

Does the Foreign Direct Investment Enhance Bangladeshi Economy? An Empirical Study

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Abstract

Like most developing countries, Bangladesh considers foreign direct investment (FDI) as a critical element of economic development. Numerous studies showed that the FDI significantly impacts economic growth due to the technological transfer and innovative capability that enters the recipient country. On the other hand, some other studies did not find any significant impact of FDI on economic growth. The purpose of this study is to determine whether the FDI or other factors, including human capital, infrastructure, and trade openness, impact the economic growth in Bangladesh. Using an ordinary least square (OLS) regression model, 35-year time series data of the variables were analyzed to investigate the variables that impact economic growth in Bangladesh. The study results depict that FDI has no significant impact on the economy of Bangladesh. In contrast, human capital, infrastructure, and trade openness significantly influence the Bangladesh economy. The study findings are expected to benefit the researchers, government agencies, and the decision-makers of multinational companies.

Keywords: foreign direct investment, economic growth, Bangladesh, human capital, ordinary least square (OLS)

1. Introduction

In a developing nation like Bangladesh, where private and public domestic savings are deficient, foreign direct investment (FDI) is one of the most critical factors enhancing the country's economic growth. For the host country, in most cases, the foreign direct investment provides a certain level of economic stimulation, increases the employment sector, and outpours management expertise and technological know-how (Al-Iriani, 2007). Many developing countries are now focusing on the FDI sector as there are possibilities that FDI positively influences economic growth. Improvement of capital stock, creation of new job opportunities, and ease of transfer in technology is possible by FDI, which eventually leads to simulating growth for host countries (Rahman, 2015). At the same time, rapid growth in GDP eventually paves the way for investment opportunities and causes more significant inflows of FDI (Abbes, Mostéfa, Seghir, & Zakarya, 2015). Therefore, host countries try to gain FDI from countries that are developed industrially and technologically as it helps in the industrialization of the host countries, accelerates the overall economic growth, and increases the level of employment (Reza, Fan, Reza, & Wang, 2018).

The relationship between FDI and the economic growth of different nations has been found as positive in both the short and long term, significant, significant if certain conditions are met, less significant, and even sometimes negative (Tvaronavičiene & Grybaite, 2007; Zaman, Shah, Khan, & Ahmad, 2012; Tabassum & Ahmed, 2014; Rahman, 2015; Khurana, 2010; Mittal & Chowdhary, 2010). FDI is considered more important now as it is linked with technology transfer and creates a market network with an overseas country which eventually results in production efficiency (Reza et al., 2018). FDI accelerates economic growth using various channels, the capital formation being one of them. Improvement of the capital stock of an economy, ownership of new types of machinery, and improvement of the transportation sector are included in the capital formation (Parajuli, 2021). Investors interested in investing in Bangladesh are scattered all around the globe. FDI plays a vital role by gathering these international financing in one place (Rahman & Ahsan, 2013). It has to be understood that the improvement of FDI inflows depends on the overall development of the financial sector within the host country (Chee & Nair, 2010). To gain the benefits of FDI, the pre-condition is to develop the host country's financial system and overall financial development (Siddiquee & Rahman, 2021).

There have been numerous studies related to FDI and economic growth in Bangladesh. Some of these studies are conducted to find the significant relationship between FDI and GDP growth. Some focus on whether FDI exerts a positive or negative impact on the economic growth of any country. In the studies by Reza et al. (2018), Ali, Rukunujjaman, and Alam (2015), and Sarker and Khan (2020) found a positive relationship between FDI and GDP growth in Bangladesh, while Rahman (2015) found a negative relationship between them. On the other hand, the studies by Adhikary (2011) and Tabassum and Ahmed (2014) did not find any significant relationship between FDI and the economic growth of Bangladesh. Nevertheless, during the last decade, the socioeconomic conditions of Bangladesh were considerably changed while the government took significant initiatives to create a favorable environment for FDI, resulting in a noticeable increase in FDI inflows. Moreover, the COVID-19 pandemic affected the worldwide where Bangladesh was not exceptional. Therefore, many studies on Bangladesh's economy focused on FDI and economic growth before the COVID-19 pandemic. However, to the author's best knowledge, no recent study was conducted investigating the impact of FDI and economic growth, including the post-COVID-19 pandemic. Therefore, this study aims to identify the impact of FDI on Bangladesh's economy and economic growth. The study attempts to answer the following research questions:

RQ1: Is there any impact of FDI on the economic growth in Bangladesh?

