Economic Performance and Human Development: A Critical Examination on SAARC Region

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Abstract

The impact of economic performance on human development has become a topic of debate in the recent times. For the past few years the member nations of SAARC region reported to have an unprecedented economic growth. But the human development in this region seems to be abysmal. This paper is aiming to assess the impact of economic performance of SAARC nations on its human development. The study extensively covers the macro economic data and the human development index (HDI) of the SAARC nations from 1990 to 2015. The Random effects (RE) model of panel regression analysis confirmed that GDP and GDP per capita can influence human development of these nations whereas the economic growth do not have any significant impact on human development at 1% and 5% levels of significance. The study is also intended to suggest numerous policy measures for enhancing the human development of this region.

Keywords: SAARC, Economic Performance, HDI, FE Model, RE Model

JEL Codes: B41, C01, C23

1. Introduction

The south Asian Association for Regional Cooperation (SAARC) is an intergovernmental union of eight nations located in South Asian Region. Its member states include Afghanistan, Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan and Sri Lanka. SAARC region accounts US$3.31 trillion of world GDP in 2017 and around 21% of the world population is living in this region. The SAARC member states have addressed numerous challenges and changes over the past three decades. For instance Indian economy adapted to the Liberalization, Privatization and Globalization (LPG) model since 90's and as a result its GDP nominal has enhanced to $2.848 trillion in 2017, whereas the Indian nominal GDP prior to LPG was merely $0.32trillion. An armed conflict between two SAARC member nations

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India and Pakistan was took place during 1999. This conflict slowdowns the pace of the economic growth of the above countries for some period. Moreover political instability sorely hampered the economic progress of Pakistan over last two decades. The development of Afghanistan was thrashed by the civil war happened in between 1996 to 2001.Even after the civil war almost continuous series of armed conflicts has dominated and afflicted in Afghanistan. In 2009, Sri Lanka declared the end of the two and a half decade of civil war between the Sri Lankan government and the Liberation Tigers of Tamil Eelam (LTTE). Thereafter foreign revenue through tourism has increased significantly and contributes around 11% of the Sri Lankan GDP. Nepal has declared as a federal republic by abolishing the monarchy in 2008. The earth quake in 2015 has badly hits the Nepalese economy as it knock down around 50% of their GDP. Bhutan's political system has also changed from an absolute monarchy to a constitutional monarchy. Some members like Maldives recently going through a period of political uncertainty. The above incidents might have influenced the economic progress as well as human development of the above nations in some extent.

War, internal conflicts, natural calamities, political uncertainties etc., may pressures the economies to fuel their GDP towards defense and allied sectors. On such occasions the equitable distribution of fund to priority sectors cannot happen. Indeed this adversely affects the development of the citizen of such nations. While looking at the Human Development Index (HDI) of SAARC nations we can find a mixture as some nations reported to have high HDI scores whereas some others remained in the lowest position. Based on 2016 HDI report Sri Lanka dwell in 46th position in terms of human development. Maldives and India managed to get a position within the first hundred with respective ranks of 86 and 97. But nations like Bhutan, Nepal, Bangladesh, Pakistan and Afghanistan ranked much lower with positions of 105,111, 110,117 and 132 respectively in the HDI index of 2016. The above facts were considered to establish a hypothesis that the economic performance can be a factor in determining the human development of a nation. During the period of political and economic uncertainty the above nations were ranked low in terms of human development and during the period of recovery we can observe some steady improvements.

2. Literature Review

The origins of the HDI are found in the annual Human Development Reports produced by the Human Development Reports Office of the United Nations Development Programme (1990). The HDI was initially devised by the Pakistani economist Haq, M.U and the Nobel laurite Prof Sen, A. The HDI, exemplifies Sen's "capabilities" approach to understanding human well-being (Sen 1985).HDI is the

amalgamated index of multiple factors like, life expectancy, education and per capita income. HDI is computed by using the following equation

$$HDI = \sqrt[3]{\frac{Life\ Expectancy - 20}{85 - 20} * \frac{MYS + EYS}{2} * \frac{In(GNIpc) - In(100)}{In(75000) - In(100)}} \qquad \ldots \ldots \ldots (1)$$

Where MYS stands for Mean Schooling years, EYS represent Expected schooling years and GNIpc denotes Gross National Income per capita.

