

The Role of Higher Education in Economic Growth: Evidence from South Asian Countries

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Ijaz Uddin*, Zeeshan Khan**

Abstract

Education is a crucial factor for sustainable economic growth, and higher education is considered an engine for development and growth. Therefore, the main aim of this study is to examine the role of higher education in economic growth evidence from South Asian countries such as (Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka) for the period from 1990 to 2019. The panel unit root test reveals that all variables are in a mixed order of integration. The long-run Panel ARDL result shows that the tertiary education enrolment, higher education expenditure, exports, imports, and gross capital formation have a positive effect on GDP per capita. Higher education must deliver the education related to and needed by the labor market. Governments should provide funds to public universities and colleges to support their operations, research, and development. By supporting higher education, governments can promote a more skilled, innovative, and

adaptable workforce, which is essential for sustained economic growth.

Keywords: Higher education, Economic growth, south Asian countries, Panel ARDL

JEL: A10, A20, B20

1. Introduction

Education is considered an effective tool that contributes to the sustainable economic growth and development of a country. The contribution of education to society in all of its forms is crucial. In this context, public investment in elementary, secondary, and higher education is discussed in terms of how it affects economic growth (Ziberi et al., 2022). Schooling is most important for improving the human mind, and skills capabilities and gives strength to empower men in various fields of life. Education is often regarded as a vital tool for stimulating economic growth. Education enhances individual capacities and drives economic progress by fostering knowledge, skills, and creativity in society. Education provides advantages not just to the national economy but also to individuals (Aziz et al., 2008). Higher education may develop critical

* Department of Economics, Faculty of Business & Economics, Abdul Wali Khan University Mardan, Khyber Pakhtunkhwa, Pakistan

** Department of Economics, Master Student Govt AKL Post Graduate College Matta, Swat, Khyber Pakhtunkhwa, Pakistan

thinkers, innovators, and involved citizens. It promotes social mobility and a higher standard of living and may address current public policy concerns such as democracy renewal and healthcare. Higher education institutions have led research into previously incurable diseases and fostered creative economic concepts and political views that have impacted towns, regions, and nations (Chaudhary et al., 2009).

Knowledge of different fields can be obtained by creating relative benefits for the nation. It can play a prominent role in various fields economically and skillfully (Alwi et al., 2019). The greatest essential and acknowledged reality of our schooling system is to establish encouraging human resources, which has the most important explicit benefaction to maintainable economic development and social well-being, normally, the quality of instruction plays a vital role and way forward towards modern technology and progression. Moreover, the advantages of a child's education extend beyond the youngster only and his or her parents. They also help other people in society. Consequently, by fostering a stable and democratic society, my child's education benefits her well-being (Boettke, 2003). According to Mariana (2015), high education in Romania affected the growth of its economy positively. Another study concluded that higher education influences investments and savings, simultaneously (Ali et al., 2016).

The relationship between education and economic growth is positively found by previous researchers: Barro & Sala-i-Martin (2004) reported that education quality and economic growth have positive nexus. While (Uzawa, 1965; Lucas; 1988; Rebelo, 1991) found linear nexus between education and economic growth. Hamid and John (2006)

reported the role of the private sector in Pakistani higher education, with a focus on efficiency and equity. This was accomplished by a review of the ideas, attitudes, and experiences of individuals who publicly work in superior schooling institutions inside the secretive sector in various capacities.

Gender inequality in education and access to resources might hinder efforts to reduce infant mortality and fertility and expand education. Gender inequality in education leads to less able boys receiving education, resulting in lower average innate abilities among educated students compared to equal educational opportunities for both genders. Gender bias in schooling leads to weaker human capital and negatively impacts economic growth (Akram et al., 2011)

Alwi et al. (2019) examined the importance of women's education in Pakistan's economic development from 1990-2016. They found that education is a crucial part of every country's economic development as it has performed an essential function in building capacity and speeding up economic growth through skills, knowledge, and vision.

While significant progress has been achieved in boosting school enrollment and completion in South Asia, more than 50% of children live in learning poverty - unable to read and understand a simple text by age 10 - and 12.5 million children at the primary level and 16.5 million children at the lower secondary level are out of school (UNICEF, 2024).

