The classic pattern of falling returns to education by level of economic development and level of education are maintained (see Tables 2-3 and Figures 1-2). Also, in the updated data set the private returns to higher education are increasing. These new results are based on six new observations and updated estimates for 23 countries since the last review (Psacharopoulos, 1994). Estimates of the raw returns to education for 98 countries (see also Appendix A, Tables A1–A4).



Private returns are higher than ‘social’ returns, where the latter is defined on the basis of private benefits but total (private plus external) costs (Figure 1). The average “social” rates of return to schooling account for only social cost, not social benefits, hence our use of quotation marks around the word *social*. By incorporating the full cost of schooling but not any positive externalities, “social” returns for a given level of schooling must be less than the corresponding private return. This is because of the public subsidization of education and the fact that typical social rate of return estimates are not able to include social benefits. Nevertheless, the degree of public subsidization increases with the level of education, which has regressive income distribution implications. Overall, the average rate of return to another year of schooling is 10%.



Returns to education by level of country income are presented in Table-3 and Figure-2 (Psacharopoulos, 1994). The highest returns are recorded for low-income and middle-income countries. This update includes new country estimates and updated estimates for 42 countries. Average returns to schooling are highest in the Latin America and the Caribbean region and for the sub-Saharan Africa region (Table 4). Returns to schooling for Asia are at about the world average. The returns are lower in the high-income countries of the OECD.

### 4.3 Coefficient on Years of Schooling

Table-4 and 5 presents estimates of annual private and social internal rates of return for schooling by income categories.

**Table 4:** The coefficient on years of schooling: rate of return (based on Mincer–Becker Chiswick): regional averages

| Region                          | Mean per capita (US\$) | Years of schooling | Coefficient (%) |
|---------------------------------|------------------------|--------------------|-----------------|
| Asia*                           | 5182                   | 8.4                | 9.9             |
| Europe/Middle East/North Africa | 6299                   | 8.8                | 7.1             |
| Latin America/Caribbean         | 3125                   | 8.2                | 12.0            |
| OECD                            | 24,582                 | 9.0                | 7.5             |
| Sub-Saharan Africa              | 974                    | 7.3                | 11.7            |

Source: G. Psacharopoulos and H. Patrinos, “returns to Investment in Education: A Further Update”, *Education Economics* 12, no. 2 (august 2004).

\*Non-OECD

Above the results are from a meta-analysis by World Bank economists, psacharopoulos and harry patrinos. In the high-countries, the coefficient on years of schooling to 7.4 percent; in the middle-income nations, it increases 10.7 percent; and in the low-income nations, it rises to 10.9 percent.

**Table 5:** The coefficient on years of schooling: mean rate of return (based on Mincer–Becker Chiswick): Per-capita income group

| Per-capita income group      | Mean per capita (US\$) | Years of schooling | Coefficient (%) |
|------------------------------|------------------------|--------------------|-----------------|
| Low income (\$755 or less)   | 375                    | 7.6                | 10.9            |
| Middle income (to \$9265)    | 3025                   | 8.2                | 10.7            |
| High income (\$9266 or more) | 23,463                 | 9.4                | 7.4             |

Source: G. Psacharopoulos and H. Patrinos, “returns to Investment in Education: A Further Update”, *Education Economics* 12, no. 2 (august 2004).

Globally, the percentage of the age cohort enrolled in tertiary education has grown with the most dramatic gains in upper middle and upper income countries. In low-income countries tertiary-level participation has improved only marginally. Sub-Saharan Africa has the lowest participation rate in the world. In Latin America, enrolment is still less than half that of high income countries.

There is a general presumption that higher education is not necessary for economic growth and development. Without realizing the importance of higher education in development, many low-income countries tend to ignore higher education. Analyzing the contribution of higher education to economic well-being since the higher education has been given great social responsibilities, in

