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Impact of FDI on Economic Growth of SAARC Nation

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Abstract: Foreign Direct Investment (FDI) plays a vital role in economic growth of the countries. The purpose of the study is to find out the impact of FDI and Labor force participation on Economic Growth.. The present study analyses the impact of the FDI on economic growth of South Asian Association of Regional Cooperation countries by using the panel data for the period (2013-2022) extracted from World bank indicators. The log of GDP(Current US$) is selected as Dependent variable while Log of FDI, Labor Force Participation are chosen as Independent variable and Government expenditure on Education is chosen as control variable. Fixed Effect Model has been used to investigate the impact of FDI, Labor force on economic growth. It is evident from the study that LFP has positive impact and significant relationship with economic growth.

Keywords: Economic, FDI, SAARC Nation.

1. INTRODUCTION

1.1 Background

Foreign Direct Investment (FDI) has been a hot subject and a key component of globalisation in the SAARC countries since the 1990s, when most of the countries opened their economies to attract private capital in a range of economic sectors. Foreign direct investment (FDI) has the potential to impact several aspects of a nation's economy, such as output, pricing, employment, economic growth, balance of payments, and market structure. FDI bridges the technical divide between foreign and host nations by effectively transferring and accepting "best practices" across borders, hence boosting the productivity and growth of the host country (Le and Suruga, 2005; Kok and Ersoy, 2009).

Srinivasan et al. (2011) state that one of the main ways that economic growth is facilitated is via foreign direct investment (FDI). Literature claims that FDI stimulates economic growth by providing technology, money, foreign exchange, and easier access to international markets (Crespo & Fontoura, 2007).They also mentioned how FDI would encourage domestic investment and innovation, which would drive economic expansion. Thus, by bringing in

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additional capital from outside in the form of foreign direct investment (FDI), countries with low-level equilibrium—that is, low investment and weak per capita growth due to low savings rates—can break free from this trap. Investing and saving gaps are a concern in many developing nations, and foreign direct investment helps to close these gaps. FDI creates competition and boosts production in emerging nations (Kobrin, 2005; Le, and Ataullah, 2006). These advantages have prompted the development of simple and adaptable rules governing foreign direct investment in emerging nations.

According to Nunnenkamp & Spatz (2003), FDI is less volatile and provides access to cutting-edge technology and know-how in addition to finance. Foreign direct investment and economic growth, however, have given rise to a variety of divergent viewpoints that can be seen from the perspectives of the host and home countries. It is uncertain how foreign direct investment and economic growth are related in emerging economies. Whereas it is anticipated that FDI will increase company competitiveness in the host nation and shrink the export market of the home nation. However, in today's fast-paced world, capital is flowing more freely. Additionally, it is charged with altering the host nation's policies to favor foreign investors and sending back nearly the same amount of money that is invested in the local economy.The neoclassical FDI-led growth theory (Borensztein et al., 1998; De Mello, 1997; Kotrajaras et al., 2011) forms the basis of most of these research. It suggests that more FDI increases output growth via improving multifactor productivity or production efficiency. Some academics, like Moudatsou and Kyrkilis (2011), claim that there is a reverse causal relationship between output growth and FDI inflows. Conversely, some research, such as those conducted by Iwasaki and Tokunaga (2014), Herzer et al. (2008), and Carkovic and Levine (2002), finds that FDI has minimal impact on long-term economic growth. The notion of foreign direct investment (FDI)-driven growth advocates for investment liberalisation policies or export-oriented industrialization strategies for developing countries. This has significant policy consequences that are now under discussion. However, the results of reverse causality or non-effectiveness severely undermine the credibility of such development programmes implemented by low- and middle-income nations.

Theoretically, FDI provides superior managerial skills, the transfer of cutting-edge technologies, and inventive goods in addition to physical capital. As a result of FDI, the cutting-edge technology embraced by multinational corporations and governments of rich countries may diffuse to domestic businesses, producing spillover effects such as technological advantages for developing countries and boosting the economic growth of the host country.FDI may affect a receiving country's employment, output, pricing, income, economic development, exports, overall well-being, and balance of payments, according to Eradel and Tatoglu (2002). More open FDI regimes led to the adoption of deregulatory policies by many countries, which emphasised reliance on market forces in both local and international economies.

1.2 Research Question

What effect do labour force participation and foreign direct investment have on SAARC's economic growth?

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1.3 Research Goal

This study aims to quantify the effects of labour force participation (LFP) and foreign direct investment (FDI) on economic growth in the SAARC nations.