Therefore, this study examines the role of higher education in economic growth, with evidence from South Asian countries, namely (Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka). This study contributes to the existing literature in two ways: first, it examines the role of higher education

in SAARC countries. Second, this study, taking the additional explanatory factors to influence economic growth, like higher education expenditure, exports, imports, and gross capital formation, has yet to be used by the previous researcher. Fourth, this study recommended some policy implications for achieving the SDGs goals.

The remainder of this article is organized as follows: Literature Review, Methodology and Data, Results and Discussion and Finally, Conclusion and policy recommendations.

2. Literature review

2.1. Education and economic growth relationship

Ziberi et al. (2022) worked on the impact of education on economic growth from 1917 to 2020. They employed the instrumental variable Two-Stage Least Square. According to this analysis, a one-point increase in government spending on education will have a favorable impact on North Macedonia's economic growth. The study also demonstrates that in North Macedonia, a one-point rise in unemployment and a one-point fall in employment will both enhance economic growth. These two findings, which defy theoretical and empirical techniques, demonstrate the misalignment of the labor market in North Macedonia's accurate occupation supply and demand. To determine whether there are any nonlinearities in the direction of the causation that links education to economic growth, a study by (Marquez-Ramos and Mourelle, 2019) explores the relationship between education and economic growth in the context of Spain. It implies that, under some circumstances, an increase in education may have a negative impact on GDP development.

Using time series data from 1988 to 2018 and the Cobb-Douglas production function as the economic theory for measurement, Suwandaru et al. (2021) evaluate the education sector expenditures and economic growth in the case of Indonesia and conclude that there is no significant relationship between public spending on education in the long- and short-run estimation. Using primary and secondary data, Odeleye (2012) explores the link between education spending and economic expansion. Primary school teachers' performance is evaluated using the first model. In contrast, the actual gross domestic product and current government spending on education, capital expenditures, and gross capital creation are evaluated using the second model, which employs the OLS technique. According to the model, in the example of Nigeria, a 1% increase in capital spending on education causes a 0.17% drop in GDP. On the other side, there is a negative correlation between education level and unemployment. States may build an excellent foundation and generate wealth by investing in education, according to Berger and Fisher's (2013) analysis. Expanding access to high-quality education at the same time not only enhances societal well-being but also has a favorable effect on the nation's economic development. According to Michaelowa (2000), education not only boosts people's utility potential but also causes a chain reaction that spreads across the economy due to several advantageous externalities. The authors contend that in addition to being a significant waste of public dollars, the state's expanding role in supporting and overseeing education has resulted in a considerably worsened educational system.

2.2. Determinants of economic growth

Uddin and Ullah (2024) used the robust least square estimators to examine the effect of inflation and interest rates on the economic growth of Pakistan from 1970- to 2019. They found that inflation has a positive effect on GDP while interest rate has a negative effect on GDP. Uddin and Azam (2023) used the FMOLS and DOLS estimator's evidence from 156 countries across the globe during 2002–2018. The analysis is categorized into full samples and sub-samples (i.e., low, lower, upper middle-, & high-income countries). They found that human capital has a positive effect on economic growth for all income groups and full samples.

Uddin and Rehman (2022) examined the impact of corruption, unemployment, and inflation on economic growth evidenced from developing countries from 2002 to 2018. They used the ARDL, FMOLS, and DOLS estimators. They found that corruption, unemployment, and political stability have a negative effect on GDP per capita. In contrast, inflation, governance effectiveness, and rule of law have a positive effect on GDP per capita. Saad and Uddin (2021) analyzed the impact of unemployment, money supply, financial development, FDI, population growth, and inflation on the economic growth of Pakistan. They used the ARDL estimators. The outcome showed that unemployment has a short-term, beneficial impact on Pakistan's real GDP per capita. The study also showed that the money supply significantly but favorably impacts the real GDP per capita. This analysis also establishes that real GDP per capita is significantly but adversely affected by inflation. The results showed that FDI has a considerable and favorable impact on real GDP per capita.

Ijaz (2021) analyzed the impact of inflation on economic growth in Pakistan by using the time series data from 1990 to 2015. They found that GDP growth and inflation have a significant and positive connection. This showed that a 0.27 unit rise in GDP will result in a 1% increase in the inflation rate. From 1994 to 2019, Nyiiro (2021) examined the effect of inflation on economic growth in Uganda. Time series data were employed in the study along with the OLS technique, ADF test, and Granger causality test. The findings showed that inflation has a positive and substantial impact on economic growth. The results also demonstrate that there is a long-term link between inflation and economic growth. However, no short-term relationship or association was discovered by the study. Additionally, economic growth has a significant indirect effect on inflation.

