

# Macroeconomic and Institutional Determinants of Foreign Direct Investment in SAARC Countries

## Makroekonomiczne i instytucjonalne czynniki determinujące zagraniczne inwestycje bezpośrednie w krajach SAARC

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### Abstract

Foreign direct investment (FDI) is considered a vital element in the development strategies of the South Asian Association for Regional Cooperation (SAARC) economies. The institutional environment and macroeconomic conditions of host countries play crucial roles in attracting FDI. This study examines the influence of macroeconomic and institutional factors on FDI in six SAARC nations – Pakistan, India, Bangladesh, Nepal, Sri Lanka, and Bhutan – from 2000 to 2020. The research explores the impact of various factors on FDI by utilizing panel data analysis methods, specifically fixed effects (FE) and two-stage least squares (TSLS). The dependent variable in this analysis is FDI inflows, while the independent macroeconomic variables include gross domestic product (GDP), financial development, inflation, and infrastructure. Institutional factors such as government effectiveness, governance level, political stability, and regulatory quality are also considered. The findings indicate that all the chosen variables significantly influence FDI inflows, except government effectiveness. SAARC governments should establish investment-friendly environments and implement fair policies to boost FDI, supporting sustainable economic growth and sustainable development goals (SDGs). This study contributes by aligning FDI strategies with global development goals, promoting inclusive growth, and improving infrastructure in the region. It extends previous research, providing deeper insights into the factors influencing FDI and its role in sustainable economic progress.

**Keywords:** FDI, panel data, SAARC, macroeconomic indicators, institutional quality, Sustainable development goals

### Streszczenie

Bezpośrednie inwestycje zagraniczne (BIZ) są uważane za kluczowy element strategii rozwoju gospodarek Państwa Członkowskiego Stowarzyszenia Współpracy Regionalnej (SAARC). Środowisko instytucjonalne i warunki makroekonomiczne krajów przyjmujących odgrywają kluczową rolę w przyciąganiu BIZ. W niniejszym badaniu zbadano wpływ czynników makroekonomicznych i instytucjonalnych na BIZ w sześciu krajach SAARC – Pakistanie, Indiach, Bangladeszu, Nepalu, Sri Lance i Bhutanie – w latach 2000-2020. W badaniu zbadano wpływ różnych czynników na BIZ, wykorzystując metody analizy danych panelowych, w szczególności efekty stałe (FE) i dwuetapowe najmniejsze kwadraty (TSLS). Zmienną zależną w tej analizie są napływy BIZ, podczas gdy niezależne

żne zmienne makroekonomiczne obejmują produkt krajowy brutto (PKB), rozwój finansowy, inflację i infrastrukturę. Rozważono również czynniki instytucjonalne, takie jak skuteczność rządu, poziom zarządzania, stabilność polityczna i jakość regulacji. Wyniki wskazują, że wszystkie wybrane zmienne znacząco wpływają na napływy BIZ, z wyjątkiem skuteczności rządu. Rządy SAARC powinny stworzyć przyjazne inwestycjom środowiska i wdrożyć uczciwą politykę w celu zwiększenia FDI, wspierając zrównoważony wzrost gospodarczy i cele zrównoważonego rozwoju (SDGs). Niniejsze badanie przyczynia się do tego poprzez dostosowanie strategii FDI do globalnych celów rozwojowych, promowanie wzrostu sprzyjającego włączeniu społecznemu i poprawę infrastruktury w regionie. Rozszerza ono poprzednie badania, zapewniając głębszy wgląd w czynniki wpływające na FDI i ich rolę w zrównoważonym postępie gospodarczym.

**Słowa kluczowe:** BIZ, dane panelowe, SAARC, wskaźniki makroekonomiczne, jakość instytucjonalna, Cele zrównoważonego rozwoju

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## 1. Introduction

The SAARC nations – Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka – exhibit significant disparities in their economic landscapes, institutional structures, and policy frameworks. The comprehension of the macroeconomic and institutional determinants of FDI within the SAARC region is crucial for policymakers and investors. It sheds light on the factors influencing FDI streams in this region, contributing to sustainable development goals (SDG 8 – Decent Work and Economic Growth) by driving inclusive economic growth and job creation (Hamid et al., 2024; Tahir et al., 2018). FDI has been a pivotal topic for SAARC countries since the 1990s, a period marked by the liberalization of their economies to accommodate private capital influx from the corporate sphere. Since 1980, nations globally have embraced foreign investments to capitalize on the manifold advantages of FDI (Gupta et al., 2023).

The ramifications of FDI on a state's financial system are multifaceted, impacting manufacturing, pricing, employment, economic expansion, market structure, and the balance of payments. FDI serves as a conduit for narrowing the technological divide among host and foreign countries, thereby fostering efficiency, growth, and a plethora of opportunities for advancement and development, which also aligns with SDG 9 (Industry, Innovation, and Infrastructure). FDI stands as a cornerstone in the economic ascent of both developed and developing nations (Udemba and Kelecs, 2022). A myriad of studies has endeavored to associate this surge with an array of diverse factors (Ajide et al., 2022).

Most of the FDI has flowed into industrialized countries in the past few decades. In recent years, however, the proportion of FDI that has flown into developing countries and is transforming these economies has increased (Johnson and others, 2006). In 2010, emerging and transition economies captured more than half of global FDI for the first time (UNCTAD, 2011). Economic and financial globalization has been increasingly important in gaining access to cash, goods and services, and technology from various markets in recent years. On the one hand, due to the growing influence of financial and international firms, many governments see globalization as a danger to their sovereignty (Baylis, Smith, and Owens, 2020; Keohane and Nye, 2020). On the other hand, FDI provides unquestionable advantages in technological transfer, managerial skills, research and development, and the globalization of domestic markets. These contributions support SDG 9, which calls for fostering innovation and sustainable industrialization, essential for economic transformation.