RQ2: What are the other factors that affect economic growth in Bangladesh?

In the ordinary least square (OLS) regression analysis of previous 35-year (1986-2020) time series data collected from the world economic indicators database on the official website of the World Bank, the study found mixed results. Interestingly, the study results found no significant impact of FDI on the economic growth of Bangladesh. On the other hand, human capital, infrastructure development, and trade openness significantly impact the economy of Bangladesh. Therefore, the research results are expected to benefit the researchers, government agencies, and the decision-makers of multinational companies.

After the introduction section, the remaining paper is structured in the following manner: the second part consists of the overview of FDI inflows in the economy of Bangladesh. The third part consists of the literature review. The fourth part discusses the methodology consisting of data, variables, hypothesis development, and regression models. Part five illustrates the data analysis findings of the study. Sixth part of the paper provides discussion of the study results. The final part consists of the conclusion, limitations, and future research possibilities.

2. Overview of FDI Inflows in Bangladesh

Major industries, banks, and organizations were nationalized after the liberation war of Bangladesh in 1971 to control the national economy because the war-torn country was suffering financially, and all the industries were underwhelming with losses. In the 1970s, the country needed an FDI policy to attract foreign investors. However, eventually, the continuous economic downturn in the country induced the government to encourage FDI inflows into the country (Manzoor & Chowdhury, 2016). In 1980, the government introduced Foreign Private Investment Act to promote foreign investment in the country, ensuring protection for foreign investors. As a result, the trend of FDI inflows in Bangladesh has been upward since the 1980s. From 1977 to 2010, US \$892.9 million of FDI inflow in Bangladesh was recorded (Hossain & Hossain, 2011). Due to the cheap human labor available in the country, tax incentives, and other facilities, foreign investors are considering Bangladesh as a potential investment opportunity (Islam, 2014). In 1986 Bangladesh recorded \$2.44 million. It increased to \$3.21 million in 1987. In 1989, the FDI decreased to \$0.25 million due to political unrest all over the country. Also, a certain degree of hesitation and unwillingness of foreign investors can be seen when a military regime rules a country. From 1992 the FDI inflows gradually increased democratic government was formed. In the country, the total sum of FDI was not noteworthy until 1996. In 1997 the FDI inflows increased to 139.38, and in 1998 the FDI inflows increased to \$190.06 million. The inflow of FDI in the consecutive years was upward. In 2008 and 2010, the FDI inflow was consecutive \$1328.42 million and \$1232.26 million. Due to the recession worldwide in 2009, the inflow of FDI decreased significantly to \$901.29 million.

Table 1. FDI Inflows in Bangladesh Between 1972 and 2016 (In Million US \$)

Year	FDI	Year	FDI	Year	FDI	Year	FDI	Year	FDI
1986	2.44	1993	14.05	2000	280.38	2007	651.03	2014	2539.19
1987	3.21	1994	11.15	2001	78.53	2008	1328.42	2015	2831.15
1988	1.84	1995	1.90	2002	52.30	2009	901.29	2016	2332.72

1989	0.25	1996	13.53	2003	268.29	2010	1232.26	2017	1810.40
1990	3.24	1997	139.38	2004	448.91	2011	1264.73	2018	2421.63
1991	1.39	1998	190.06	2005	760.50	2012	1584.40	2019	1908.05
1992	3.72	1999	179.66	2006	456.52	2013	2602.96	2020	1525.31

Source: World Development Indicators 2022

In 2010, the world economy started to bounce back gradually from the effect of the recession, as did Bangladesh's economy. In 2010 the total FDI inflow was \$1232 million. In 2015 the total inflow was recorded to be \$2831.15 million, and in 2020 it was decreased to \$1525 million as it was directly impacted due to the pandemic, which affected the entire world economy adversely.

