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EDUCATION AND ECONOMIC GROWTH IN SOUTH ASIA

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ABSTRACT: *Interconnection between education and economic growth is a subject of great interest in most developing nations in the world today. This is because economic growth is one of the key indicators of the level of national development. In this study, regression analysis is applied to look into the genuine effects and the relationship between education and economic growth of the Southern Asian Countries such as Bangladesh, India, Nepal, Pakistan, Maldives, Bhutan and Sri Lanka. The methodology consists of the means of estimation and econometric analysis which help to determine the actual quantitative effects of education in economic growth especially in South Asian nations. By this, an affirmation of the relationship between the two variables can be made due to enough evidence obtained in this study.*

KEY WORDS: Education, Economic Growth, Regression, GDP, South Asia.

INTRODUCTION

Education is simply the process by which people seek to advance in command of knowledge at various capacities according to their interests and abilities. The rapid transformation of the world into a highly technological institute has posed a significant challenge on the illiterate class of people in the society today. Most transactions are rapidly being transformed and done through technological means, most of which require some form of education to clearly understand (Lee, 2016). Economic growth on the other hand is viewed as an increase in the general GDP of any nation over a given period of specified time. Most developed nations have had an indirect proportional relationship between the two variables of my study. This implies that both education and economic growth have had a significant positive trajectory on the upward crest both affecting the development of each other positively. For this reason, it is important to focus on the effects of acquiring enough knowledge and general economic growth especially in South Asian nations which are part of developing countries in the 21st century.

Education contributes to economic growth by directly having an effect on the state of human capital which is essential in establishing per capita income hence the GDP of any given state (Mistry et al., 2016). Human capital refers to a set of assets, which may include knowledge and skills or financial wellbeing, which may help in contributing to the level of income hence economic growth. There exists both theoretical and empirical affirmations of the effect of education on national economic growth. Theoretically, it has been noted that two theories provide a point of view on the relationship between education and

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economic growth. One is the neo-classical economic growth theory which suggests that a permanent increase in the availability of human capital, which as stated earlier as an effect of education, leads to a corresponding one step increase in the rate of economic growth (Dent, 2016). The second theory which is the endogenous theory suggest that a permanent increase in the level of stalking of human capital for any given nation leads to a permanent growth in the economic capability of any given nation. Empirically however, there is an application of macroeconomic publications that point out the variations between the two subject matters. There is an application of both cross-sectional studies and time frame series studies on various nations such as the South Asian countries in this study. The cross-sectional study which looks into the existing macro-economic literature is harmonized with the data obtained through the time series analysis and the empirical results are discussed to come up with the best findings on the study. This is the idea adopted for this study.

Traditionally, economic development has been evaluated in terms of growth in gross domestic products called GDP, per capita income, industrialization, rural development and so on. During 70`s it was redefined elimination of poverty, inequalities, unemployment etc. became an essential part of economic development. It was only 1991 The World bank talked about development in terms of improvement in qualities of lives (World bank,1991). Which included education & health as essential components of development instead of just increase & income GDP etc. It changes the social and cultural climates. Education is there for a more realistic indicator of development than any other variable. It is the necessary condition for all kinds of development- social, political, cultural, as well as economic (Mistry et al., 2016).

Education thus has a dual role. It is an input as well as an output. It is a means of development and is development itself. Investment in education plays a key role in economic development. There are three ways in which education can help economic development. One is, to look at labour as homogenous, and educated and uneducated workers that skilled and unskilled workers as a perfect substitute. The second way in which education can contribute to economic development is, by looking at works imperfect substitute. For example, any number of unskilled uneducated workers cannot replace in an engineer. An enterprise requires a particularly skilled and cannot be set up and run in the absence of education in parting the skilled (Tran, 2016). Third, and the most important benefit of education come in times of rapidly changing technology. Education is needed to learn and create technology. Educated labour is better in implementing and adopting new technology. Greatest economic benefit from education comes from the development of technology.