1.4 Study's Scope

The aim of this article is to ascertain how labour force participation and foreign direct investment affect the economic growth of SAARC nations. This work makes a substantial contribution to the field of economic growth studies in a variety of ways. One significant capital inflow variable is included in this study so that its impact on economic growth may be examined. The most recent econometric methods, such as the panel regression model and panel root test, are being used in this work. The research improves the way that dependent and independent variables relate to one another in economic analysis.

1.5 Study Limitations

The study's primary shortcomings are as follows:

- Only Three variables i.e Foreign Direct Investment (FDI), Labor force Participation(LFP) and Government Expenditure on Education(GEE) have been considered in the study.
- The study will be performed for Ten years of data observation for each SAARC Nations which may not be justified for the overall finding.

2. RELATED WORK

Using a panel of 42 sub-Saharan African (SSA) countries, Babatunde (2011) examines the relationship between trade openness, infrastructure, foreign direct investment (FDI), and economic development over the years 1980–2003. His findings indicate that two factors that affect foreign direct investment (FDI) are trade openness and GDP per capita. Infrastructure and trade openness work together to somewhat increase FDI inflows, which have a significant and positive effect on growth.

Bhavan et al. (2011) use panel data and the Arellano-Bond dynamic panel system technique of moment estimator to examine the factors influencing foreign direct investment (FDI) and its growth effect in four South Asian countries between 1995 and 2008. According to their findings, growth rate and foreign direct investment (FDI) are substantially and favourably correlated in South Asian nations.

The relationship between foreign direct investment (FDI) and Malaysia's economic development from 1980 to 2010 is examined by Chen and Zulkifli (2012). Their findings using a vector error-correction model (VECM) show that there is long-term bidirectional causality as well as a positive long-run association between outbound FDI and growth.

Nellis and Papa Georgiadis (2016) examine the conclusion of FDI and its evident implementation impact on economic growth using panel data from 42 developing countries between 1998 and 2011. The investigator used GMM, OLS, and FE as study tools. GDP per capita is the dependent variable in the search, whereas the development of secure capital, FDI, research and growth, human capital, inflation rates, and governmental strength are the independent elements. The effects of FDI, robust policy, human capital, research, and the

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expansion and development of fixed capital have a positive impact on GDP as long as the rate of inflation has a negative impact.

According to Vita and Kyaw's (2008) analysis of 32 developing nations, local money growth is the main "pull factor" for portfolio flows, but domestic productivity development is the primary predictor of foreign direct investment flows to developing nations.

Behera and Parida (2010) examined the factors that influence foreign direct investment (FDI) and the way it spreads throughout Indian manufacturing sectors. They discovered the long-term association between endogenous factors and explanatory variables using Pedroni cointegration tests, which increased the amount of technological spillovers throughout Indian manufacturing industries. The analysis discovered that the two main factors influencing FDI inflows into the Indian manufacturing sectors were labour productivity and market size. The findings of Asiedu's (2005) study, which indicated that big markets and natural resources were the primary drivers of FDI inflows into the economy, further corroborate this. Inflation, infrastructure, skilled labour, trade openness, corruption, political stability, and a dependable judicial system are other significant influences on FDI inflows.

Lian and Ma (2013) use time-series data, co-integration, and error-correction approaches to examine the causal link between foreign direct investment (FDI) and economic growth in the western area of China during the years 1986–2010. According to their findings, there is no Granger-cause economic growth associated with inbound FDI flow, and there is also no discernible relationship between economic growth and FDI inflows.

Using data from 1985 to 2009, Chaudhary and Mahmood (2013) examine the connection between FDI and GDP in China. As a research tool, the ARDL integration approach is used. Four variables make up the research: FDI, gross fixed capital formation, consumer costs, and GDP, which is the dependent variable. Each independent variable has a positive effect on the dependent variables.

The influence of FDI variables on FDI inflows into Nepal as well as the link between FDI and GDP were studied by Bista (2005). The finding indicates a positive association between GDP and FDI using the Cobb Duglas Production model and a theoretical growth model.

Majagaiya (2010) found that there is no significant correlation between foreign direct investment (FDI) and Nepal's GDP growth rate in their study, "A Time Series Analysis of Foreign Direct Investment and Economic Growth: A Case Study of Nepal."