Bekele and Degu (2021) looked at how financial development affected economic growth in 25 Sub-Saharan nations between 2010 and 2017. The study made use of panel data and the GMM methodology. The results of this study demonstrate that financial development has a favorable and considerable influence on economic growth in these nations. Azam and Khan (2020) empirically looked at the threshold influence of inflation on economic growth across 27 countries. They utilized the fixed effect technique and a workable generalized least squares method to estimate the threshold impact of inflation on economic development. It consists of 16 developing nations and 11 developed countries. According to the empirical findings, there is a negative and statistically significant association between inflation and economic growth over the threshold level. The outcome also shows that inflation hinders economic growth.

Using the Auto Distributive Lag Model approach, Mohseni and Jouzaryan (2016) evaluated the impact of unemployment and inflation on economic development in Iran from 1996 to 2012. The outcome demonstrates that inflation and unemployment have a negative and considerable long-term influence on economic growth, which causes economic growth to decline. Shahid (2014) used yearly data to analyze the impact of inflation and unemployment on economic development in Pakistan from 1980 to 2010. The Augmented Dickey-Fuller test, the Phillipperron test, and the Auto Distributive Lag Model (ARDL) technique were all employed. The outcome demonstrates that inflation has a favorable impact on economic growth. The result reveals that economic growth is stagnant at both the level and the first difference. The result also shows that the first difference between unemployment and inflation is stable.

3. Methodology and data

3.1. Model specification

This study explores the role of higher education in economic growth in South Asian countries. It is based on the augmented Solow endogenous growth model (Mankiw et al., 1992).

$$Y = H(t)^\alpha K(t)^\delta \quad (1)$$

where Y , $H(t)$ and $K(t)$ represent output, stock of human capital and stock of physical capital. Moreover, Tallman & Wang, (1992) reported that human capital as a function of education

$$H(t) = E(t)^\delta \quad (2)$$

where, δ is assumed to be unity. Assuming that $K(t)$ grow at a constant and exogenous rate n , $K(t) = K(0)e^{nt}$, this function is rewritten

in the simplest form in equation 3 (Hussaini, 2020)

$$Y(t) = E(t) \quad (3)$$

To empirically establish the relationship between the macro economic variables in the equation above, the equation was transformed into a panel equation. The model used in this study has emerged from the previous research done by Maneejuk and Yamaka (2021), Ziberi et al. (2022) Suwandar et al. (2021).

$$\begin{aligned} \ln GDPPC = & \beta_0 + \beta_1 \ln TEE_{it} + \\ & + \beta_2 \ln HEE_{it} + \beta_3 \ln EXP_{it} + \\ & + \beta_4 \ln IMP_{it} + \beta_5 \ln GCP_{it} + U_{it} \end{aligned} \quad (4)$$

In equation (4) the GDPPC is the dependent variable in this model and it represents the gross domestic product per capita, TEE shows tertiary education enrolment, HEE represents Higher education expenditure, EXP shows exports, IMP represents imports, and GCP shows gross capital formation U is the stochastic or random term. ($i=1, \dots, n$) and ($t=1, \dots, t$) indicates the time period. And β_0 is the intercept, $\beta_1, \beta_2, \beta_3, \beta_4$, and β_5 are the slope coefficient of tertiary education enrolment, Higher education expenditure, exports, imports, and gross capital formation respectively. While \ln represents the natural logarithm.

3.2. Estimation procedure

3.2.1. Panel unit root tests

Before running the formal estimation procedure, the first step of any estimation procedure is to check the unit root. If we ignore the unit root and run the regression analysis, we will get biased estimates. For the panel unit root test, we employed the (Im et

al., 2003) and (Levin et al., 2002) procedures (LLC and IPS, respectively).