A country having good human capital stock can catch up with the latest technology and also become a leader a new technology. Education leads to the development of a globally competitive economy. The effectiveness of physical capital is except dependent on human capital. Technical, professional and administrative people are needed to make use of this capital, mobilize capital, exploit natural resources, create a market and carry on trade. It provides political leaders, lawyers, judges, doctors, nurses, engineers, artist, writers, craftsman and so on to spire development achieve sustainable long-term economic growth.

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South Asian countries like Bangladesh, India, Pakistan, Sri Lanka, Bhutan, Maldives and Nepal had failed to sustain their economic growth due to two main reasons. Firstly, Education is always neglected by the higher authorities and secondly, poverty is increased with the passage of time in South Asia (Tilak, 2018). Education is initiating economic growth throughout several aspects of improving the employment opportunities & health services, decreasing fertility rate, advanced technology, political stability and reduces the poverty rate (Narayan et al., 2015). This paper has examined the relationship between Education and economic growth south Asian countries based on time series data from 2000 to 2015.There is little research in empirical literature covering education and economic growth relations in the presence of other variables such as expenditure on education in panel data analysis. Considering the importance of education for economic growth and convenience using panel data, this study was designed to analyses the relationship between education and economic growth among selected South Asian countries. Physical capital and labour force are also included in the model because both variables are the very basic components of economic growth models.

To analysis, the nature of the relationship between Education expenditure and economic growth with include of Physical capital and labour force in the selected South Asian developing countries is the primary objectives of this research work. The second main objective of this paper is to suggest some policy alternatives for the development of education to make economic growth dynamic in the selected countries of South Asia (Hayes & Kihl, 2016). In this article, firstly we examine the analytical approach on economic development and education based on the gross domestic product (GDP) as the economic indicator and the expenditure, net enrollment (Primary, secondary, tertiary) and human capital indicator based on improved methodology (Levin, Lin & chut and ADF-Fisher chi-square test for unit root problem and (Augmented Dickey-Fuller test, Phillips-Peron tests for Co- integration, can help to clear the issue.

LITERATURE REVIEW

The role of education in economic growth and their inter-relationship are increasing focus of public debate since the era of Plato. Investment in education leads to the formation of human capital, comparable to physical capital and social capital, and that makes a significant contribution to economic growth (Mistry et al., 2016). Education as an investment secures returns in the form of skilled manpower that gears the needs of development, both for accelerating economic development and for improving the quality of the society.

The South Asian region as a whole invests 2.6% of the aggregate gross regional product on education, which is substantially less than the proportion in most developed and some other countries (Irshad, 2015). For example, the developed countries invest more than 6% of GNP on education (more than 10% in the oil-rich Saudi Arabia, more than 8% in Canada and the Netherlands) and the developing (Sodeyfi & Katircioglu, 2016). Countries invest 4.1% of GNP on education (it is. however, 5.5% for Kenya and 7.7% for Madagascar).

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However, several African countries invest less than 1% of GNP on education (UNESCO, 1981).

(Denison 1967) is one of the first to lay importance on investing in education, which is thought to have impact on growth and development. Investment in education can enhance growth and development by encouraging activities that can help catch up with foreign technological progress (Hakim et al., 2016). (Benhabib and Spiegel 1994) found that improved level of education positively affected growth in Chinese Taipei while (Berthelmy 1996) came out with a different result. (Francis and Iyare 2006) found evidence of bidirectional causality for Jamaica and evidence of causation running from income to education for Barbados and Trinidad and Tobago. So, it can be said that empirical results on causality between education and growth have been mixed but more results, based on improved methodology (Augmented Dickey-Fuller test, Phillips-Peron tests for unit root problem, Co- integration) test can help to clear the issue.