Conceptual Framework and Hypothesis

To determine the relationship between the variables under research, certain theoretical underpinnings on the relationship between FDI (foreign direct investment) and output growth are necessary. First, the following is said by supporters of the FDI-led growth theory. Borensztein et al. (1998) claim that by raising total factor productivity or productive efficiency, FDI inflows assist the host nation's production function in incorporating state-of-the-art new technologies. De Mello (1997) argues that increased foreign direct investment (FDI) promotes long-term economic growth in the host economy by enhancing productivity, adopting new and cutting-edge technologies, transferring knowledge through labour training and skill acquisition (human capital augmentation), and accumulating capital. The dual role of FDI as a mover of the production frontier in the host nation and a changer of production efficiency is discussed by (Yao and Wei, 2007). According to Gera, Gu, and Lee (1999),

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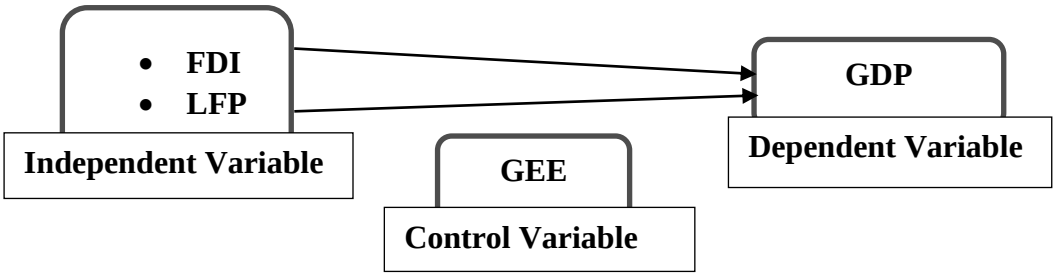
there is a bias in the international research and development spillover towards the use of domestic capital and away from the use of labour, intermediate products, and physical capital. Lim (2001) looked at the factors that influence FDI and how it relates to GDP. The findings imply that FDI and GDP are not causally related.

A far more complex picture of the female labour force is presented by Klasen & Pieters (2012), who look at the factors that influence female labour force participation in urban India. Female labour force involvement at lower levels of education appears to be driven more by necessity than by economic prospects, according to recent patterns in employment and pay. The research of how Pakistan's labour force participation rate affects economic growth looked at the strong and negative correlation between the rate of labour force participation and economic performance (Shahid, 2014).

Similarly, Zhang & Zhang (2005) examine the impact of life expectancy on saving, education, fertility, and economic growth and discover a strong and positive correlation between school enrollment and national economic performance.

Conceptual Framework:



Derivation of Variable:

Independent Variable

FDI Inflows: Total FDI inflows, BOP(Current US$) for each year in the SAARC region and its member states for the period of 2013-2022 are used as independent variable for this research to identify its impact on economic growth of SAARC.

Labour Force Participation: The whole percentage of the population aged 15 to 64 (based on a modelled ILO estimate) for the years 2013 to 2022 is utilised as an independent variable in this study to determine the effect of labour force participation on SAARC's economic growth.

Government Expenditure on Education: Total government spending on education expressed as a percentage of GDP. The total amount of current, capital, and transfer spending by the government on education is shown as a percentage of GDP. It includes spending that is paid for by government transfers from outside sources. In order to determine its influence on the economic growth of SAARC, general government—which is often defined as local, regional, and national governments—was employed as a control variable in this study from 2013 to 2022.

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Dependent Variable
GDP: The GDP (current US$) is consider as a proxy of economic growth.

Research Hypothesis
H1: There is a positive significant relationship between FDI and GDP
H2: There is a positive significant relationship between LFP and GDP

3. RESEARCH METHODS

The secondary data used in the study were gathered from the World Bank website's statistics. Data on GDP, labour force participation rate, foreign direct investment, and government spending on education were gathered for the SAARC nations. In the study, panel data analysis has been done. This study uses a causal comparative research approach to examine the link between independent factors and economic development. More precisely, the study looks at how the log of foreign direct investment and the labour force participation rate affect economic development. The information was gathered between 2013 and 2022. Additionally, table 1 lists the SAARC nations that were chosen for the study together with the number of observations and study time.

Table 1: Study Duration, Number of Observations Used, and Number of SAARC Nations Chosen For the Investigation

S.N.	Particulars	Time Period	Observation
1)	Nepal	2013-2022	10
2)	India	2013-2022	10
3)	Srilanka	2013-2022	10
4)	Pakistan	2013-2022	10
5)	Maldives	2013-2022	10
6)	Bhutan	2013-2022	10
7)	Afghanistan	2013-2022	10

Table 2: The Independent Variables Consists of Following Variables

S.N.	Independent Variables	Description
1	Log FDI=Log of net inflows,BOP(Current US$)	This data, which is expressed in current US dollars, displays net inflows (new investment inflows less disinvestment) from foreign investors into the reporting economy.
2	LFP=Labor Force Participation	The percentage of the 15–64 age group that is economically active is known as the labour force participation rate. This group consists of all individuals who provide labour for the production of goods and services during a certain time frame

We examine the connection between Economic Growth (GDP) with FDI and LFP with the following model.