FDI is proposed as a long-term cure in pushing the slow growth experienced in these nations, particularly developing countries. FDI's significant role in boosting economic growth is recognized since most economies have robust mechanisms to stimulate the inflow of foreign capital and increase the capacity to attract FDI (Ajayi, 2006; Kumar et al., 2022). For example, in many developing countries, advocacy strategies – such as the liberalization of capital flows, the formation of special economic zones, geographical locations, and investment incentives have been implemented to attract FDI and promote economic growth (Borensztein et al., 1998). These strategies directly align with SDG 8 (Decent Work and Economic Growth), focusing on inclusive growth and employment generation. The study conducted in Africa shows that the country has embraced and developed a healthy business climate and now requires foreign investment to entice FDI into sectors critically needed (Ajayi, 2006). This highlights the role of FDI in bridging economic gaps and fostering more inclusive growth, which is key to SDG 10 (Reduced Inequalities), focusing on addressing disparities in income and opportunities.

According to Onyeiwu (2003), FDI in developing countries is influenced by racial inequality, with specific attributes of host nations rendering them more appealing to foreign investors. Trade liberalization can augment a country's prospects of reaping the benefits of FDI and knowledge spillovers. Increased investment is essential for sustained economic growth. FDI can bridge funding gaps, support the achievement of SDGs, and strengthen emerging economies (Borensztein et al., 1998). FDI plays a pivotal role in a burgeoning economy as it intermediates the relationship in domestic savings, generates employment opportunities, and aids natives in augmenting their skills, among other advantages. These benefits contribute to SDG 4 (Quality Education) by improving skillsets and SDG 8, promoting sustained and inclusive economic growth.

Despite South Asia garnering less from FDI inflows compared to other regions globally, it continues to be a promising destination for forthcoming FDI inflows. The potential of the region to attract more FDI is directly related to SDG 9, as infrastructure development and innovation are key drivers of industrial growth. The fundamental objective of this research is to explore the impact of macroeconomic and institutional elements on FDI within the member states of SAARC. The study seeks to answer the question: *Which macroeconomic and institutional variables are most influential in shaping FDI in SAARC nations, and how do these variables guide the development of policies to foster sustainable economic growth and progress?* This directly contributes to SDG 8 by providing insights into policy measures that can drive inclusive economic growth and SDG 9 by fostering industrial growth and infrastructure development. This study attempts to fill critical knowledge gaps and overcome existing limits in understanding the factors influencing FDI in the SAARC region. This region is well-known for its diversified economies, varying levels of development, distinct economic policies, and one-of-a-kind institutional frameworks. The diversity of SAARC member nations presents a distinct opportunity to examine how varied macroeconomic and institutional factors impact FDI inflows. A notable gap in the existing literature is the absence of comprehensive, longitudinal data analysis across these countries. This research endeavors to rectify this deficiency and also contributes to SDG 17 (Partnerships for the Goals), as it emphasizes the role of international collaboration and knowledge-sharing to foster development. The present study navigates common econometric challenges such as endogeneity, heteroscedasticity, and non-stationarity in regression models by employing panel data methodologies. The overarching objective is to provide empirical insights that can inform policy formulation in the SAARC region to foster long-term economic growth and development. Consequently, this study bridges a significant gap in our comprehension of the complex and multifaceted determinants driving FDI in a diverse and continuously evolving region, and contributes directly to achieving the SDGs.

The net inflow of FDI has increased dramatically over the last few decades, rising from US\$4368 million in 2000 to US\$68,956 million in 2020.

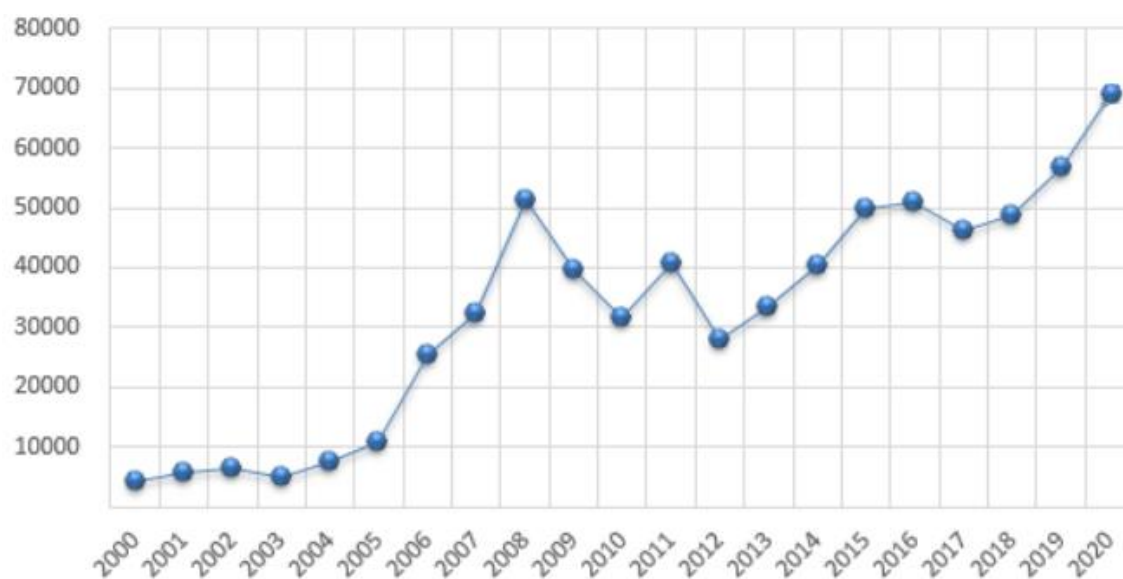


Figure 1. FDI inflows into SAARC nations from 2000 to 2020 (US Dollars in Millions), source: World Bank