(Narayan *et al.* 2010) investigated the relationship between health and economic growth through including investment, exports, imports and research and development (R & D) in South Asia for the period 1974-2007 using panel Co- integration. They found that health, investment, exports, interaction between education and R & D have contributed positively to economic growth, imports have a statistically significant negative effect while education has had an insignificant effect on economic growth. (Parida and Sahoo 2007) examined the export-led and manufacturing-led growth hypothesis for four South Asian countries; namely, India, Pakistan, Bangladesh and Sri Lanka for the period 1980-2002 using panel co-integration technique (Reitz, 2018). They found support for export-led growth hypothesis and find that exports, fixed capital formation and expenditure on health and education to have statistically significant coefficients re-emphasizing the importance of these variables for higher economic growth.

On the other hand, educated people are less likely to engage in crimes towards the welfare of country and citizens. Education provides strong citizens to a country. Education has a highly positive impact on economic growth (Pelinescu, 2015). (Stevens and Weale 2003) provide a survey work on the link between education and economic growth. (Teles and Andrade 2004) show the main objective of their paper is to visualize the relation between government spending on basic education and the human capital accumulation process, observing the impacts of this spending on individual investments in higher education and on economic growth. (Loening 2005) investigates the impact of human capital on economic growth in Guatemala during 1951-2002 using an error- correction methodology. The results indicate a better educated labour force having a positive and significant impact on economic growth. (Babatunde 2005) investigated the long run relationship between education and economic growth in Nigeria between 1970 to 2003 through the application of Johansen Co- integration technique and Vector Error Correction Methodology in Nigeria.

According to the (Lucas 1988) growth theorists such as the human capital accumulation can sustain growth for long time period (Stokey,1988; Azariadis and Drazen,1990;). These

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theories have achieved support from macroeconomic regression analysis which emphasized on the positive effect of education on growth and development according to the economic historians work such as (Fogel, 1990; Mankiw et al., 1992; Barro and Sala-i-Martin, 1995;). Expenditure on education is an investment in human capital and plays an equally important role in economic development It is social infrastructure for economic development (Tupas, 2015). Adam Smith, a famous classical economist treats human resources as part of the fixed capital. Marshall called it a national investment. According to him, capital invested in a human being is most valuable of all investment. In the following years, economist paid a very little attention to the role of human resources in economic growth (Jager & Schmidt, 2016). Measures of capital formation included physical capital but excluded expenditure in education and research. It is only in recent years Shield and other economists have reintroduced the importance of human resources development in economic analysis (Eggoh et al., 2015). The relationship between expenditure on education and growth of income, GDP, the rate of return on investment, physical capital formation etc. But when it comes to development planning economist continue to treat education as a residual category. The economic impact on education on development can be viewed as in terms of benefit to an individual and to the economy as a whole.

METHODOLOGY & DATA

This paper employed the use of a well-illustrated conceptual framework of economic growth models. It focuses on cross regression to determine the relationship between several dependent variables. These variables include Gross Domestic Product (GDP, y), expenditure on education (k), labor force (L) and education (E). The other variables are net enrollment of primary, secondary and tertiary. The data used here is majorly obtained from the World Bank and is that of seven countries from the southern parts of Asia. The data represents statistics collected over a period of years from the year 2000 to 2015. Various tests are going to be conducted in addition to regression to come up with the appropriate relationship between the variables.

In reference to Loening (2004), human capital is first considered as an independent factor of production (Apostoloy, 2016). This is depicted in the Cobb-Douglas production function with constant return to scale as:

$$Y = A.\ K^{\gamma}\ .\ H^{\theta}\ .\ L^{(1-\gamma-\theta)} \ldots \quad (1)$$

Where Y is the output, A represents the total productivity factor, K is the physical capital or expenditure in education, H is human capital and L is labor. The logarithm of equation (1) gives us the structural form of the production function as shown;

$$Ln\ y_t = Ln\ A + \gamma.Ln\ k_t + \theta.Ln\ h_t + u_t \ldots \quad (2)$$

From which y = Y/L = output per worker, k = K/L= capital per worker, h = H/L= average human capital