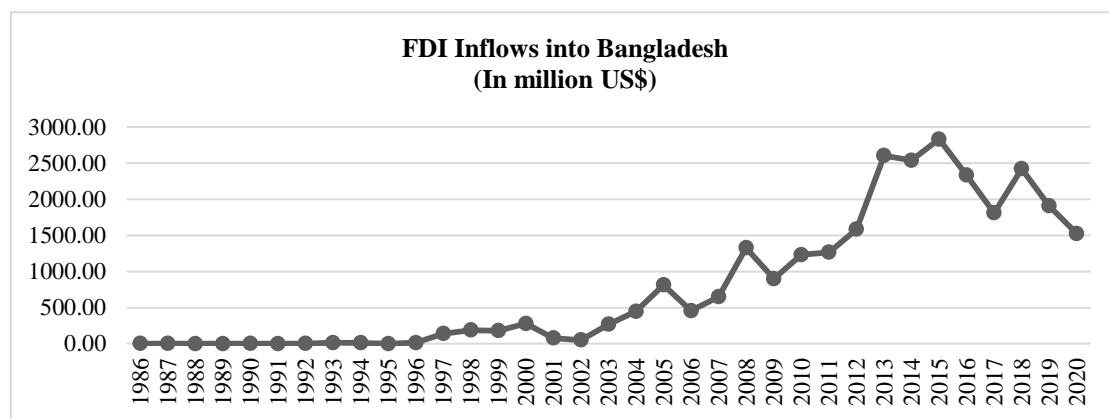


Figure 1. FDI Inflows into Bangladesh

Source: World Development Indicators 2022

FDI inflows are increased and encouraged in sectors like agriculture and fishing, power, gas, petroleum, construction, manufacturing, transportation, storage and communication, trade and commerce, services, and other sectors apart from restricted sectors (Abdin, 2015). During the last five years, the nine sectors attracting the highest FDI into Bangladesh were telecommunication, gas and petroleum, power, textile and wearing, banking, food products, trading, construction, computer, software, and IT. Also, during the same years, the FDI inflows in Bangladesh came from the USA, the People's Republic of China, Singapore, the UK, the Republic of Korea, Hongkong, the Netherlands, Norway, India, Japan, and UAE (Bangladesh Bank, 2021). The investment policy of Bangladesh provides impartial and unbiased treatment towards domestic and foreign investors, encouraging foreign investors to invest in various ventures.

3. Literature Review

3.1 Theoretical Construct

FDI is an investment of a firm or an individual in business located in a country outside their home country. FDI can be defined as a package of assets, applied sciences, governance, and entrepreneurship that provides a firm authority to produce and sell goods or services in countries outside their home countries (Almfraji & Almsafir, 2014). FDI can consist of a factory in a foreign country, the purchase of an existing company, or investment into companies in foreign markets. Typically, FDI can be divided into vertical investment and horizontal investment. A vertical foreign direct investment occurs if a multinational firm does the production process internationally, attempting to locate each production stage in a country where the cost is convenient (Nation, 2001). On the other hand, a horizontal foreign direct investment is when multinational corporations produce goods, services, and commodities that are the same in multiple countries.

3.2 Empirical Review

Several studies have been conducted on the connection between FDI and economic growth. Among these studies, some explain the relationship between FDI and economic growth, and some find the casualties between these two variables (Wai Mun, Kai Lin, & Yee Kar Man, 2008).