3.2.2. Panel ARDL Test

In this study, we use the ARDL estimator provided by Pesaran and Shin (1999) and Pesaran et al. (1999). According to Pesaran et al. (2001), the ARDL version, namely the PMG estimator, provides reliable coefficients regardless of the presence of endogeneity because it includes reaction lags and explanatory variables (Pesaran et al., 1999). The ARDL estimators used whether the series is purely I (0), or purely I (1); this study used the panel ARDL (p, q, q....., q) m model recommended by Pesaran et al. (1999, 623-624).

$$GDPPC_{it} = \sum_{j=1}^p \alpha_{ij} GDPPC_{i,t-j} + \sum_{j=0}^q \gamma_{ij} Y_{i,t-j} + \mu_i + \varepsilon_{i,t} \quad (5)$$

The subscripts i and t in equation (5) show the countires and time series. The term α_{ij} and γ_{ij} represent the slopes of the dependent variable lag and independent variables lags. The gross domestic product per capita (GDPPC) is a dependent variable. Y_{it} (k-1) is a vector of regressors (independent variables) that includes tertiary education enrolment, higher education expenditure, exports, imports, and gross capital formation;

μ_i denotes fixed effects and $\varepsilon_{i,t}$ represent the error term.

The following has been re-parameterized.

$$\begin{aligned} \Delta GDPPC_{i,t} &= \phi_i GDPPC_{i,t-1} + \beta_i Y_{it} + \\ &+ \sum_{j=1}^{p-1} \alpha_{ij} \Delta GDPPC_{i,t-j} + \\ &+ \sum_{j=0}^{q-1} \gamma_{ij} \Delta Y_{i,t-j} + \mu_i + \varepsilon_{i,t} \end{aligned} \quad (6)$$

In equation (6) ϕ_i is the coefficient of the speed of adjustment in the long-run equilibrium (Uddin & Rehman, 2023).

3.3. Sources of data

The current study has used panel data for south Asian countries. The time period used in this study is from 1990 to 2019. The related data for selected variables are received from the world development indicators (WDI).

4. Result and discussion

4.1. Descriptive Statistics

Table 1 revels that the mean value of GDPPC, TEE, HEE, EXP, IMP and GCP are 6.207026, 67.60801, 3.498913, 4.48E+10, 5.39E+10 and 9.742842 respectively. While the median of the variables GDPPC, TEE, HEE, EXP, IMP and GCP are 6.549952, 68.20357, 2.797280, 7.48E+09, 9.82E+09 and 8.624503 correspondently. Finally, The standard deviation of the variables GDPPC, TEE, HEE, EXP, IMP and GCP are 1.390947, 24.33719, 2.173067, 1.12E+11, 1.31E+11 and 13.16598 respectively.

Table 1. Descriptive Statistics

	GDPPC	TEE	HEE	EXP	IMP	GCP
Mean	6.207026	67.60801	3.498913	4.48E+10	5.39E+10	9.742842
Median	6.549952	68.20357	2.797280	7.48E+09	9.82E+09	8.624503
Std. Dev.	1.390947	24.33719	2.173067	1.12E+11	1.31E+11	13.16598

4.2. Estimates of unit root and Kao residual Cointegration test results:

Table 2 shows the estimates of LLC and IPS. The LLC estimates reveals that, GDPPC, TEE, EXP and GCP are non-stationary at level and becomes stationary after the 1st difference I(1). While HEE and IMP are stationary at level (I(0). Moreover IPS test shows that the variables GDPPC TEE, HEE and EXP are non-stationary at level and stationary after first difference. While the variables IMP

and GCP are stationary at level. We conclude that in both LLC and IPS test reveals that all variables are mixed order of integration such as I(0) or I(1). Table 3 shows the Kao residual Cointegration test results; it rejects the null hypothesis of no cointegration and confirms that there are long-run relationships among the variables.

Table 2. Unit root test

Level			First difference		
Variables	Constant	Constant + Trend		Constant	Constant + Trend
Levin Lin and Chu (LLC)					
GDPPC	2.63325	1.96233	Δ GDPPC	-7.04749 ^a	-7.12467 ^a
TEE	2.24725	-0.06296	Δ TEE	-2.31244 ^b	-2.21256 ^b
HEE	-7.25826 ^a	-8.09437 ^a	Δ HEE	-14.9285 ^a	-11.1301 ^a
EXP	-3.48634 ^a	1.09730	Δ EXP	-6.01865 ^a	-5.91286 ^a
IMP	-6.15074 ^a	-1.57544 ^a	Δ IMP	-6.15074 ^a	-5.94244 ^a
GCP	0.75906	0.66176	Δ GCP	-7.97709 ^a	-6.20172 ^a
Im, Pesaran and Shin W – Stat (IPS)					
GDPPC	1.70235	2.21921	Δ GDPPC	-3.28604 ^a	-2.99584 ^a
TEE	1.24656	0.63662	Δ TEE	-2.18445 ^a	-2.31877 ^a
HEE	-6.81321 ^a	-5.96723 ^a	Δ HEE	-10.4473 ^a	-9.01218 ^a
EXP	-0.03149	2.07764	Δ EXP	-5.49007 ^a	-5.55313 ^a
IMP	-2.92242 ^a	0.60458	Δ IMP	-6.85983 ^a	-7.11232 ^a
GCP	-3.07199 ^a	-6.04500 ^a	Δ GCP	-13.0143 ^a	-11.8078 ^a