In its error correction form equation (2) can be represented as:

$$\Delta Ln\ y_t = \beta_0 + \beta_1 \Delta Ln\ k_t + \beta_2.\ \Delta Ln\ h_t \ldots \beta_3.\ (Ln\ y_{t-1}\ \gamma.Ln\ k_{t-1} + \theta.Ln\ h_{t-1} - Ln\ A) + u_t \ldots (3)$$

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The final structural form of the model in the vector error correction form is given as:
$\Delta Ln\ y_t = Ln\ A + \beta_1 \Delta Ln\ k_t + \beta_2 .\ \Delta Ln\ h_t \ldots \beta_3 .\ Ln\ y_{t-1} + \beta_4 .Ln\ k_{t-1} + \beta_5 .Ln\ h_{t-1} + \beta_6 .Dummy_t + u_t \ldots$ *(4)*

The coefficient β3 has been used to indicate the measure of the speed of adjustment of the system towards its equilibrium (Kleyn et al., 2017). The Cobb-Douglas production function with returns scale is described as;

$Y = A.\ K^{\alpha} .\ L^{(1-\alpha)} \ldots$ *(5)*

The logarithmic expression of this after standardization with labor units gives us;

$Ln\ Y = Ln\ A + \alpha .Ln\ K \ldots$ *(6)*

This model takes total factor productivity to be the function of such variables as foreign inputs, amount of human capital and government expenditure (Khatun & Afroze, 2016). This infers that an educated labor force is essential in the determination of level of productivity rather than acting as a factor in a production function. Expenditure on education is also noted to influence the level of human capital which in turn would favor improvements in the total factor productivity.

EMPIRICAL RESULTS AND DISCUSSION

The analysis useful in this study which was the regression analysis explains the reason for adoption of the applied methodology. A set of data representing various countries such as India, Nepal, Bhutan, Maldives, Pakistan, Sri Lanka and Bangladesh & various data sources from the World Bank are critically brought into regression analysis to identify the relationship between them. The initial and foremost test involved was to establish the ability of the variables adopted to assume a stationary position. In macro-economics, it is a rare occurrence to have stationary variables due to the constantly changing hypothetical environment especially in relation to the matters of the economy of any given nation. Most variables in macro-economics are thus integrated in the order of zero. However, should we ever establish a stationary variable then it would be easy to estimate the coefficients since the initial specifications of the variables would be available. The estimation can be taken as an autocorrected model where the series are non-stationary but co-integrated. Variables which are not stationary and co-integrated imply that there is a necessity in specifying the variables as differences.

Unit Root test

The establishment of the presence of unit roots and determination of the order of integration of the variables was done by the Augmented Dickey-Fuller & Levin, Lin & Chu t* test. In this test, it is evident that the confirmation of a unit root which always indicates non-stationary variables is bound to acceptance if the variables are at the level of 5% and 1%. This is in proper harmony with the initial assumption made in macro-economics that data series of this kind are often non-stationary. The null hypothesis of the non- stationary data is accepted at the 5% level of significance because the statistics of the ADF test at the same

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level form two variables that are less than their respective critical values. It was also found that it could not be rejected for the level. The results are represented in the table below.

Variables	Statistics value		Sig.	Conclusion
Δ (Y)	Levin, Lin & Chu t*	-11.7357	0.0000	I(1)
	ADF - Fisher Chi-square	112.182	0.0000	I(1)
Δ (K)	Levin, Lin & Chu t*	-6.48926	0.0000	I(1)
	ADF - Fisher Chi-square	65.4919	0.0000	I(1)
Δ (L)	Levin, Lin & Chu t*	-2.82105	0.0024	I(1)
	ADF - Fisher Chi-square	28.6132	0.0118	I(1)
Δ (NEP)	Levin, Lin & Chu t*	-4.42786	0.0000	I(1)
	ADF - Fisher Chi-square	42.7211	0.0001	I(1)
Δ (NES)	Levin, Lin & Chu t*	-1.83066	0.0336	I(1)
	ADF - Fisher Chi-square	21.6375	0.0864	I(1)
Δ (NET)	Levin, Lin & Chu t*	-3.69257	0.0001	I(1)
	ADF - Fisher Chi-square	28.2399	0.0132	I(1)

Table 1: Unit root test, Source: author's calculations using E-views.