The research by Pandya and Sisombat (2017) on the economy of Ghana has shown that FDI has been playing a substantial role in the economy of Ghana, and there is a significant positive relationship between FDI and economic growth. Also, the adequacy of human capital, the development of financial markets, and how domestic and foreign investment complements each other are the influencing factors in determining the relationship between FDI and economic growth (Almfraji & Almsafir, 2014). The research of Almfraji and Almsafir (2014) has found a significant relationship between FDI and economic growth though in some cases negative or null relationship can be seen. A study in Romania shows that the country's economic growth is influenced by the role of FDI (Nistor, 2014). The development of the market economy and the competitiveness in the economic sector is also affected by the role and significance of FDI. In 2012, Koojaroenprasit (2012) established through his paper that FDI positively impacts South Korea's economic growth alongside human capital, export, and employment. Similarly, another research using data from 91 countries by Azman-Saini, Law, & Ahmad, (2010) has shown that the positive impact of FDI on the economic growth of a country can be visible only after the development of the financial market crosses at a certain level. The research suggested that the policies directed towards increasing the FDI should be applied when policies aimed at increasing financial market development are applied. Acaravci and Ozturk (2012) examined both short-run and long-run casualty between FDI and economic growth from the data of ten EU countries. They found a positive relationship between the two variables. To attract foreign investors and develop the FDI inflows to host countries, governments need to focus on Free Trade Zones, tax incentives, improvement in human capital, and overall infrastructural development within the country. On the other hand, a study by Mohammad and Zulkornain (2009) shows that FDI and GDP in Malaysia do not have a long-run relationship. Though one variable's performance contributes to the stability of other variables, in the economy of Malaysia, the impact of FDI on economic growth is more indirect, based on the study of Mohammad and Zulkornain (2009). Resemblant to this research, another study done by Chee and Nair (2010) on 44 countries of Asia and Oceania has concluded that when FDI is on its own, it contributes to economic growth. At the same time, the expansion of the financial sector further increases the influence (positive) of FDI on economic growth. The impact of FDI and financial sector development on the economic growth of these 44 countries are found to be complementary (Chee & Nair, 2010). Research based on World Bank Dataset and International Monetary Fund's Data by Levine and Carkovic (2002) shows that the external component of FDI does not independently influence economic growth. The study concludes that on a macroeconomic level, FDI has a rather insignificant role in the development of the economic growth of the country. Several authors argue that FDI brings in important capital and promotes private investments. Therefore, increased employment opportunities, technological transfers, and exports are associated with FDI. The study of Tvaronavičiene and Grybaite (2007) on the Lithuanian economy sheds light on the fact that the country's FDI exerts a positive impact on the country's economic growth, and there can be seen as a strong positive equation between FDI and economic growth. Research studies on Pakistan's economy by Zaman et al. (2012) have presented evidence that FDI has been significantly positively influencing the nation's economic growth in the long run. However, due to the low quality of human capital in Pakistan, FDI's direct impact on economic growth is negative when human capital is involved. This research concludes that if the government wants FDI to contribute to economic growth, it must focus on the quality of human resources as well as the development of footing in infrastructure. Research done through time series data from 1997 to 2014 has confirmed that there has been a positive long-run relationship between FDI, economic growth, and economic trade (Hussain & Haque, 2016). Therefore, the researcher of this study has advised that the government of Bangladesh should take advantage of the FDI opportunities available to the country. Several studies on Bangladesh highlight the role of FDI in the country's economy. Similar research conducted by Rahman and Ahsan (2013) has shown that FDI improves a country's infrastructure development, employment generation, capacity development, managerial capability, and enhancement of labor force skills. The capital gap of Bangladesh is considered to be filled through FDI. Among these several studies done on Bangladesh's economy, some complement each other, while some are even contradictory. One such study by Tabassum and Ahmed (2014) shows that the economic growth of Bangladesh is positively affected by domestic investment, where FDI's influence is less significant. It is noted that when a host country does not have advanced technology or technological know-how, FDI investment can bring these through developed investor countries and accelerate productivity growth (Parajuli, 2021). On the other hand, a study by Adhikary (2011) concludes that there is a positive linkage between FDI, trade openness, capital formation, and economic growth. This study suggests that if Bangladesh can formulate FDI-led policies and at

the same time ensure higher capital formulation, Bangladesh's economic growth can be significantly improved. Another study based on time series data from fifteen years by Rahman (2015) concluded that the improvement of FDI does not necessarily improve economic growth. Therefore, the relationship between FDI and economic growth is negative when FDI is connected with the inflation rate increase and negative trade balance within the country.