Figure 1 shows that FDI inflows into SAARC countries experienced a substantial increase from 2000 to 2020. This period can be segmented into distinct phases, each marked by specific trends. The initial phase from 2000 to 2001 witnessed a significant expansion, with FDI surging from US\$4,368 million in 1996 to US\$5,798 million in 2001, indicating an enhanced attraction for foreign investors in the SAARC region. The subsequent years from 2002 to 2010 were characterized by volatility, with FDI inflows fluctuating, reaching highs of US\$6,355 million in 2002 and US\$7,477 million in 2004, while experiencing lows of US\$3,080 million in 1999 and US\$31,699 million in 2010. Despite this, an overall upward trajectory during this period underscored the region's resilience and ability to recover from economic challenges. Since then, FDI inflows have continued to grow from 2011 to 2015, exceeding 40,000 units annually, reaching US\$49,719 billion in 2015, demonstrating heightened confidence in the SAARC economies. In the recent period from 2016 to 2020, the region saw an unprecedented increase in FDI inflow, reaching a zenith of US\$68,956 million in 2020. These developments collectively indicate the SAARC countries' impressive growth in attracting FDI, reflecting their rising appeal to foreign investors and the potential for more economic growth. However, it must be acknowledged that FDI inflow remains susceptible to global economic trends and geopolitical conditions, which may affect future trajectories.

## 2. Literature review

### 2.1. Theoretical review

Analysts and economists have identified various theories to explain the drivers of FDI, why some countries are seen as attractive for foreign investments, and why some strategies are chosen over others (Paul and Feliciano-Cestero, 2021). This study aims to investigate the impact of macroeconomic and institutional factors on FDI in SAARC countries. Given the vital role played by FDI, it is important to understand why some other nations are more likely to experience FDI inflows than others (Moosa, 2002). This study offers different theories based on macroeconomic and institutional factors. The theories are given below:

#### 2.1.1. Product life cycle theory

The product life cycle theory, first proposed by Vernon (1966), provides a valuable framework for understanding product development and its impact on international trade and FDI, especially in SAARC countries. The theory divides the product life cycle into four stages: innovation, growth, maturity, and decline, and each stage has a different impact on FDI. According to Michael (1990), factors such as the country's institutional strength and technological capabilities play an important role in attracting initial FDI. As highlighted by Levitt (1983), moving into the growth stage makes it necessary to increase market share in emerging markets, including those within the SAARC region. At this stage, market size and consumer income emerge as the main attractors for FDI. As discussed by Eiteman et al (2010), stable macroeconomic and trade policies are important for sustaining FDI during the maturity stage. According to the PLC theory, technologically complex and capital-intensive innovations are usually created for the domestic market and then move through different stages as production shifts to developed nations and later to developing nations. For example, Contractor et al. (2020) state that multinational firms are willing to invest in countries with less favorable institutional quality at one stage of the investment's life-cycle in exchange for better institutions or simpler regulations at a later stage. Finally, periods of decline require changes in policy and institutional frameworks to maintain the attractiveness of FDI (Dunning, 1980).

#### 2.1.2. Internalization theory

Internalization theory, first proposed by Buckley and Casson in *The Future of Multinational Corporations* (Buckley & Casson, 1981), provides a concise perspective on FDI and the expansion of multinational corporations (MNCs), especially in the context of SAARC countries. The theory assumes that the emergence of MNCs is a response to market imperfections, such as government regulations, tariffs, and information asymmetries, which lead to high transaction costs. In response to these imperfections, MNCs internalize their operations to reduce costs and uncertainty, minimizing dependence on external organizations through licensing and collaboration. This strategic choice is particularly relevant to the SAARC context, where market imperfections arise due to varying financial development, regulatory environments, and market dynamics.

This theory also explains why MNCs prefer FDI over methods like exporting or licensing. MNCs prefer exporting when they can control production and management in their home country, but it becomes more efficient to transfer services to the host country. According to institutional theory, the structure and behavior of an organization are influenced by its environment. Moreover, while Buckley and Casson's theories provide a basis for understanding FDI dynamics, further research is needed to assess how these theories apply to the unique institutional and economic contexts of SAARC countries.

#### 2.1.3. Eclectic Paradigm Theory

The eclectic paradigm proposed by Dunning in his seminal work (Dunning, 1980, 1998), often referred to as the OLI theory, proposes a comprehensive framework for understanding FDI in the context of multinational corporations. This paradigm combines three fundamental advantages – ownership (O), location (L), and internalization (I) – to explain why companies choose FDI and make specific choices about where to locate operations. According to Dunning's theory, FDI is more likely when a company has a particular technology or a strong brand reputation, coupled with the in-house advantages gained from managing resources and operations in-house rather than relying on licensing or outsourcing. The concept of location advantage is related to the attractiveness of the host country, which combines factors such as market size, availability of resources, and political stability.

Dunning's OLI paradigm has been the most popular lens in MNE-FDI research, analyzing Ownership, Location, and Internalization advantages to explain internationalization strategies. In the context of SAARC countries, this paradigm has important implications in considering macroeconomic and institutional determinants of FDI. FDI research has primarily used this approach, discounting the potential determinants of FDI, including GDP, government efficiency, governance level, political stability, regulatory quality, financial development, inflation, and infrastructure. The OLI paradigm's popularity may be due in part to the fact that it provides a solid foundation for the creation of other hypotheses and frameworks that attempt to explain the changing MNE-FDI phenomenon. Despite the relevance of the OLI paradigm and its refinements, Dunning (2006), acknowledged that some of the underlying assumptions of OFDI from EMNEs may need to be revised based to its particular situation.