Table 1, an expression of the results for the unit root test. Unit root test is often used when the research aims at the establishment to know whether variables of the study in the data set are stationary or not. In this study, there is an application of unit root test before regression analysis. In most researches where unit root test has been applied, it has had a greater impact which is the elimination of spurious results produce that is also harmful. This shows the importance of stationary data where the presence of a constant trend, regardless of its positivity or a negativity, helps in elimination of spurious results. I accepted the alternative hypothesis and rejected the null hypothesis for the following reasons. First and foremost, the output file of the results indicate that all the variables are the stationary first difference. This has an implication of the rejection of the null hypothesis and acceptance of the alternative hypothesis because of no significant trend yet availability of stationary data. Now we can further move to explore relationship between GDP(Y), expenditure on education(K), labour forces(A), Education(E) [Net enrolment of primary(NEP), secondary(NES) & tertiary(NET)].

Co- integration Results

The Pedroni Residual Co- integration technique is applied to explore the possibility of long-run equilibrium. Co- integration test clarifies the existence of long-run equilibrium relationship between the variables. We estimated that the Pedroni (1999) extends the procedure of residual-based panel Co- integration tests model using GDP (Y) (Dependent

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variable) and the independent variables Expenditure on education(K), Labour force (A), Education (E) [net enrolment of primary(NEP), net enrolment of secondary(NES), net enrolment of Tertiary(NET)] with Individual intercept and individual trend. Here are seven test results (panel v-Statistic, Panel rho-Statistic, Panel PP-Statistic, Panel ADF-Statistic, Group rho-Statistic, Group PP-Statistic, Group ADF-Statistic). In this seven test, there are eleven outcomes. And we shall consider all the outcome. In this outcome 5 result shows that probability value is more than 5%, meaning that we cannot reject the null hypothesis and six result shows that probability value is less than 5% meaning that we can reject the null hypothesis. Our null hypothesis is, there is no co-integration and the alternative hypothesis is there is co-integration. Here out of eleven corresponding probabilities, six can reject the null hypothesis meaning that majority can reject the null hypothesis. So we can take the decision that we should reject the null hypothesis and can accept the alternative hypothesis meaning that our independent variables such as (Y, K, A, E) are co-integrated, meaning that they have long run associations.
The results are given below

Pedroni Residual Co- integration Test

Series: logY, logk logA logE
Sample: 2000 2015
Included observations: 112
Cross-sections included: 7
Null Hypothesis: No Co- integration
Trend assumption: No deterministic intercept or trend
Automatic lag length selection based on SIC with a max lag of 2
Newey-West automatic bandwidth selection and Bartlett kernel

Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	0.131035	0.4479	-0.895842	0.8148
Panel rho-Statistic	-1.135315	0.1281	-0.452301	0.3255
Panel PP-Statistic	-4.884001	0.0000	-4.896388	0.0000
Panel ADF-Statistic	-4.361914	0.0000	-5.942149	0.0000

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	0.404866	0.6572
Group PP-Statistic	-8.006630	0.0000
Group ADF-Statistic	-10.04038	0.0000

Cross section specific results

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Phillips-Peron results (non-parametric)

Cross ID	AR(1)	Variance	HAC	Bandwidth	Obs
Bangladesh	0.514	0.004770	0.005784	2.00	15
India	-0.196	0.056099	0.005971	13.00	15
Nepal	-0.204	0.675516	0.217011	8.00	15
Pakistan	0.189	0.502074	0.511682	1.00	15
Maldives	-0.117	0.378289	0.378289	0.00	15
Bhutan	0.022	0.064648	0.011072	10.00	15
Sri Lanka	0.050	0.087864	0.079665	2.00	15

Augmented Dickey-Fuller results (parametric)

Cross ID	AR(1)	Variance	Lag	Max lag	Obs
Bangladesh	0.303	0.001844	1	2	14
India	-0.196	0.056099	0	2	15
Nepal	-0.635	0.039722	2	2	13
Pakistan	0.189	0.502074	0	2	15
Maldives	-0.117	0.378289	0	2	15
Bhutan	-0.704	0.031213	1	2	14
Sri Lanka	-1.276	0.047299	2	2	13

Source: author's calculations using E-views.