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$LNGDP_{i,t} = \beta_0+\beta_1 LNFDI_{i,t}+\beta_2 LFP_{i,t}+\beta_3\ GEE+\ \varepsilon_{i,t}$……(i)
where, the time period is denoted by t = 1,2,...,10, and the selected SAARC nations in the panel is represented by i = 1,2, 4, 5..., 8. The parameters β1, β2, and β3 indicate the long-run elasticity estimates of economic growth with respect to FDI, LFP, and GEE, respectively. The variables' natural logarithm is represented by LN, while the white noise error term is symbolised by ε.
LNGDP= Log of Gross Domestic Product (Current US$)
LNFDI= Log of net inflow (BOP, Current US$)
LFP= Participation in the Labour Force (percentage of people aged 15 to 64)
GEE= Government Expenditure on Education (% of GDP)

4. ANALYSIS AND RESULT

4.1 Descriptive Statistics

Descriptive statistics for particular variables are examined in this section. The data's behavior in relation to the central tendency is the main topic of this section. The dependent and independent variables' descriptive statistics are summarized in the table below. By displaying the statistical mean, median, maximum, and lowest values, the properties of the data variables are demonstrated.
The dependent and independent variable's descriptive statistics are shown in Table 3.
It shows that the main independent variable LNFDI with a mean value of 8.68 and range from 6.42 to 10.8 while the other independent variable LFP shows the mean value of 54.9 and range from 41.82 to 67.41.Control variable GEE has mean value of 3.56 and range from 1.62 to 7.39 and the dependent variable LNGDP has mean value of 10.75 and range from 9.24 to 12.52.

Table 3: Descriptive statistics for the study's dependent and independent variable

Variable	Mean	Median	Min	Max	SD	Jarque-Bera	Prob.	Observation
LNGDP	10.75	10.74	9.24	12.52	0.96	3.43	0.179	80
LNFDI	8.68	8.79	6.42	10.8	1.089	1.19	0.55	80
LFP	54.9	55.59	41.82	67.41	7.40	3.34	0.188	80
GEE	3.56	3.41	1.62	7.39	1.38	12.26	0.002	80

Note: calculation are based on data from website of World Bank

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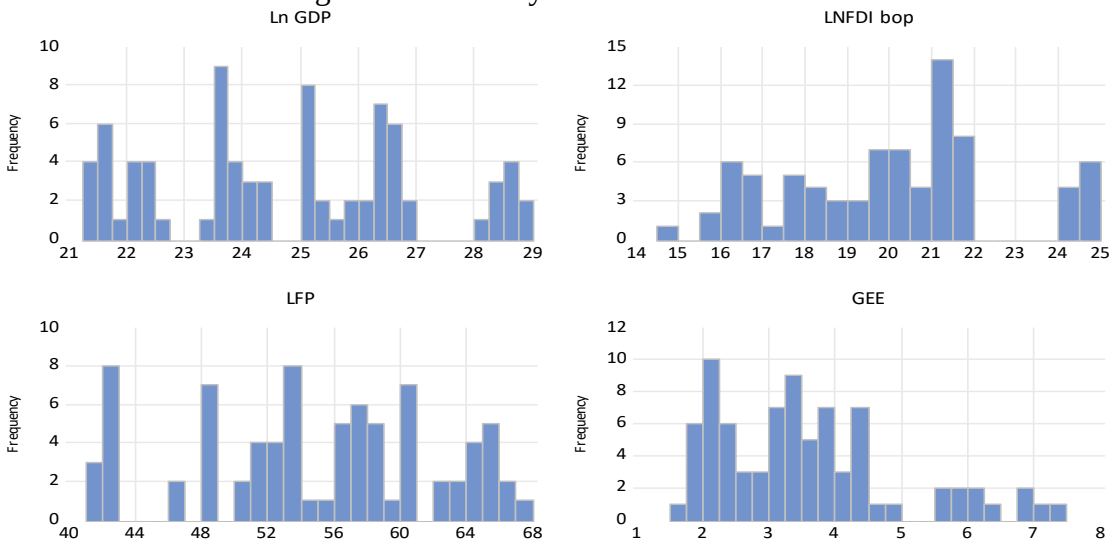
4.2 Normality Test of Variable

Figure No.1 shows the distribution of data of individual variable. The graph depicts normality of individual variable except the control variable i.e GEE which is further validated by statistical test.