## 2.2. Empirical review

FDI is widely acknowledged as a catalyst for economic growth, especially in developing nations, because of its contribution to technology developments and financial inflows. FDI inflows have a major impact on GDP growth, increasing industrial output and increasing productivity across sectors. The past few decades have seen large-scale capital movements in the form of FDI, increasing from USD 54.1 billion in 1980 to USD 1.45 trillion in 2013. Research has demonstrated that FDI creates jobs, particularly in manufacturing industries, by producing direct employment and strengthening local supplier chains. A study conducted by Campos and Kinoshita (2003), analyzed the determinants of FDI in 25 transition economies using panel data from 1990 to 1998. The results revealed that institutions, aggregation, and trade opening were the main factors affecting FDI during the transition period. Moreover, another recent study by Akalpler and Adil (2017), found that FDI significantly impacted economic growth, aligning with the SDGs related to economic growth and job creation. Erfani and Berger (2020); Affandi et al. (2019), conducted a study on determinants of FDI in Asian countries, and found that human capital, inflation, and GDP are important and necessary indicators for FDI. These findings directly relate to SDG 8, which focuses on promoting sustained, inclusive, and sustainable economic growth and full and productive employment.

Johnson and others (2006), analyzed the determinants of FDI in transition countries, dividing the selected countries into CEE (Central and Eastern Europe) and CIS (Commonwealth of Independent States). Compared to CIS countries, Central and Eastern European countries have a higher GDP per capita. The authors believe that FDI inflows to Central and Eastern Europe are mainly driven by market development motives. Meanwhile, the main reason for FDI inflows into CIS countries is resource exploration, highlighting the importance of economic policies in promoting FDI, which is essential to achieving SDG 9, which focuses on building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation.

Binati and Sohrabji (2019), conducted a comprehensive analysis of FDI to Turkey over the period 1992–2010 to identify the main factors influencing Turkey's behavior. Their study included both international and institutional variations and concluded that the quality of institutions plays a key role in enhancing FDI and domestic exchanges. The quality of institutions is a crucial predictor of FDI inflows, as strong governance systems attract investment by decreasing risks and uncertainty. Furthermore, their results showed that institutional reforms led to a reduction in FDI outflows and had a positive impact on trade trends. This highlights the role of governance, which is essential to fostering a sustainable economic environment in line with SDG 16, which promotes peaceful and inclusive societies, access to justice for all, and effective and accountable institutions for sustainable development.

In exploring the determinants of FDI in Africa, Asiedu (2002), considered FDI in terms of inflows, while Campos and Kinoshita (2003), approached FDI as stock in transition countries. Furthermore, Azizov (2007), conducted a detailed study on the determinants of FDI in transition countries (CIS countries) from 1992 to 2005 and found that natural resources, market size and inflation were important factors in attracting FDI inflows. This analysis aims to ensure access to modern, reliable, sustainable energy for all, especially by promoting the development of energy infrastructure in resource-rich countries, contributing to the overarching goal of SDG 7.

According to Gondim et al. (2017), analyzed various macroeconomic and institutional factors affecting FDI influx into 17 states in the developing world between 2001–2014. The results revealed that macroeconomic situations are still crucial for attracting FDI inflow, while institutional factors impede it. Similarly, Saidi et al. (2023), examined the triangle involving FDI, Institutional Quality and as well as economic growth in 102 developing countries from 1996 to 2014; however, the research study did not reveal a meaningful relationship between governance and FDI inflows. Improving institutional quality has been shown to be a key element in fostering FDI, which supports SDG 16, improving the quality of governance and institutions to encourage long-term sustainable growth.

Gupta et al. (2023), investigate the impact of institutional quality (IQ) on incoming and outgoing FDI for the BRICS nations, that are currently being invested in and out by many people. Results indicated a strong, positive correlation between institutional quality and inward FDI in India and South Africa, indicating that improving institutional quality could increase FDI. On the other hand, the authors found that for outward FDI (OFDI), institutional quality negatively influenced Brazil and Russia. This connection between institutional quality and FDI is critical for achieving SDG 8, as improving governance structures contribute to fostering more sustainable economic growth and development.

According to a study conducted by Addi and Abubakar (2022), enhancing the overall institutional quality of a country positively impacts its investment. From 1991 to 1998, Nunes et al. (2006), discovered that market size, infrastructure, macroeconomic stability (inflation), employment, the openness of the economy, human capital, natural resources, and employment were all determinants of FDI flows. The study found that market size, infrastructure, and inflation positively influence FDI flows, while wage rate negatively impacts FDI. Market size and infrastructure are key factors in attracting FDI and are aligned with SDG 9, which promotes sustainable industrialization and infrastructure development.

Behera et al. (2020), examine the importance of FDI outflows from Asian developing nations and determine how exports, financial growth, and institutions affect said outflows. Their research discovered that improving institutions in the short term has a beneficial effect on FDI, yet in the long term, this effect decreases. In South Asian

countries, market size, labor force, trade openness, and infrastructure index are major predictors of FDI flows. Behname (2012), looked at the connection between infrastructure and FDI flows in cross-sectional datasets from South Asian nations from 1980 to 2009 and discovered that urban infrastructure had a favorable impact on FDI. Improving infrastructure in South Asia plays a significant role in achieving SDG 9 by enhancing the region's industrial capacity and innovation.

According to Sahoo (2006); and Williams and Zhang (2015), the relevance of effective policies and institutional quality in promoting FDI and economic growth. Saha et al. (2022), studied the primary influence of institutional quality on FDI in lower-middle-income countries between 2002 and 2018. The authors were able to demonstrate encouraging effects from control of corruption and regulatory quality, but prevailing detrimental outcomes from high rule of law and voice and accountability. Surprisingly, there was no visible correlation between institutional quality and government effectiveness or political stability. Institutional quality remains a vital determinant of FDI inflows, supporting SDG 16 by improving governance, transparency, and the rule of law.