Estimation results of productivity with country dummy

The last bit of analysis involves the use of the dummy variables estimation approach. These variables usually possess the values 0 and 1. The results provided by these estimates is important in estimating or determining the effect of a particular variable on another. The estimates of the dummy variables are shown in the table below for the South Asian countries. The coefficient for the independent variables (K, L, E) statistically significant with the expected positive sign. Because the p-value is less than 5% and all dummy variables coefficient is positive. Meaning that the particular countries policy has a positive impact on our dependent variable.

Estimation results also show that the coefficient of K(t) is positive and p-value is less than 5%, so we can say that the independent variables jointly can influence the dependent variable. And the coefficient of E(t) shows that the positive correlation with the dependent variable where the p-value is less than 5%. Meaning that there is a significant impact on dependent variable GDP(Y).

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	coefficient	t-statistics	Prob.
c	4.166588	2.658285	0.0090
$K(t)$	0.368671	2.558477	0.0119
$E(t)$	0.281032	7.248381	0.0000
DM1	1.782535	4.197147	0.0001
DM2	1.910870	4.553546	0.0000
DM3	1.257557	2.849635	0.0052
DM4	1.292297	2.934374	0.0041
DM5	2.013810	4.849223	0.0000
DM6	1.972557	4.729617	0.0000
Adjusted R-squared	0.593521		

Table 2: Estimation of dummy variables, Source: author's calculations using E-views.

Accordingly, to the studies, it is also evident that a significant relationship exists between the expenditure on education and the productivity level. An expenditure in education simply implies an investment towards bettering the quality of education. The resultant educated labor force is very instrumental in boosting the economic growth of a country. The 7 South Asian countries have also depicted a similar trend over the years with the two variables exhibiting a direct proportionality relationship. The table below shows this;