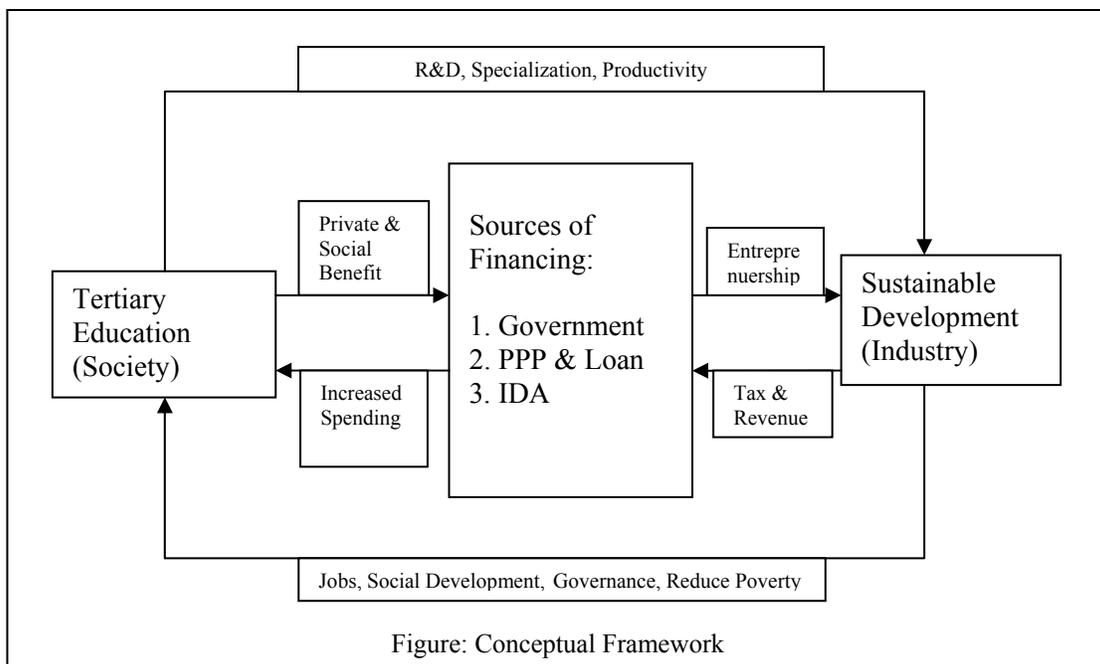
harmony with the enormous needs and expectations of the society. Higher education is one aspect which not only enhances knowledge but creates awareness in social and economic developments. This education will ultimately lay out the economic and social well being of an individual. The social return includes all costs entailed in the provision of schooling. These costs must be taken into consideration. On the benefit side, schooling benefits the individual through higher earnings but schooling may also produce a positive externality and Potential positive externalities from schooling. More schooling, especially higher education, may also lead to technological progress that is not fully captured by private returns. More schooling has benefits that considered a merit good, health clinics, tube wells for clean water, improve health and fertility externalities, and educating women reduces child mortality, fertility, maternal mortality, and spread of HIV/AIDS etc. By virtue of the respect, higher education can create awareness in social and economic developments, therefore, rely greatly on universities for fostering education's positive impacts on sustainable development.

It is significant to remember that even in the 21st century is the importance of tertiary education for long-run growth. For enrolment of students in higher education, higher priorities and future strategies for sustainable development have to be the first point of consideration. It is also necessary to improve the quality and efficiency in higher education, because they are an integral part of an ordered society. In addition, higher education is also a *public good* – at least a *quasi-public good*, benefits from which are not confined to the individuals who go to universities, but also others and the society at large are benefited considerably and they have profound positive effect on economic growth and development. Evidence can be cited from East Asia. According to The World Bank, 60% to 90% of growth achieved in Japan and other East Asian industrialized countries is the result of human capital development rather than natural resources and finance. While we must treat such findings with caution because economic factors cannot be separated from wider social and institutional factors, they underline the critical significance of tertiary education.

## **5. Financing Problem of Tertiary Education**

In poorer nations, educated workers are relatively scarce, often making schooling, especially tertiary education, an investment with a higher rate of return than in advanced economies, where educated workers are far more abundant. Given the relative scarcity of students with a tertiary education in poorer nations, the pay premium to having such an education may be greater than the relative pay gap between university and high school graduates in richer nations. It is the relative scarcity of labor skills, a combination of the strength of labor demand and the extent of labor supply, which determines the attractiveness of schooling as an investment. The emergence of higher education was prompted by several factors: (1) Demand for tertiary education increased much faster than the primary and secondary could cope with; and (2) the government's inability to mobilize financial resources needed to establish and run an adequate number of higher education institutions with required enrolment capacities. The continuous widening of the gap between the supply of and demand for higher education opened up new opportunities; private entrepreneurs, philanthropists and social leaders stepped in to fill this gap. In addition, by this time globally and nationally, there was a general shift in ideology, with a preference toward privatization and market-based provision of higher education (Devarajan et al., 2003; Pritchett, 2001; Perkins et al., 2001).