Hussain and Haque (2016), in their study of Bangladesh, found that GDP per capita growth is a key indicator of FDI. Shah (2016), examined a set of Middle Eastern and North African nations using a random effect model and discovered that domestic private-sector financing is beneficial and significant. In 1994 and 1996, Smith-Hillman and Omar (2005), used a survey to investigate the impact of regulatory and political risk on 121 English enterprises' foreign activity. The study found that developing countries receive less FDI than developed countries, and the finding is viewed as a response by multinational corporations to countries with weak governments that are prone to political risk and corruption. Subasat and Bellos (2013), used a panel gravity approach to explore the link between governance and FDI in the context of selected Latin American nations from 1985 to 2008. The findings revealed that FDI improves the character of inadequate governance in target nations. This further highlights the importance of good governance and regulatory quality for attracting FDI, aligning with SDG 16's objective to promote effective institutions. Furthermore, a study conducted by An et al. (2023), examined how financial development (FD) influenced the positive impact of FDI on economic growth in emerging and developing countries in Asia between 1996 and 2019, focusing on whether strong, well-developed financial systems are essential for attracting FDI, which contributes to SDG 8 of promoting decent work and economic growth.

The results suggest that an adequately developed financial system encourages FDI and thereby enhances returns in emerging and developing Asia. Further research is needed to examine the impact of macroeconomic and institutional determinants on FDI in SAARC countries. To the best of the authors' knowledge, no comprehensive studies have been conducted in the South Asian region to analyze the impact of these variables on FDI, either at a regional level or on a country-specific basis. This research aims to bridge this gap by investigating the macroeconomic and institutional factors influencing FDI in the SAARC countries. The study seeks to contribute to the existing body of knowledge by providing valuable insights into the relationship between these determinants and FDI in the SAARC region, leading to sustainable economic growth and contributing to the achievement of the SDGs.

### *2.3. Factors determining FDI flows from empirical research*

#### *2.3.1. Gross domestic product (GDP)*

The gross domestic product (GDP) is the sum of all market and non-market products and services generated within a country's geographical territory. While per capita GDP indicates a country's economic state, national income levels are approximate indicators of the country's economic position and residents' purchasing power. Mottaleb and Kalirajan (2010), implicated the significance of GDP, its growth level, and a favourable business climate in driving FDI. According to Chakrabarti (2001), the larger the host country's market, the greater the likelihood of FDI. Researchers discovered that GDP has a substantial beneficial influence on FDI because resource efficiency and economies of scale require a more extensive market (Ang, 2008; Pärletun, 2008).

#### *2.3.2. Government effectiveness (GE)*

Government effectiveness is determined by the quality of public service, civil servant quality, political pressure freedom, decision-making quality and implementation, and government credibility in this form of political action (Jadhav and Katti, 2012). Political power can create and carry out effective stability programs. The effectiveness of government depends on the quantity and quality of public services, the capacity of officials and civil servants, the credibility of public duties, and the freedom of public services from political influence and justice.

#### *2.3.3. Level of governance (LG)*

The level of governance is represented by control of corruption. Corruption is seen as a threat to foreign investors since it leads to distortions in the financial and economic environment. The literature has investigated the correlation between FDI inflows and corruption. Corruption, commonly associated with bribes and illegality, is defined by Transparency International as the exploitation of a position of power for personal benefit (Bahoo et al., 2020). It also reduces the efficiency of business and government as people are encouraged to take up positions not based

on their abilities but rather on political grounds. Corruption obstructs investment directly and indirectly by raising the cost of conducting business (Al-Sadig, 2009). Corruption controls reflect the general public's perception of the consumption of public power for private gain. This included corruption, both small and large, as well as *coups* by elites and personal gains (World Governance Indicators).

#### 2.3.4. Political stability (PS)

Political stability refers to acts of violence, such as political violence and terrorism, as well as unconstitutional activities that destabilize the government. Investment is hampered by direct and indirect corruption (Al-Sadig, 2009; Habib and Zurawicki, 2002), despite unclear links between political instability and FDI (Asiedu, 2002). Several countries in this study are marked by high levels of instability, including recurrent military interventions and religious and ethnic strife (Owusu-Antwi, 2012). A multitude of studies suggest that political risk has a detrimental effect on FDI inflows (Ledyeva et al., 2013; Maggioni et al., 2019; Solomon and Ruiz, 2012).

#### 2.3.5. Regulatory quality (RQ)

Regulatory quality refers to the government's ability to develop and implement regulations that promote the development and support of the private sector. This is the effectiveness of public policy under the influence of market forces. Price controls, actions related to the supervision and inspection of the banking system, and restrictions on the production and consumption of goods and services with a negative external impact are among the areas in which this policy focuses. The government's capacity to establish and enforce sound rules and regulations that allow and support private-sector development is referred to as Regulatory Quality (Jadhav and Katti, 2012).

#### 2.3.6. Financial development (FD)

Financial development represents the proportion of broad money to GDP (M2/GDP). Broad money includes cheque and savings account deposits, currency (notes and coins), mutual funds, investments in financial market securities, and other call deposits. Financial development is crucial in FDI decisions since it impacts the cost structure of investment projects (Nasser and Gomez, 2009). According to Kinda (2010), financial development is an engine of economic progress, giving customers and businesses improved commercial options. A positive coefficient is expected if the level of financial development positively impacts FDI-induced economic growth.

#### 2.3.7. Inflation (INF)

An economy with a low inflation rate may suggest stable macroeconomic policies or an investment-friendly environment, inviting more FDI. While rising inflation shows insecure policies and high operating costs, it discourages FDI (Zheng, 2009). Uncontrolled inflation can bring about macroeconomic instability in a nation, leading to lower foreign investment (Buckley et al., 2018). Previous empirical research has found a negative association between inflation and FDI when using inflation to determine the stability of macroeconomic policy (Chakrabarti, 2001; Makki and Somwaru, 2004; Zheng, 2009). The annual inflation rate (LINF) gauges the economic climate in the Solomon Islands, which has had a high inflation rate in recent years. As a result, the variable should be negative.