In the words of Sen (1985) human development signals "a person's capability to have various functioning vectors and to enjoy the corresponding well-being achievements". Ranis (2004) observed a two way relationship between economic growth and human development. The study suggests that "nations may enter either into a virtuous cycle of high growth and large gains in human development, or a vicious cycle of low growth and low rates of HD improvement". In another study conducted by Grubaugh (2015) states that the HDI is not intended to be able to make minor distinctions among already highly developed countries but to highlight differences in development among countries that are still developing. Carvalho (2016) argues that institutional and economic reforms led to positive economic effect and significant impacts on other dimensions of human development in developing countries.

Ramesh (2014) examined whether economic growth has contributed to human development of Ethiopia. The results concluded that economic growth made in Ethiopia has contributed to human development. Income, life expectancy and school attainments move together; however, life expectancy progresses faster than educational attainments. A research by Akanbi (2017) reported that social expenditure, domestic investment, financial inclusion, income inequality, income and human poverty are significant determinants of either human development or per capita GDP in Sub-Saharan Africa. Awad (2014) reported that in the long run, human development is positively related to economic growth through education and employment performance channels in Sudan. At the same time, economic growth could positively improve the opportunities for the education of households and involvement in economic activities. Maquin (2017) reported that there was a positive correlation between GDP with human development of Indonesia. Pervaiz (2015) claimed that economic growth; trust may affect economic growth indirectly through its positive effects on human development in Pakistan.

Mustafa (2013) denotes that growth has a negative and significant influence on human development od Asian region. The findings confirm the success of trade liberalization policies in the region in achieving higher growth only. However, this seems to have had negative implications on distribution of income and thus has

impeded human development. A study by Baishya (2012) also call out that economic growth alone does not guarantee human development.

As developing countries strive to improve their living standards, they face challenges like concentration of wealth among very few groups, lack of quality education for the poor and weaker democratic institutions. Inequality does not only exist inside countries, but also between nations (Gajardo, 2016). A study conducted by Gopalakrishna (2012) points that there exist wider inter regional disparities in human development of India. During the period of liberalization the states showed a tendency of convergence rather than divergence in terms of human development. A study by Mukherjee (2010) signifies that that per capita income is not translating into human well being. The outcome of this study came out of a research conducted among Indian states.

3. Objectives, Data and Methodology

The primary objective of this study is to assess the impact of economic performance of SAARC nations on its human development. This study is also aiming to suggest some suitable policies to enhance the human development of SAARC region. In this study the economic data's such as Gross Domestic Products (GDP), GDP Per Capita (GDPPC), GDP Growth rate are used as regressors and its impact on the human development is examined. The Human Development Index (HDI) provided by UNDP has been considered in this study as a standard measure for evaluating the human development in the SAARC region. The data panel is balanced as this study is considering economic data's of eight countries for 26 years ranging from 1990 to 2015. During this period the SAARC nations addressed numerous economic and political challenges and consequently which can have a bearing on the development of its residents. Moreover the above period can be considered as the most recent normal period for which the research data is available. The macroeconomic data for this research is accessed from the web portal www.countryeconomy.com. The collected data is processed by using Eviews.10 statistical package. The data analysis structure can be detailed as below

   a. Checking the correlation coefficient of the data set for examining the direct relationship existing among economic performance and human development.
   b. Running the Fixed Effects (FE) model for exploring the relationship between predictor and outcome variables within a country.
   c. Running the Random Effects (RE) model for examining the pooled impact of regressors on the dependant variable.
   d. To make a choice between fixed effects model and random effects model by performing the Hausman test.
   e. Diagnostic tests of the established model.