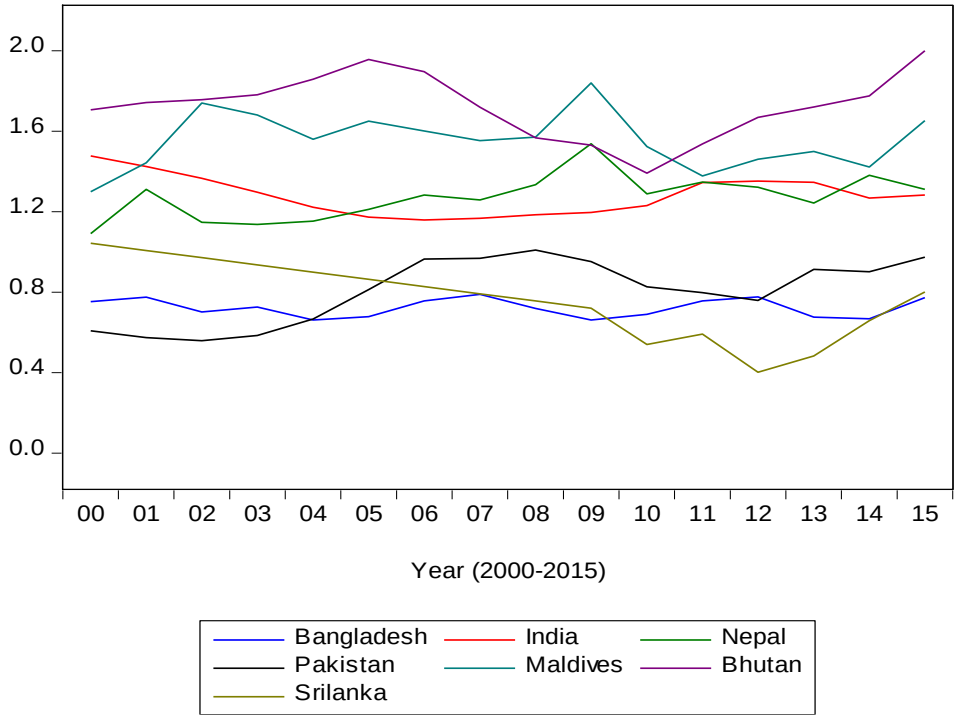

Figure 1 :Expenditure on education (K/L) of south Asian countries, 2000-2015

From the figure, Bhutan have made the largest investment of their GDP in improving education over the years while Sri Lanka have recorded the lowest investment. The relative

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rates of expenditure in education has had a direct effect on the productivity level of the individual countries. Bhutan for example has enjoyed periods of increased productivity all attributed to their investment in education. Education results in skilled labor who are creative and have the ability to create new ideas of earning income. Possession of such individuals provides a country with diverse options in which they can invest and boost their economy further.

CONCLUSION

This paper sought to quantitative analyze the education and economic growth among 7 South Asian countries. The main variables used here were expenditure on education, human capital, labor, net enrollment of primary, net enrolment of secondary and net enrolment of tertiary. It aimed to determine the effect of these variables towards the overall productivity level in terms of economic growth.

Expenditure in education has proven to be an important variable towards the achievement of economic growth and education. Investment in education results in increased quality of services offered hence resulting in skilled personnel. The impact of skilled personnel in a country is beyond doubt a productive one. Increased ways of sourcing income and advancements in technology are all results of quality education and contribute towards the growth of an economy.

References

Apostolov, M. (2016). Cobb–Douglas production function on FDI in Southeast Europe. *Journal of Economic Structures*, *5*(1), 10.

Azariadis, C., Drazen, A. (1990), Threshold externalities in economic development. *The Quarterly Journal of Economics*, 105(2), 501-526.

Babatunde, M.A. & Adefabi, R.A. (2005). Long run relationship between education and Economic Growth in Nigeria: Evidence from the Johansen's Co- integration Approach. *Paper presented at the Regional Conference on Education in West Africa*, Dakar Senegal.

Barro, R., Sala-i-Martin, X. (1995), *Economic Growth*. New York: McGraw-Hill.

Benhabib, J. and M.M. Spiegel, (1994), The Role of Human Capital in Economic Development – evidence from aggregate cross-country data, *Journal of Monetary Economics*, 34(2), October.

Berthelemy, G.C. and A. Varoudakis (1996), Policies for Economic Take-off, Policy Brief no 12, OECD, Paris.BIDS (2007), Disparity in Education and Quality Education for all, *Bangladesh Institute of Development Studies*, Dhaka.

Denison, E. F. (1967) Why Growth Rates Differ: Postwar Experience in Nine Western Countries (Washington, DC: Brookings Institution).

Dent, C. M. (2016). *East Asian Regionalism*. Routledge.

Eggoh, J., Houeninvo, H., & Sossou, G. A. (2015). Education, health and economic growth in African countries. *Journal of Economic Development*, *40*(1), 93.

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

Fogel, R.W. (1990), The Conquest of High Mortality and Hunger in Europe and America: Timing and Mechanisms. Cambridge, Mass., USA: *National Bureau of Economic Research*.

Frances, B. and S. Iyare (2006), Education and Development in the Caribean; a Co-integration and causality approach, *Economics Bulletin*, 15 (2), 1-13.

Hakim, M. M., & Merkert, R. (2016). The causal relationship between air transport and economic growth: Empirical evidence from South Asia. *Journal of Transport Geography*, *56*, 120-127.

Hayes, P., & Kihl, Y. W. (2016). *Peace and Security in Northeast Asia: Nuclear Issue and the Korean Peninsula: Nuclear Issue and the Korean Peninsula*. Routledge.

Irshad, M. S. (2015). One belt and one road: dose China-Pakistan economic corridor benefit for Pakistan's economy? *Journal of Economics and Sustainable Development*, *6*(24).