Note: a, b & c represent the significant level at 1%, 5% and 10% level of significant.

Table 3. Kao Residual Cointegration Test

	t-Statistic	Prob.
ADF	-2.87447 ^a	0.002
Residual variance	0.001522	
HAC variance	0.003224	

Note: a represent 1% level of significance.

4.2. Panel Auto regressive distributive Lag model (PARDL)

Table 4, shows the results of PARDL. In long run tertiary education enrolment, higher education expenditure, export, import and gross capital formation are positively related to GDP per capita. The coefficient of Tertiary education enrolment is 1.344116; it means that 1% rise in Tertiary education enrolment leads to an increase of 1.34% in GDP per capita. This finding is consistent with the finding of McMahon (1998) and Horii et al. (2007). McMahon (1998) described it in terms of investment and argued that the better the level of higher education as a result of increased investment, the stronger will be its growth impact on the economy. However Horii et al (2007) argued that the rise in higher education does raise the earnings of individuals, however its long run impact on economic growth is ambiguous.

The coefficient of higher education expenditure is 3.387724; it means that one unit rise in Higher education expenditure leads to a rise of 3.38% of GDP per capita. The finding is consistent with the finding of Mercan and Sezer (2014), Churchill et al. (2015) and Bursztyn (2016). The study of Mercan and Sezer (2014) found that public expenditure on education had a robust impact on Turkey's economic growth from 1970 to 2012, while public education expenses positively impact economic growth, and health expenditure negatively affects it (Churchill et al. 2015). Moreover, the Public expenditure in education will compete with public votes for poverty recovery as a short-term program, as it appeared in Brazil (Bursztyn 2016).

The coefficient of exports and import are 11.92597 and 5.139268, it means that a 1% increase in import and exports leads to a rise of 11.92% and 5.13% of GDP per

capita. The finding is consistent with the finding of Mohsen (2015). Mohsen (2015) examines the impact of export and import on the economic growth of Syria from 1980 to 2010. They indicated that there is a positive and significant impact of export and import on GDP. Both in the long run and short run. In contrast, Bakari (2017) indicated that there is a negative impact of Exports on economic growth in the long run. They also find that in the long run, imports have a positive impact on economic growth. Finally, the coefficient of gross capital formation is 0.508207, which means that a one unit rise in GCP leads to a rise of 0.50% in GDP per capita.

Moreover table 3 shows the Short run estimates of ARDL. The ECM coefficient is -0.050020, which is negative and statistically significant at the 1% level of significance. These findings show that the model's adjustment to long-run equilibrium is around 5% each year. ECM negative and statistically significant outcomes backed with theoretical predictions. In short run estimates, where the coefficient of tertiary education enrolment, and Higher education expenditure, Export, Import and GCP are positively related to GDP per capita. The coefficient of Tertiary education enrolment is 0.073962; it means that a 1% rise in Tertiary education enrolment leads to a rise of 0.07% in GDP per capita. The coefficient of Higher education expenditure is 0.002046; it means that a one unit rise in Higher education expenditure leads to an increase of 0.0020% of GDP per capita. The coefficient of export is 0.027180; it means that a 1% rise in export leads to an increase of 0.02% of GDP per capita. The coefficient of import is 0.024962 and it means that a 1% rise in import leads to an increase of 0.02% in GDP per capita. The coefficient of GCP is 0.000289 it means that a one unit rise in gross capital formation