The data analysis is carried out by using the following statistical techniques.

3.a. Correlation

The British biometrician Prof. Pearson (1990) has developed several formulae of algebraic nature for measuring not only the nature of correlation but also the exact extend of correlation in the numerical form. The correlation co-efficient is the numerical value which shows the degree of relation between two variables and represented by using a symbol 'r'. The value of correlation must lies in between -1 to +1. Depending upon this measure one can infer that the correlations between variables are positive or negative. It can be computed by using the below formula.

$$Correlation\ Coefficient\ (r) = \frac{N \sum XY - \sum X . \sum Y}{\sqrt{N \sum X^2 - \sum (X)^2} - \sqrt{N \sum Y^2 - \sum (Y)^2}} \ldots\ldots\ldots\ldots (2)$$

Here 'N' stand for number of observations, X, Y represents the variables to be correlated.

3.b. The Fixed effects (FE) Panel regression model

The fixed effects model allow for heterogeneity to the data by permitting to having its own intercept value. In other words fixed effects represent the subject-specific means. The term fixed effect used due to the fact that although the intercept may differ across the countries, but the intercept does not vary over time. It is time invariant. The functional form of fixed effect model can be expressed as;

$$Y_{it} = (\alpha + \mu_i) + X_{it}\beta + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(3)$$

3.c. The Random Effects (RE) Panel regression model

Random effect model is applied by allowing a common mean value for the intercept. This method is more focusing on homogeneity of the data. The functional form of random effect model is

$$Y_{it} = \alpha + X_{it}\beta + (\mu_i + \varepsilon_{it}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(4)$$

In the above equations 'εit' is the traditional error term, 'α' is the intercept and 'β' is the coefficient. And 'μi' represents a fixed or random effect specific to individual (group) or time period that is not included in the regression.
From the above equations the general model of panel data can be described as;

$$Yit = \alpha + \sum_{k=1}^{k} Xit . \beta kit + \varepsilon\ it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(5)$$

'Y' denotes dependant variable and 'X' stands for the regressors.

4. Data Analysis & Findings

The descriptive statistics of the data is presented in Table no.1

Table I: Descriptive Statistics

		Mean	Median	Std.Dev	Kurtosis	Skewness
	GDP (M$)	8890.607	4849.5	7172.485	-1.18772	0.768334
	GDPPC ($)	336.4286	253	195.0691	-1.18173	0.684689
	GDP GROWTH	0.047214	0.025	0.179805	4.994198	1.789979
AFGHANISTAN	HDI	0.389679	0.3885	0.067908	-1.64001	0.048529
	GDP (M$)	93183.32	65898.5	63016.5	0.623212	1.279682
	GDPPC ($)	637.8214	470	356.2067	0.600856	1.294509
	GDP GROWTH	0.056393	0.0555	0.008946	-1.0282	0.18491
BANGLADESH	HDI	0.491821	0.495	0.063689	-1.28065	-0.11706
	GDP (M$)	932.75	622.5	133.9914	-0.80326	0.769254
	GDPPC ($)	1346.036	994.5	159.2901	-1.06831	0.645208
	GDP GROWTH	0.0665	0.0645	0.024747	0.255884	0.270375
BHUTAN	HDI	0.578679	0.572	0.002411	0.971389	1.621091
	GDP (M$)	1009691	669979	731718.5	-0.90456	0.733043
	GDPPC ($)	860.6429	614.5	527.128	-1.16926	0.629723
	GDP GROWTH	0.066464	0.068	0.021016	0.669344	-0.27203
INDIA	HDI	0.526571	0.522	0.065041	-1.33475	0.095822
	GDP (M$)	1657.143	1107.5	1350.557	-0.57602	0.829306
	GDPPC ($)	5032.036	3825.5	3302.94	-1.35675	0.46453
	GDP GROWTH	0.065464	0.071	0.075005	3.441794	0.228198
MALDIVES	HDI	0.610107	0.6195	0.066788	-1.42293	-0.09211
	GDP (M$)	10369.32	6801	6739.764	-0.94772	0.795264
	GDPPC ($)	397.8571	270.5	216.1967	-1.06252	0.784462
	GDP GROWTH	0.044357	0.045	0.017559	1.304669	-0.38349
NEPAL	HDI	0.472571	0.466	0.059926	-1.34388	0.095788
	GDP (M$)	137221.7	97648	77294.34	-0.68065	0.818573
	GDPPC ($)	861.7857	686	330.6167	-0.90655	0.734483
	GDP GROWTH	0.04425	0.043	0.01868	0.651599	0.312065
PAKISTAN	HDI	0.481179	0.4805	0.050622	-1.55446	-0.01402
	GDP (M$)	36753.14	22638	4961.353	-1.01926	0.760719
SRILANKA	GDPPC ($)	1840.821	1170.5	226.3361	-1.05824	0.752563