4. Methodology

4.1 Data, Variables, and Hypothesis Development

This study is based on the secondary data sources. The dependent variables in this study include GDP and GDP per capita (GDPPC) as Economic Growth. On the other hand, independent variables are foreign direct investment (LnFDI), trade openness, infrastructure (INFRA), and human capital (LnHCAP). 35-year time series data from 1986 to 2020 of variables were collected from the World Economic Indicators database in the official website of World Bank.

4.1.1 Foreign Direct Investment

Many studies showed both short-term and long-term relationship between FDI and economic growth of a country. When FDI is on its own it is seen to be contributing to the economic growth of a country (Chee & Nair, 2010). In the studies by Pandya and Sisombat (2017), Nistor (2014), Koojaroenprasit (2012), Azman-Saini et al. (2010), Acaravci and Ozturk (2012), Parajuli (2021) found a positive relationship between FDI and country's economic growth. However, Almfraji and Almsafir (2014), and Rahman (2015) found there is no relationship between FDI and economic growth.

Hypothesis 1: Foreign direct investment has a significant impact on the economic growth of Bangladesh.

4.1.2 Human Capital

Human capital can be explained as the combination of all the skills and experiences a worker possesses. Human capital includes a worker's education, technical and technological knowledge, punctuality, problem solving skill, people management ability, communication capability, overall mental and physical wellbeing and experience. The innovative capacity of human capital, qualification, experience and skill of employees increases the productivity which in turn positively effects the economic growth of a country (Curea & Ciora, 2013).

Hypothesis 2: Human capital has a significant impact on the economic growth of Bangladesh.

4.1.3 Infrastructure

Infrastructure consists of physical and institutional system including roads, sea and airports, power and energy, waste management and telecommunication system of a country. The research done by Wekesa, Wawire, and Kosimbei (2016) show that the number of telephones per thousand in habitants is a standard management for the development of infrastructure. When the infrastructure of a country is good it exerts a positive influence on education and good health, generates a positive influence on education and good health, creates additional production capacity all of which eventually adds on to the economic growth of a country (Palei, 2015).

Hypothesis 3: The infrastructure has a significant impact on the economic growth of Bangladesh.

4.1.4 Trade Openness

Trade-Openness can be described as the ratio of the sum of exports and imports of the countries to the national income. Evidence from different studies show that there is a positive impact of trade-openness on the economic growth of a country (Keho, 2017). According to literature there's a spillover effect due to trade openness which contributes to the overall economic growth of a country (Hye, Wizarat, Hahida, & Lau, 2016). Human capital accumulation is seen in the developing country because of trade openness with the developing country which in the long run accelerated the economic growth (Hye et al., 2016).

Hypothesis 4: Trade openness has a significant impact on the economic growth of Bangladesh.

4.2 Regression Models and Data Analysis

The study used Ordinary Least Square (OLS) regression models to investigate the impact of FDI, trade openness, infrastructure, and human capital on the economic growth of Bangladesh proxied by GDP and GDP per capita. The 35-year data set was organized in such a way that allowed us to observe the behavior of Bangladesh economy and to analyze the time series data across time. In this study, GDP and GDP per capita were used as the dependent variables. Therefore, two OLS regression models were used where Model 1 consists GDP as the dependent variable and Model 2 consists GDP per capita as dependent variable. The independent variables

including FDI, trade openness, infrastructure, and human capital are common variables for both Model 1 and Model 2.