Table 4. Panel ARDL

Variables	Coefficients			p-value
	Long Run Equation			
TEE	1.344116	[0.4223]	{3.182695} ^a	0.0000
HEE	3.387724	[1.65556]	{2.046256} ^a	0.0010
EXP	11.92587	[5.55610]	{2.014604} ^b	0.0050
IMP	5.139268	[1.99999]	{2.569762} ^a	0.0000
GCP	0.508207	[0.22555]	{2.253189} ^a	0.0009
	Short Run Equation			
ECM	-0.050020	[0.02000]	{1.399316} ^a	0.0001
Δ(TEE)	0.073962	[0.147462]	{0.501567}	0.6168
Δ(HEE)	0.002046	[0.003639]	{0.562100}	0.5750
Δ(EXP)	0.027180	[0.014839]	{1.831686} ^c	0.0693
Δ(IMP)	0.024962	[0.010745]	{2.323071} ^b	0.0217
Δ(GCP)	0.000289	[7.52E-05]	{3.837297} ^a	0.0002
C	-0.039311	[0.058583]	{-0.671029}	0.5034

Note: the superscript a,b & c represent 1%, 5%, 10% level of significance. [] shows standard error and { } shows T-statistics

Table 5. PDHCT

Variables	GDPPC	TEE	HEE	EXP	IMP	GCP
GDPPC		{4.435} (5.02799) ^a	{4.82520} (5.61214) ^a	{2.377} (1.940) ^c	{2.281} ^a (1.796) ^c	{1.015} (-0.101)
TEE	{4.729} (5.468) ^a		{2.136} (1.579)	{0.811} (-0.407)	{3.822} (4.108) ^a	{1.707} (0.936)
HEE	{3.239} (3.233) ^a	{0.410} (-1.009)		{1.637} (0.831)	{1.988} (1.357)	{0.897} (-0.278)
EXP	{3.903} (4.230) ^a	{1.626} (0.814)	{2.063} (1.470)		{5.287} ^a (5.287) ^c	{2.532} ^a (2.173)
IMP	{5.162} (6.117) ^a	{2.51477} (2.146) ^a	{0.5399} (-0.814)	{2.294} ^a (1.816) ^a		{5.038} (5.931)
GCP	{1.148} (0.098)	{-3.734} (-7.225) ^a	{0.396} (-1.029)	{0.715} (-0.551)	{1.196} ^a (0.170)	

Note: the superscript a,b & c represent 1%, 5%, & 10% level of significance. { } in Zbar-stat, () inW-stat.

leads to a 0.002 increase percent in GDP per capita.

4.3. Pair Wise Dumitrescu Hurlin Panel Causality Test (PDHCT)

Table 5 shows the PDHCT for SAARC. There is bidirectional causality among tertiary education enrolment and GDPPC, higher education expenditure and tertiary education enrolment and GDPPC, export and GDPPC, import and GDPPC, import and tertiary education enrolment, import and export. While uni-directional causality exists between import and gross capital formation, gross capital formation and export, gross capital formation and tertiary education enrolment. Moreover non causality exists between the gross capital formation and GDPPC, HEE and tertiary education enrolment, export and tertiary education enrolment, export and HEE, import and HEE, Gross capital formation and higher education expenditure.

5. Conclusion

The goal of this study is to analyze the role of higher education in economic growth in South Asian countries. This study took a period from 1990 to 2019. The various tests econometrics techniques are employed in this study which are, unit root test, Panel ARDL test and Pairwise Dumitrescu hurling panel causality test are also used in this study. The estimates of the unit root test showed that all variables are the mixed order of integration. The Panel ARDL results showed that tertiary education enrolment, higher education expenditure, export, import and gross capital formation are positively related to GDP per capita.

This empirical study has several policy recommendations based on research findings: First, Governments should provide

funds to public universities and colleges to support their operations, research, and development. Second, the government should establish public/private partnership schools to boost tertiary education enrolment. Third, the federal and provincial governments need to spend more money on enhancing school facilities. By supporting higher education, governments can promote a more skilled, innovative, and adaptable workforce, which is essential for sustained economic growth and competitiveness in the global economy.

This study has several limitations that will give us an idea of the future direction of the research. This study only worked on selected variables like GDPPC, tertiary education enrollment, higher education expenditure, export, import, and GCP, and it ignored other macro variables. In this study, we only used the first-generation econometric technique like panel ARDL; in the presence of cross-sectional dependency, the conventional ARDL estimates are biased. Therefore, future research will use these variables and apply advanced techniques, such as the second-generation econometric techniques. Finally, this study only worked on SAARC countries and ignored the developed and developing countries.

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