Figure 1: Normality test of each variables



Note: Calculation are based on data from website of world bank

4.3 Correlation Matrix

The correlation matrix is used to calculate the connection and assess the strength of the linear link between two variables.

Table 4: Variable Correlation Matrix

Correlation Probability	LN GDP	LN FDI	LFP	GEE
LN GDP	1			
LN FDI	0.67 (0.00)	1		
LFP	-0.305 (0.0059)	-0.0434 (0.7017)	1	
GEE	-0.4993 (0.00)	-0.4095 (0.0002)	0.3233 (0.0034)	1

Note: Calculation are based on data from website of World Bank

The correlation matrix and multi-co linearity diagnostics for FDI, LFP, GEE, and economic growth data are displayed in Table 4. 0.67 is the greatest correlation value. The outcome suggests that there is a positive correlation between GDP and LN FDI. Similarly, there is a negative correlation between GDP and the LFP and GEE. Since the values of all the correlation matrix variables are less than 0.8, multi-co linearity is not present. As a result, the regression analysis makes good use of the variable coefficients.

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4.4 Validity test of POLs

Table 5 shows the results of POLs. Before we interpret the result, the validity of the test is assured using the Breusch Pagan LM test with the following hypothesis.
H0: Compared to fixed and random effect models, the pool (OLS MODEL) is more suitable.
P-value (0.000), which is less than 5%, is provided by the test. This shows that the fixed or random effect model has been accepted and the null hypothesis has been rejected.

Table 5: Validity test for POLs

	Cross-section	Time	Both
Breusch-Pagan	226.66	2.184	228.844
	(0.000)	(0.139)	(0.000)

Note: Number in the parenthesis are the P-value

4.5 Random-Effect Model

Table 6 displays the random effect model's outcome. The Hausmen test is used to assess the model's validity and decide which approach should be used when choosing between a fixed effect model and a random effect model. Random effect model is more appropriate than fixed effect, according to the null hypothesis. The null hypothesis is rejected since the P-value is less than 5%. The fixed effect model has therefore been used.

Table 6 Hausman Test

Test Summary	Chi-Square Statistic	Chi-Square d.f	Probability
Cross-sectional random	27.154	3	0.000

Note: Calculation are based on data from website of World Bank

4.6 Fixed-Effect Model

The fixed effect model's findings are displayed in Table 7. The outcome indicates that FDI is negligible and has a poor correlation with GDP. On the other hand, LFP and GDP have a large positive association. A 1% increase in labour force participation will result in a 0.0153% rise in GDP. There is a positive but negligible correlation between GDP and the control measure GEE. With an R2 of 0.993, the independent variable accounts for 99.3% of the variation in the dependent variable. The D-W statistic, at 1.576, is higher than the R-square and suggests that there is no autocorrelation

Table 7: Fixed effect model with LNGDP

Variables	Coefficient	T-statics	Prob.
LOG_FDI	-0.0019	-0.039	0.9684
LFP	0.0353	2.173	0.0332
GEE	0.099	1.7985	0.0765
C	22.50	21.023	0.000
R-square	0.9870		
Adj.R square	0.9823		

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Prob.	0.000		
D-W Stat	1.576		

Note: Calculation are based on data from website of World Bank

5. CONCLUSION

The effect of foreign direct investment on the economic expansion of the SAARC region's nations has been investigated in this study. For this study, a descriptive and causal research strategy has been used. Eight SAARC member nations' panel data for the ten-year period (2013–2022) was gathered from World Bank indicators. We employed the panel ordinary least square approach to determine the relationship between the dependent and independent variables. There are two forms of OLS: random effect and fixed effect. Utilising the Hausman test, the proper approach is determined. Data on fixed effect should be run, according to the Hausman test. The fixed effect finding demonstrates that labour force participation and GDP have a positive and substantial association. Naz et al. (2015), Ali et al. (2014), Mustafa and Santhira segaram (2013), Ullah et al. (2014), and Falki (2009) all corroborate these results. Moran (1998) consistently found a negative impact and a negligible connection between FDI and GDP. When foreign direct investment (FDI) enters markets, it has a positive impact on economic growth; but, when FDI enters protected industries, it has a negative impact (Encarnation and Wells, 1986).

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