#### 2.3.8. Infrastructure (INFRA)

A sufficient supply of infrastructure services is critical for productivity and growth. A region's economy can be operated without significant distortions with good infrastructure (Gari and Josefsson, 2004). A better infrastructure promotes investment efficiency and attracts FDI. Behname (2012), explored the relationship between infrastructure and FDI flows in Southern Asian countries from 1980 to 2009, discovering a positive impact of infrastructure on FDI. Therefore, a country's infrastructure is another crucial factor for FDI inflows. However, due to the lack of data for the selected countries, We use Air transport and registered carrier departures worldwide as a proxy for infrastructure.

### 3. Data and methodology

This section lays the foundation for the empirical analysis of the study by explaining the experimental models, data, variable descriptions, and estimation methods. The author selected six countries for the model as more data was needed to include additional ones. The empirical test focuses on macroeconomic and institutional determinants of FDI inflows in six selected SAARC countries (Pakistan, India, Bangladesh, Nepal, Sri Lanka and Bhutan) from 2000 to 2020. This study uses one dependent and eight independent indicators. A log of FDI inflows in a particular country in US\$ is the dependent variable, and it is denoted LFDI. Data related to macroeconomic independent variables, gross domestic product (GDP), financial development, inflation, infrastructure, and data related to institutional independent indicators, government effectiveness, level of governance representing control of corruption, political stability and regulatory quality are obtained from the World Bank Database and United Nations Development Programme.

Table 1. Variables used in the models and data sources (World Bank and UNDP), created by the authors

| Variables | Meaning  | Data Source                               | Expected Sign |
|-----------|--|---|---------------|
| FDI       | Foreign direct investment, net inflows (BoP, current US\$)                     | World Bank's World Development Indicators | +             |
| GDP       | Gross domestic product (GDP)   | World Bank's World Development Indicators | +             |
| GE        | Government effectiveness: estimate   | Worldwide Governance Indicators           | +             |
| LG        | Control of corruption: number of sources                                       | Worldwide Governance Indicators           | +             |
| PS        | Political stability and absence of violence/terrorism: number of sources       | Worldwide Governance Indicators           | +             |
| RQ        | Regulatory quality: estimate   | Worldwide Governance Indicators           | +             |
| FD        | Financial development (Broad money % of GDP)                                   | World Bank's World Development Indicators | +             |
| INF       | Inflation, consumer prices (annual %)  | World Bank's World Development Indicators | -             |
| INFRA     | Air transport, registered carrier departures worldwide                         | World Bank's World Development Indicators | +             |
| FDI       | Foreign direct investment in % GDP for robustness checking of baseline results | World Bank's World Development Indicators | +             |

To assess the major determinants of FDI inflows, the following semi-log fixed-effects (FE) regression model is used:

$$\ln(\text{FDI})_{it} = \beta_0 + \beta_1(\text{INFRA})_{it} + \beta_2(\text{FD})_{it} + \beta_3(\text{LG})_{it} + \beta_4(\text{RQ})_{it} + \beta_5(\text{INF})_{it} + \beta_6(\text{PS})_{it} + \beta_7(\text{GE})_{it} + \beta_8(\text{GDP})_{it} + \epsilon_{it}$$

Where  $i$  denotes countries,  $t$  represents time, and  $L$  stands for log transformation. The decision to log-transform variables in statistical analysis depends on the distribution of the variable. Variables with skewed or highly variable distribution may benefit from log transformation to reduce the influence of outliers and make the data more normally distributed. On the other hand, variables that are already normally distributed or have a symmetrical distribution may not benefit from log transformation. The variables are defined as:

LFDI $_{it}$  = is the log of Foreign direct investment, net inflows (BoP, current US\$)

LGDP $_{it}$  = is the log of Gross Domestic Product in the current US\$

GE $_{it}$  = Government Effectiveness: Estimate

LG $_{it}$  = Control of Corruption: Number of Sources

LPS $_{it}$  = is the log of Political Stability and Absence of Violence/Terrorism: Number of Sources.

LRQ $_{it}$  = is the log of Regulatory Quality: Estimate

FD  $_{it}$  = Broad money (% of GDP)

INF $_{it}$  = Inflation, consumer prices (annual %)

LINFRA $_{it}$  = is the log of Air transport, registered carrier departures worldwide

### 3.1. Panel data

This study utilizes panel data analysis to capture complex parameter behaviors, offering more precise estimates and detailed insights. Adopting panel data analysis for the research on *Macroeconomic and Institutional Determinants of FDI in SAARC Countries* offers several compelling advantages. Firstly, panel data – including both cross-sectional and time series – makes it possible to analyze FDI flows across various nations dynamically and nuancedly. Given that the institutional and financial situations within the SAARC nations are constantly changing and varied, that is incredibly essential. Panel data analysis provides information regarding the unique and combined effects of investment drivers on FDI and can better capture temporal and spatial variations. *Panel data models are particularly valuable since they adjust for individual heterogeneity by employing both time-series and cross-sectional data* (Kao et al., 2000). Furthermore, this approach reduces bias due to omitted variables and allows for the examination of effects, causality, and interaction effects. A key benefit of employing panel data is its capacity to estimate models with fewer biases from unobserved factors such as political stability, institutional quality, and cultural background (Baltagi, 1995). Panel data analysis techniques enable researchers to isolate the effect of variables that are not directly observable, yet affect foreign investment, like governance quality and human capital (Woodridge, 2010). This procedure greatly increases the reliability of the estimates and strengthens the inferences from facts.

The panel data model contains basic methods: (a) random effects, (b) fixed effects, and (c) the common constant method. The analysis integrates the best fit of the calculation by estimating all three methods. The common constant method, also known as the pooled OLS estimation method, yields results based on the premise that there are no variations between the cross-sectional dimension data matrices.