		Mean	Median	Std.Dev	Kurtosis	Skewness
	GDP GROWTH	0.05625	0.0605	0.036258	0.733426	-0.73573
	HDI	0.704107	0.7085	0.009045	-1.39939	-0.19827
Source: Secondary Data						

The country specific descriptive statistics' are provided in the above table. From the above it can be easily inferred that India is occupying the first position among SAARC nations in terms of GDP, and GDP growth rate with respective average figures of \$1009691 million and 6.6% respectively. The average GDPPC of Maldives for the study period observed to be \$5032.03. Sri Lanka is also reported to have a mean GDPPC of \$1840.82. Owing to high GDPPC the nations like Maldives and Sri Lanka maintained a decent human development score of 0.61 and 0.70 correspondingly. The kurtosis values of GDP, GDPPC and HDI of the data reported to be negative during the period of study; this in turn meant that the distribution has lighter tails and a flatter peak than the normal distribution. But with respect to GDP growth a positive kurtosis was reported. A distribution with a positive kurtosis value indicates that the distribution has heavier tails and a sharper peak than the normal distribution. The skewness data reported to be positive in majority of the cases; it indicates that the distribution is having a long tail on the right direction.

The relationship between the pooled data was further examined by using the Pearson correlation co-efficient. The results are presented in Table 2.

Table 2: Correlation Matrix					
		GDP	GDPPC	HDI	GDP Growth
GDP	r	1.00			
	T-Value				
	p				
GDPPC	r	-0.04	1.00		
	T-Value	-0.58			
	p	0.56			
HDI	r	0.12	0.594*	1.00	
	T-Value	1.76	11.02		
	p	0.08	0.00		
GDP Growth	r	0.06	0.06	0.12*	1.00
	T-Value	0.96	0.85	18.1	
	p	0.34	0.36	0.00	
*Source: Data Analysis, * significant at 5% level of significance*					

GDP growth and GDP per capita is reported to have a positive correlation with the Human Development Index (HDI) with corresponding correlation coefficients of 0.12 and 0.59. This implies that GDP growth and GDPPC can be a long run factor for influencing the human development of SAARC region. The above correlation results were further signified by T-statistics as the observed probability values of the test statistics is much below the critical level of 0.05 (0.00 < 0.05) at 95% confidence level.

The panel regression analysis was employed for exploring the hypothesis "whether the economic performance of SAARC nations has a significant impact on the human development of their citizens". The results of panel regression (both FE and RE) are presented in Table 3.