Jäger, P., & Schmidt, T. (2016). The political economy of public investment when population is aging: a panel Co- integration analysis. *European Journal of Political Economy*, *43*, 145-158.

Khatun, T., & Afroze, S. (2016). Relationship between Real GDP and Labour & Capital by Applying the Cobb-Douglas Production Function: A Comparative Analysis among Selected Asian Countries. *Journal of Business*, *37*(1).

Kleyn, J., Arashi, M., Bekker, A., & Millard, S. (2017). Preliminary testing of the Cobb–Douglas production function and related inferential issues. *Communications in Statistics-Simulation and Computation*, *46*(1), 469-488.

Lee, L. X. H. (2016). *New East Asian Economic Development: The Interaction of Capitalism and Socialism: The Interaction of Capitalism and Socialism*. Routledge.

Loening, J.L. (2004). Time Series Evidence on Education and Growth: The Case of Guatemala, 1951-2002. *Revista de Analisis Economico*, 19 (2): 3 -40.

Loening, J.L. (2005), Effects of primary, secondary and tertiary education on economic growth. World Bank *Policy Research Working Paper*. p3610.

Lucas, R. E. (1988) "On the Mechanics of Economic Development" *Journal of Monetary Economics* 22(1): 3-42.

Mankiw, N.G., Romer, D., Weil, D.N. (1992), A contribution to the empirics of economic growth. *The Quarterly Journal of Economics*, 107(2), 407-437.

Mistry, J., Li, J., Yoshikawa, H., Tseng, V., Tirrell, J., Kiang, L., ... & Wang, Y. (2016). An integrated conceptual framework for the development of Asian American children and youth. *Child Development*, *87*(4), 1014-1032.

Narayan, P. K., & Liu, R. (2015). A unit root model for trending time-series energy variables. *Energy Economics*, *50*, 391-402.

Narayan, S., P.K. Narayan and S. Mishra, 2010. Investigating the relationship between health and economic growth: Empirical evidence from a panel of 5 Asian countries. *Journal of Asian Economics*, 21(4): 404-411.

Parida, P.C. and P. Sahoo, 2007. Export-led growth in South Asia: A panel Co- integration analysis. *International Economic Journal*, 21(2): 155-175.

Pelinescu, E. (2015). The impact of human capital on economic growth. *Procedia Economics and Finance*, *22*, 184-190.

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)

Reitz, J. G. (2018). *Warmth of the welcome: The social causes of economic success in different nations and cities*. Routledge.

Sodeyfi, S., & Katircioglu, S. (2016). Interactions between business conditions, economic growth and crude oil prices. *Economic Research-Ekonomska Istraživanja*, *29*(1), 980-990.

Stevens, Philip and Weale, Martin (2003), "Education and Economic growth" International Handbook on the Economics of Education.

Stokey, N.L. (1988), Learning by doing and the introduction of new goods. *The Journal of Political Economy*, 96(4), 701-717.

Teles, Vladimir Kuhl, and P.Andrade, Joaquim (2004), "Public Investment n Basic Education and Economic Growth" Universidade de brasilia, Instituto de ciencian, Humanas, Departmento de economia.

Tilak, J. B. (2018). The effects of adjustment on education: a review of Asian experience. In *Education and Development in India* (pp. 473-507). Palgrave Macmillan, Singapore.

Tran, L. T. (2016). Mobility as 'becoming': A Bourdieuian analysis of the factors shaping international student mobility. *British Journal of Sociology of Education*, *37*(8), 1268-1289.

Tupas, R. (2015). Inequalities of multilingualism: Challenges to mother tongue-based multilingual education. *Language and Education*, *29*(2), 112-124.

UNESCO (1981) Statistical Year Book 1981. Paris.

'World Development Report 1991: The Challenge of Development'. New York: Oxford University Press. World Bank. 1991

Print ISSN: 2053-2199 (Print), Online ISSN: 2053-2202(Online)