Fixed effects models concentrate on variation within each organization or nation and are therefore applied in the broader context of data analysis. Studying the time-varying effects of variables like institutional reforms and macroeconomic policies is made much easier by the model's ability to control time-invariant characteristics accurately. Using FE models facilitates examining the impact of political and economic developments on FDI flows within a region, enabling researchers to pinpoint their exact effects (Wooldridge, 2010).

To avoid bias and incorrect conclusions, it is critical to address potential heterogeneity in economic analysis. Assessment inaccuracy, missing data, or combined causal connections among variables can all lead to endogeneity. It is incredibly challenging for FDI because economic variables like GDP growth can support and undermine investment simultaneously. The two-stage least squares (TSLS) method effectively solves the problem. By employing instrumental factors that may be connected to endogenous explanatory variables but contain error terms, TSLS clarifies directional effects and causal relationships within the model (Angrist and Pischke, 2009).

In the case of FDI in SAARC nations, the TSLS approach is used to quantify the impact of possibly endogenous variables, and suitable instrumental variables for this purpose could include lagged values for exogenous factors that may affect but are unlikely to affect in the short term. This methodological rigor ensures that the links revealed are accurate and reflect real economic dynamics. As a result, policymakers and economists have gained valuable insights into the variables driving FDI in the region. This research conducts a comprehensive statistical analysis of the variables influencing FDI in SAARC member countries using fixed effects modeling and TSLS. In addition to stressing the statistical elements, this framework offers a thorough understanding of the economic implications of FDI in SAARC. These methods allow for detailed analysis that sheds light on how institutional and macroeconomic factors shape the FDI environment in the region. It is crucial for formulating a successful economic strategy for growth.

#### 4. Findings and discussion

This study applies a panel data approach to evaluate the microcosmic and institutional determinants of FDI from six SAARC Countries: Pakistan, India, Bangladesh, Nepal, Sri Lanka and Bhutan. Before undertaking the panel data analysis, descriptive and correlation analyses were executed. The descriptive statistics and correlation matrix are shown in Tables 2 and 3, respectively.

Table 2. Descriptive statistics of variables in the study, source: Authors' own calculation

|        | Observations | Mean   | Std.Dev | Minimum | Maximum |
|--------|--------------|--------|---------|---------|---------|
| LFDI   | 120          | 19.663 | 2.812   | 13.811  | 24.888  |
| LGDP   | 120          | 1.279  | 0.690   | -2.807  | 2.835   |
| GE     | 120          | -0.305 | 0.478   | -1.054  | 0.829   |
| LG     | 120          | 10.215 | 3.419   | 3.000   | 15.000  |
| LPS    | 120          | 1.695  | 0.427   | 0.693   | 2.197   |
| LRQ    | 120          | 3.401  | 0.401   | 2.354   | 4.138   |
| FD     | 120          | 58.810 | 16.838  | 26.233  | 117.750 |
| INF    | 120          | 6.578  | 4.049   | -18.109 | 22.565  |
| LINFRA | 120          | 10.240 | 1.705   | 6.908   | 14.006  |

Table 3. Correlation of variables in the study, source: Authors' own calculation

|        | LFDI   | LGDP   | GE     | LG    | LPS   | LRQ    | FD     | INF   | LINFRA |
|--------|--------|--------|--------|-------|-------|--------|--------|-------|--------|
| LFDI   | 1.000  |        |        |       |       |        |        |       |        |
| LGDP   | -0.020 | 1.000  |        |       |       |        |        |       |        |
| GE     | -0.164 | 0.235  | 1.000  |       |       |        |        |       |        |
| LG     | 0.704  | 0.053  | -0.381 | 1.000 |       |        |        |       |        |
| LPS    | 0.759  | 0.028  | -0.353 | 0.913 | 1.000 |        |        |       |        |
| LQR    | 0.169  | 0.039  | 0.328  | 0.032 | 0.045 | 1.000  |        |       |        |
| FD     | 0.013  | 0.220  | 0.009  | 0.183 | 0.196 | -0.059 | 1.000  |       |        |
| INF    | 0.221  | -0.036 | -0.197 | 0.437 | 0.331 | 0.010  | -0.038 | 1.000 |        |
| LINFRA | 0.891  | -0.041 | -0.147 | 0.654 | 0.716 | 0.273  | 0.255  | 0.147 | 1.000  |

Table 2 depicts the descriptive statistics, which indicates that financial development (FD) has the leading mean value and standard deviation of 58.810 and 16.838, respectively. Following closely, LFDI holds the second-highest mean value at 19.663, with a standard deviation of 2.812. INF exhibits a mean of 6.578 and a standard deviation of 4.049, while LRQ has a mean of 3.401 with a standard deviation of 0.401. In contrast, LPS and LGDP share a mean of 1.695 and 1.279, respectively, with standard deviations of 0.427 and 0.690. The lowest mean value is

attributed to GE at -0.305, with a standard deviation of 0.478. The correlation results presented in Table 3 reveal that the independent variable LINFRA is highly correlated with LPS and LG. At the same time, while LPS is highly associated with LG, it can be predicted with the help of other variables.

The descriptive statistics and correlation data are critical in comprehending the linkages between major economic and institutional factors like financial development, foreign direct investment, infrastructure, regulatory quality, political stability, GDP, and government effectiveness. The statistics shed light on the distribution and variation of each factor. At the same time, the correlations indicate interdependences, such as the strong link between infrastructure and political stability, as well as political stability and economic growth. The immense correlation between the independent variables leads to multicollinearity, which is an issue with estimation. We are still considering these variables due to the statistical nature of the panel data assessment, which solves the collinearity problem.