The models can be formed the following ways:

Model 1:

$$\text{LnGDP}_t = \alpha + \beta_1 \text{LnFDI}_t + \beta_2 \text{LnOPENNESS}_t + \beta_3 \text{LnINFRA}_t + \beta_4 \text{LnHCAP}_t + \mu_t \quad (1)$$

Model 2:

$$\text{GDPPC}_t = \alpha + \beta_1 \text{LnFDI}_t + \beta_2 \text{LnOPENNESS}_t + \beta_3 \text{LnINFRA}_t + \beta_4 \text{LnHCAP}_t + \mu_t \quad (2)$$

Where α is constant term, β is the coefficient of independent variable, LnGDP is the natural logarithm of total Gross Domestic Product, LnFDI is the natural logarithm of total FDI, LnOPENNESS is the natural logarithm total import and export in the economy, LnHCAP is the natural logarithm of total human capital, and LnINFRA indicates the natural logarithm of total infrastructure of Bangladesh in the year t ; and μ_t denotes the error term.

Data was presented in the descriptive statistics and the correlations among the variables were presented in the correlation matrix. Then the variance inflation factors were calculated to test the multicollinearity among the independent variables. After reducing the multicollinearity between the variables, OLS regression analysis was applied to get the results and test the hypotheses.

5. Results

5.1 Descriptive Statistics

Table 2. Descriptive Statistics

Source	Variable	Definition	Obs	Mean	Std. Dev.	Min	Max
World Bank (2022)	LnGDP	Natural logarithm of Gross Domestic Product	35	25.024	0.832	23.804	26.647
World Bank (2022)	GDPPC	GDP per capita	35	724.627	584.923	233.658	2270.348
World Bank (2022)	LnFDI	Natural logarithm of foreign direct investment	35	18.671	2.814	12.421	21.764
World Bank (2022)	LnHCAP	Natural logarithm of total labor force	35	17.708	0.228	17.335	18.053
World Bank (2022)	LnINFRA	Natural logarithm of total landlines, cellular connections, and internet connections	35	33.204	44.323	0.192	118.412
World Bank (2022)	LnOPENNESS	Natural logarithm of total imports and exports	35	30.525	9.257	16.688	48.111

Table 2 shows the summary of the statistics of variables. In the last 35 years, the average LnGDP was 25.024 in the range of 23.804 to 26.647. The average GDP per capita of the country was 724.627, where the minimum GDP per capita was 233.658, and the maximum was 2270.348. The average LnFDI inflow into the country was 18.671, the minimum FDI inflow was recorded to be 12.421, and the maximum was 21.764. The average human capital was 17.708, the minimum was 17.335, and the maximum was 18.053. The average infrastructure of Bangladesh was 33.204, where the minimum was 0.192, and the maximum was 118.412. The mean LnOPENNESS was 30.525, within the range of 16.688 to 48.111.

5.2 Correlations Among Variables

Table 3. Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) LnGDP	1.000					
(2) GDPPC	0.937***	1.000				
(3) LnFDI	0.864***	0.670***	1.000			
(4) LnHCAP	0.959***	0.815***	0.945***	1.000		
(5) LnINFRA	0.946***	0.949***	0.719***	0.837***	1.000	
(6) LnOPENNESS	0.639***	0.358**	0.809***	0.767**	0.536***	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3 illustrates the correlations among the variables used in the study. The correlation coefficients were measured to explain the importance of variables. The correlation matrix shows the relationship between GDP, GDP per capita, FDI, infrastructure, human capital, and trade openness. The LnGDP (total gross domestic product) strongly and positively correlates GDP per capita, FDI, human capital, infrastructure, and trade openness at the highest significant level. No one correlates negatively with each other. The variables related to LnGDP with the results ranked as follows: (1) Human Capital (0.959), (2) Infrastructure (0.946), (3) GDP per capita (0.937), (4) FDI inflow (0.846), and (5) Trade Openness (0.639). If these significant variables increase, then the total GDP will also increase. Similarly, GDP per capita strongly correlates positively with GDP, FDI, human capital, and infrastructure.