In the current era of globalization, economic growth and development will be stunted in low-income economies unless they invest adequately in higher levels of education and define economic policies that enhance the effective use of advanced skills within the economy. Although investment in tertiary education remains poor with low-income economies, more harm than good will result from expanding tertiary education, unless acceptable quality can be ensured. The 21<sup>st</sup> century focus should be on applying rigorously already established quality standards and consolidating and rationalizing existing universities, before investment is made on expansion in tertiary education. The problem of resource scarcity added further to the problem. But given the inter-dependence of one layer of education on the other, higher education becomes critically significant for developing and sustaining a good quality primary and secondary education. It is also a critical factor necessary for economic growth and development and also for its sustenance (Perkins, et al. 2006).



In the case of lower income economies, where there is a concentration to investment in tertiary levels of education but the government budget is constrained, this study recommends the creation of Public Private Partnership (PPP) and students Bank loan (low-interest) by *internal* sources. This can partly be financed through borrowing at low interest rates from the International Development Association (IDA) of the World Bank Group by *external* sources. Besides, scholarships and social support to students are becoming increasingly significant for attaining quality and efficiency in higher education.

Investment in tertiary levels of education has helped formerly low-income countries such as Taiwan and Singapore to attain vast increases in economic growth. Low-income countries, such as Bangladesh, should follow these success examples by investing in higher levels of education. This study addresses the problem by responding to study questions regarding lessons that Bangladesh can learn from the success stories of Taiwan and Singapore of how investment in

higher levels of education contributed to their economic growth. Further, it suggests an education-financing mechanism for Bangladesh that can best implement the lessons learnt. It consequently suggests a framework that can be used by many low-income economies like Bangladesh to design meaningful education policies that would sustainable growth and development of such countries. In the figure it may be argued that highlight the nature of association, between higher education and development, and not the cause and effect relationships. Nevertheless, despite some such familiar limitations, these results do show that higher education is positively related to economic growth and inversely to poverty; and it is likely that higher education is pre-condition of sustainable development and influences positively economic growth. After all, higher education is widely recognized as a significant investment in human capital, necessary for economic growth. It is higher education that may be single most significant factor that makes the difference between the developed countries and the developing countries. All those concerned with promoting economic development is to understand how to make schooling a better investment better for students and their families who devote so much of their time to education, and better for governments and donors who finance much of direct education.

The new approach of the World Bank's policy to find mechanisms that can sustain higher education by proposing charging student fees and privatization (Samoff and Carrol, 2003: 33). It is encouraging to note that in 2010 the Ministry of Education, Government of Bangladesh (GoB), with the assistance of the World Bank (IDA) has undertaken, through the University Grants Commission (UGC) of Bangladesh, a higher education quality enhancement project (HEQEP) to improve the quality of teaching, learning and study capabilities of higher education institutions of the country. Activities involving the promotion of academic innovation, the building of institutional capacity of the universities and the raising of connectivity capacity in the higher education sector are considered to be critical for universities in Bangladesh for initiating positive impacts on developments.

## **6. Conclusion**

The phenomenal growth of universities indicates the significant role they play in imparting higher education in low-income economy. These universities produce much needed highly skilled manpower. Many of their graduates are employable both locally and internationally. The number of students that go to foreign countries for undergraduate studies has decreased. This saves a huge amount of foreign exchange and earnings remittances. The graduates of these universities contribute substantially to national and international development. The demand for higher education will increase further in future. Without investment national demand for higher education cannot be met. Both government, public private partnership (PPP) and International Development Association (IDA) of the World Bank Group must coexist to supplement and complement each other. The main point drawn from this study is the importance of investment in education particularly in the tertiary level. There is much evidence on the positive impact of education on productivity and development. Tertiary education should, therefore, be stressed particularly with the present world of information technology and globalization. This is crucially critical with productivity growth being a key requirement to socio-economic development. This must also take into consideration the quality and relevance of such educational expansion to the economy and society in the low-income economies.

Conclusively, this study recommends that for education to contribute significantly to economic growth and development. It indicates what lessons Bangladesh can learn from them to improve its strategy for economic growth and development. The lessons learnt would help the government to draw policy recommendations on measures of how to raise the level of human capital accumulation. Addressing the problem of investment in higher levels of education today through the suggested sustainable mechanism, will allow further accumulation tomorrow, resulting in an increase of the economy's productivity, with the ability to adopt, adapt, or improve the technology update, and hence ensure sustainable economic growth.

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