Table 3: Panel Regression Analysis						
	Fixed Effects (FE)			Random Effects (RE)		
	Coefficient	T-Stat	p. value	Coefficient	T-Stat	p. value
Intercept	0.481***	103.60	0.00	0.481***	14.37	0.00
GDP	7.87E-08***	7.41	0.00	7.78E-08***	7.37	0.00
GDPPC	2.39E-05***	11.26	0.00	2.41E-05***	11.39	0.00
GDP GROWTH	0.074*	1.95	0.053	0.074*	1.96	0.052
R Squared	0.87			0.51		
Adjusted R squared	0.86			0.50		
F-Statistics	136.99***			75.36***		
Probability Value (F-Stat)	0.00			0.00		
Rho				0.85		
Hausman Test						
Chi - Square Statistics	1.58					
Probability Value	0.664					
Dependant variable is HDI, *** indicates significant at 1%, 5% and 10% levels respectively **indicates significant at 10% levels only*						

The fixed effect model assumptions are made on the basis of 'within effect' of the data where as random effect is more concerned on the 'within' as well as 'across' effects of the data set. We have to make a choice between fixed effect and random effect models and in this connection Hausman test is performed.

Central assumption of random effects estimation is that 'the random effects are uncorrelated with the explanatory variables'. One common method for testing this assumption is to employ Hausman (1978) test to compare the fixed and random effects estimates of coefficients.

The hypotheses are;
H0: The estimated coefficient of random effect (RE) model is consistent and efficient.
H1: The estimated coefficient of fixed effect (FE) model is consistent and efficient.

From Table 3 (refer Hausman test) it can be observed that the probability value of the test statistics 0.664 is much above the critical level of 0.05 at 5% level of significance. Thereby we can accept the H0 by concluding that the estimated coefficient of random effect model is more consistent. Subsequently the test results of random effect (RE) model can be examined to arrive at a conclusion regarding the impact of economic performance on human development.
For performing Hausman test 5% significance level is used. According to Davidson and MacKinnon (1998) one can set a nominal size of 5% when performing Hausman test, but the actual significance level could be bigger, if there is over-rejection of the null hypothesis and the information for the risk must be accessible for the researcher.

The intercept or alpha (α), this indicates the value of the dependant variable when all the independent variables are 'zero'. In random effect model the value of α is 0.481. The obtained coefficients (β) for GDP and GDPPC to HDI are positive and significant at 1%, 5% and 10% levels of significance. This indicates that any change in economic indicators like GDP and per capita income can bring a positive change in the human development index of SAARC countries. But interestingly it is observed that the economic growth rate found to be significant only at 10% level of significance as the observed p.value $0.052 < 0.10$. And the impact of GDP growth on human development is not reported to be significant at 1% and 5% significance level. This signals that even though the economic growth can make an impact on the human development but the real benefit of the growth is not equitably distributed among the citizens of SAARC region. The R squared value of 0.51 indicates that the observed data of RE model are 51% close to the regression line. The post-hoc F-statistics result produced 75.36 for this model and the probability value of the test statistic (0.00) signifies the F-test result. Rho indicates the fraction total variation owing to the error (ϵ) term. In this model Rho is 85%.
Theoretically 5% significance level will be used for statistical acceptance for econometric data. According to Cramer and Howitt (2004); 0.05 probability level was historically an arbitrary choice and has been acceptable as a reasonable choice in most circumstances. This level can be varied if there is a reason to do so. If there is a situation where there might be very serious adverse consequences if the wrong decision were made about the hypothesis, then the significance level could be made more stringent at, say, 1%.

Further the above results agrees with the literatures of Baishya (2012) and Mustafa (2013) as they reported that economic growth is not significantly influencing the human development of Asian countries. But the result of this study is strongly contradicting with the findings of Ramesh (2014), Awad (2014), Pervaiz (2015), Carvalho (2016) and Akanbi (2017) as the above studies stated that economic growth has a significant sway on human development.

Numerous diagnostic tests are performed to validate the findings of the above model (Table 4).

Table 4: Diagnosis Tests			
Purpose	Test	Test Statistics	Probability
Normality	Jarque-Bera	8.148	*0.017
Cross Section dependence Test	Breusch Pagan LM Test	364.52	*0.00
Cross Section dependence Test	Pesaran Scaled LM test	44.96	*0.00
*Source: Data Analysis, * At 5% level of significance*			

In normality test we shall reject the null hypotheses by assuming that the residuals of the model are not normally distributed. Because the probability value of the test statistics 0.017 is much below the critical value of 0.05 at 95 percent confidence level. In cross section dependence test we shall arrive at conclusion that there exists cross section dependence among the residuals (0.00 < 0.05).