5.3 Variance Inflation Factors

Multicollinearity may exist when correlations exist between multiple independent variables in a regression model. The high multicollinearity adversely affects the regression results. Therefore, before running the regression, it is essential to reduce multicollinearity (Field, 2000). A variance inflation factor (VIF) is calculated to measure multicollinearity between multiple independent variables. A VIF value greater than 10 indicates multicollinearity exists, and less than 10 indicates no multicollinearity between independent variables (Myers, 1990). Also, Adeyemi and Fegbemi (2010) suggested that a tolerance value ($1/VIF$) of more than 0.10 indicates no multicollinearity issue, and a tolerance value less than 0.10 indicates severe multicollinearity between independent variables in the multiple regression model.

Table 4. Variance inflation factor of independent variables of Model-1 and Model-2

	VIF	1/VIF
LnFDI	7.525	0.133
LnHCAP	5.797	0.172
LnOPENNESS	2.779	0.359
LnINFRA	1.949	0.513
Mean VIF	4.512	

Table 4 shows the VIF values of independent variables of Model-1 and Model-2. Again, all VIF values of independent variables are less than 10, and all tolerance values ($1/VIF$) are greater than 0.10, indicating no multicollinearity between independent variables.

5.4 OLS Regression Analysis

Table 5 illustrates the regression coefficients and standard errors (in the parentheses) of the variables of Model 1 and Model 2. GDP is the dependent variable in Model 1, and GDP per capita is the dependent variable in Model 2. LnFDI, LnHCAP, LnINFRA, and LnOPENNESS are the independent variables of both Model 1 and Model 2.

Table 5. Linear regression of Model-1 and Model 2

Variable	Model 1 GDP	Model 2 GDPPC
Constant	-20.068*** (3.718)	-28956.032*** (4295.948)
LnFDI	-.003 (.015)	-24.049 (17.252)
LnHCAP	2.553*** (.224)	1732.467*** (258.531)
LnINFRA	.008*** (.001)	9.306*** (.633)
LnOPENNESS	-.011*** (.002)	-28.107*** (2.585)
R ²	0.994***	0.983***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The R2 of Model 1 is 0.994, which indicates that FDI inflows, human capital, infrastructure, and trade openness are essential variables, as 99.4% of the GDP of Bangladesh is explained by these variables. Similarly, R2 of Model 2 is 0.983, which indicates that independent variables can explain 98.3% of GDP per capita.

The regression analysis results also revealed that the coefficients of human capital, infrastructure, and trade openness are highly significant (at 1% significance level) in Model 1 and Model 2. At the same time, coefficients of LnFDI are not significant indicating that FDI is an insignificant variable in both Model 1 and Model 2. Therefore, H2, H3, and H4 are accepted, illustrating that human capital, infrastructure, and trade openness significantly influence Bangladesh's GDP and GDP per capita. On the other hand, H1 is rejected, meaning that FDI does not significantly impact the economic growth in Bangladesh.

6. Discussion

This study uses a 35-year time series dataset of GDP, GDP per capita, FDI, human capital, infrastructure, and trade openness to determine the relationship between FDI and economic growth. Data were analyzed using two regression models where Model-1 includes the GDP as the dependent variable and FDI, human capital, infrastructure, and trade openness as the independent variables. Model-2 includes GDP per capita as the dependent variable and FDI, human capital, infrastructure, and trade openness as independent variables. In the analysis of both models, the results show that human capital, trade openness, and infrastructure significantly impact the economic growth of Bangladesh. However, FDI has no significant relationship with the economic development of Bangladesh. In other words, the FDI is not a determinant of the economic growth of Bangladesh.

This study identifies a positive relationship between human capital and economic growth in Model 1 and Model 2. This result is consistent with the study of Almfraji and Almsafir (2014) and Koojaroenprasit (2012). In addition, Curea and Ciora (2013) argued that special qualifications, relevant experience and skills, and innovative capacity increase the productivity of human capital, which in turn positively affects the country's economic growth. Therefore, human capital development policies are critical for a nation to develop a knowledge-intensive economy (Chee & Nair, 2010). In a country, both the government and corporates should play critical roles in increasing the supply of skilled workforce.