5. Recommendations and Conclusion

We have employed the panel data regression Random Effect (RE) model for examining our objective. From this study it is found that there exists a strong interconnection between economic variables like GDP, GDPPC and GDP growth on human development of SAARC nations. At the same time we can also conclude that the pace of integrating the benefit of the GDP growth on human development in SAARC region seems to be comparatively slower. This indicates that the real benefits of economic growth are not fairly distributed among the citizens. At this point we can support the research findings of Mukherjee (2010), Gopalakrishna (2012) and Gajardo (2016).This circumstances reemphasizing the need for implementing Sen's capability approach as supreme importance should be given to 'ends' rather than 'means'.

So the SAARC nations should design specific development oriented policies in order to share the outcome of economic advancement among the residents. The nations should develop a Social Accounting Matrix (SAM) for tracking and

balancing the flow of funds. The budget allocation should be specifically monitored through the windows of government, corporate, and households. For household's immediate care for the human basic needs like food, shelter, health care, education needs to be ensured with the cooperation all nations in the SAARC region. In addition to the above country specific action plans needs to be devised for the developmental needs like transportation, water, energy, sanitation, communication etc. One of the biggest challenges faced by the nation in SAARC region is corruption. The developmental initiatives are not reaching to the needy person owing to sleaze from the side of politicians and bureaucrats.

According to Ghuman and Bhullar (2010) the South-Asia as a region has been lagging behind in terms of human development. In terms of HDI ranking their position in the world did not improve during a period of 15 years. Nevertheless, they have registered a definite improvement in their respective value of HDI and narrowed down their gap with the high HDI countries. As the paper suggested effective development can be brought in two dimensions. The first path is to distributing benefit of economic growth through strong public policy interventions. The second path is to attain development through enhancing the human capabilities.

Strengthening the governance with the aid of ICT is one of the solutions for ensuring better allocation of economic resources. For instance the Government of India has brought out a concept of 'Aadhar' which can extensively link the biometric, financial and social details of all citizens. Thereby equitable distribution of resources can be ensured. In addition to this cluster wise development surveys can be undertaken for resource deployment. Decentralization of power with a strong backing of social accounting practices can also help to distribute the recourses to underprivileged or less privileged sections.

In order to enhance the human capabilities, it is suggested to have country wise specific action plans. For instance nations like Sri Lanka can direct their Skill Sector Development Program (SSDP) towards tourism and other emerging sectors; thereby the policy initiative of the government can be tied with the human development of the nation. In India the government is taking numerous action plans to boost up the contribution of manufacturing sectors towards its GDP. In this regard, the government has to reach out to the corporate to step forward and contribute their CSR funds for the purpose of expanding quality skill training, thereby benefitting the industry with skilled manpower (Tara and Kumar, 2016). The economic plans linked with skill development can really help in the uplifting the population living in undeveloped areas of the nation. Countries like Pakistan manifested in low Human Development Index, the skill development has been most neglected. A research work by Kemal (2005) suggest that adequate institutional arrangements should be made for maintaining quality and standardization of various

formal and non-formal skill development programs Pakistan. Nepal and Bhutan has started skill development projects in association with the Asian Development Bank for facilitating technical and vocational education and training. In Nepal this program is ensuring at least 40% of women and 30% of excluded group. In Maldivian economy it can be observed that the supply gap for skilled and semiskilled positions is partly caused by a mismatch of skilled local manpower. As a result the Maldives is heavily depending upon expatriate labor forces. This gap can be filled through providing high-quality skills training programs that offer attractive job prospects to the locals. Maldives can also explore the expertise of their existing labor force in fishing and marine sector.

To conclude we can say that the economic performance can be one of the factors in fuelling the human development in nations. But proper actions plans need to be devised for avoiding the concentration of development in a few regions and to ensure equitable circulation of resources.

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