Infrastructure development contributes to quality education, good health, and additional human capital productivity, which eventually positively affects the economic development of a country (Palei, 2015). The study results depict that in the case of Bangladesh, infrastructure has a positive relationship with economic development. Mhlanga, Blalock, & Christy (2010), Asiedu (2006), and Biswas (2002) evidenced that infrastructure attracts FDI inflows into developing countries, consequently influencing economic growth. On the other hand, Cleeve (2008) and Mohammad and Sidiropoulos (2010) found no significant impact of infrastructure on the economy.

In the study, trade openness significantly and negatively impacts economic growth. This result is consistent with the study by Adhikary (2011). On the other hand, Almfraji and Almsafir (2014) found that trade openness has a significant positive relationship with economic growth. However, Tabassum and Ahmed (2014) found no significant relationship between trade openness and economic growth in Bangladesh.

Finally, the FDI inflows do not affect the economic development in Bangladesh as the empirical analysis shows an insignificant relationship between the FDI and economic growth. This result is consistent with Tabassum and Ahmed's (2014) and Adhikary's (2011) studies. However, the results contradict the findings of the studies by Sarker and Khan (2020), Ali et al. (2015), and Reza et al. (2018) because they found that FDI positively impacts the economic growth in Bangladesh. Another study by Rahman (2015) found a negative relationship between the FDI and economic growth in Bangladesh.

A large amount of literature shows that FDI is a critical instrument of economic growth in many countries. However, in the case of Bangladesh, FDI is not significant in enhancing economic growth. The chief reason is that the FDI inflows into Bangladesh are insufficient to create employment, develop infrastructure, and improve human capital. The average FDI inflows from 1986 to 1995 was only \$4.32 million, and from 1996 to 2005 was \$246.43 million (Table 1). The FDI inflows considerably increased during the last decade, while the average annual FDI inflow was \$2082.05 million. Still, this amount could be better in comparison to the FDI inflows into the neighboring countries such as India, Pakistan, Sri Lanka, and Vietnam. FDI positively impacts economic growth, while the recipient country has a stable economy and solid financial structure. It is expected that if FDI inflows increase significantly in Bangladesh in the near future, FDI will be a critical element of economic growth. Therefore, the Bangladesh government should emphasize creating a favorable financial environment for foreign investors to invest in different ventures within the country. Also, the government should focus on infrastructure and key economic sectors to attract FDI.

7. Conclusion, Limitation, and Future Research

The objective of this study was to empirically investigate the FDI effects on the economic growth in Bangladesh. The 35-year time series data were analyzed using OLS regression models. The GDP and GDP per capita were dependent variables, and FDI, human capital, infrastructure, and trade openness were the independent variables. The empirical analysis shows no significant relationship between economic growth and FDI. On the other hand, human capital and infrastructure positively impact economic growth. However, economic growth and trade openness have a significant negative relationship.

The research results are expected to benefit researchers, government agencies, and multinational companies (MNCs) decision-makers. This study extends the empirical evidence to the relationship between FDI and socioeconomic development literature. Also, the results will assist the government agencies in Bangladesh to take policy implications to improve the country's attractiveness as a favorable location for FDI. Similarly, the study will support the existing MNCs in making decisions regarding new business projects, increasing investments in the current projects, and managing risks. On the other hand, potential investors will use the findings of the study to assess the factors of investments in Bangladesh and compare them with other possible countries. The study suggests that Bangladesh needs a skilled labor force, reformed institutional structure, technological know-how, favorable trade policy, a sound political structure, and favorable economic condition to attract FDI from foreign investors. Therefore, if Bangladesh can gain substantial FDI inflows, that might enhance the socioeconomic development in the country.

The study has a limitation because it has used an ordinary least square regression model where other advanced models can estimate short and long-term effects. Therefore, further study can be carried out using the lag models to estimate the short and long-run effects of FDI on the economic growth in Bangladesh.

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