Table 4. Panel data estimation results based on fixed effects (FE) and Two-stage least squares (TSLS), source: Authors' own calculation

| Explanatory Variable | Fixed Effects (FE)     |            |             |          | Two-Stage Least Squares (TSLS) |            |             |          |
|----------------------|------------------------|------------|-------------|----------|--------------------------------|------------|-------------|----------|
|                      | Regression Coefficient | Std. Error | t-Statistic | P-Value  | Regression Coefficient         | Std. Error | t-Statistic | P-Value  |
| C (Constant)         | 14.811                 | 1.528      | 9.692       | 0.000*** | 7.803                          | 0.941      | 8.289       | 0.000*** |
| LGDP                 | 0.198                  | 0.103      | 1.922       | 0.057*   | 0.207                          | 0.139      | 1.791       | 0.039*   |
| GE                   | 0.341                  | 0.448      | 0.762       | 0.448    | 0.460                          | 0.222      | 2.069       | 0.041*   |
| LG                   | 0.247                  | 0.054      | 4.597       | 0.000*** | 0.061                          | 0.075      | 0.809       | 0.420    |
| LPS                  | -2.235                 | 0.583      | -3.833      | 0.000*** | 1.325                          | 0.593      | 2.233       | 0.008**  |
| LRQ                  | -1.286                 | 0.268      | -4.795      | 0.000*** | -0.770                         | 0.251      | -3.069      | 0.003*** |
| FD                   | 0.035                  | 0.008      | 4.341       | 0.000*** | -0.045                         | 0.006      | -7.832      | 0.000*** |
| INF                  | -0.001                 | 0.017      | -0.058      | 0.954    | 0.012                          | 0.025      | 0.494       | 0.622    |
| LINFRA               | 0.810                  | 0.132      | 6.136       | 0.000*** | 1.372                          | 0.083      | 16.589      | 0.000*** |
| Observations         | 125                    |            |             |          | 125                            |            |             |          |
| Adjusted R2          | 0.947                  |            |             |          | 0.881                          |            |             |          |
| F-statistics         | 174.799                |            |             |          | 115.841                        |            |             |          |

Note: \*, \*\*, \*\*\* significant at 10%, 5% and 1%, respectively

The results of the fixed analysis through panel data analysis for the chosen time period are shown in Table 4. The table reports the regression coefficient, standard error, t-statistic, and p-value for each explanatory variable included in the model; a cross-sectional fixed effect is used in this research because the number of cross-sections between random effect estimators of variance must be bigger than the number of coefficients. In this study, the strategic utilization of Two-Stage Least Squares (TSLS) in conjunction with fixed effects presents a practical approach to tackle endogeneity concerns and its associated challenges. The incorporation of TSLS facilitates the estimation of causal relationships even in the presence of endogenous variables, lending greater strength and dependability to the analysis. This methodology bolsters the study's internal validity by addressing endogeneity, empowering researchers to establish more trustworthy cause-and-effect associations. The results obtained from the fixed effects model demonstrate that the regression model, with LFDI as the dependent variable, fits well with the independent variables, as the adjusted R<sup>2</sup> value is high and significant (0.94). The high value of adjusted R<sup>2</sup> indicates that the explanatory variables explain the percentage of change in the dependent variable.

This study found that the coefficient of GDP is positive, and the t-statistic is substantial with a p-value at the 10% level, indicating that the indicator is prospering as a strong determinant of FDI. The results are similar to (Kishor and Singh, 2015), who found GDP has a positive and significant impact on FDI. Vijayakumar et al. (2010), also discovered that GDP has a positive and significant impact on FDI. GDP is essential in determining the anticipated return on investment. Hence, an increase in GDP will impact FDI inflows, and foreign investors will be attracted towards host nations with massive marketplaces. This aligns with the SDGs, particularly SDG 8 (Decent Work and Economic Growth), as higher GDP reflects economic growth, which in turn increases opportunities for employment and market expansion. Therefore, an increase in GDP not only reflects economic growth but also enhances the appeal of SAARC nations to foreign investors, who are often in search of lucrative and expansive markets for their investments.

However, this analysis showed a positive but insignificant FDI outcome of GE, indicating that government effectiveness is not an influential factor for FDI. This finding is in line with a study by Erkekoglu and Kilicarslan (2016), which suggests that government effectiveness does not attract FDI and is not a potential factor for FDI. This suggests a need for improvement in governance, which is crucial for supporting SDG 16 (Peace, Justice, and Strong Institutions). Effective institutions are needed to promote economic stability and attract long-term investments.

From this study we find that the level of governance is significant and the p value is positive at 1%, indicating a significant determinant of FDI. The results of this study are consistent with Okafor et al (2017), who found that controlling corruption has a positive impact on FDI inflows. Since the coefficient is significant and the study confirms the evidence that curbing corruption is one way to positively affect FDI. By improving governance and reducing corruption, countries can align with SDG 16 by promoting transparent and accountable institutions that attract foreign investors and contribute to sustainable development, thus effective institutions with high levels of transparency will attract potential foreign investors. To reduce the cost of investment and increase profitability for the SAARC region, improving governance and reducing corruption can make the region a more attractive location for foreign investors.

We found that political stability is a strong indicator in this study as it is a significant variable with a p-value of 1% as discussed by Oke et al. (2012), political stability is a positive and significant predictor of FDI. This is directly linked to SDG 16 which emphasizes the importance of promoting peace, stability and inclusive institutions. In regions where political conditions are stable, investors are exposed to less risk associated with sudden political changes that may affect the profitability or viability of their investment. Therefore, by providing a safe environment for foreign capital, improving political stability in SAARC countries can significantly increase their attractiveness as investment destinations.

According to findings, regulatory quality significantly impacts FDI and is an effective determining factor in FDI inflows since this study found that the t-statistic is substantial and the p-value at 1%. It implies that implementing market-friendly regulations, such as price controls, reducing government interference, and allowing the free movement of capital, can enhance regulatory quality, thereby increasing inward FDI and attracting foreign investors to SAARC nations. This supports SDG 8 and SDG 9 (Industry, Innovation, and Infrastructure), as effective regulation supports both the growth of industries and sustainable infrastructure development. This finding matches the study by Jadhav and Katti (2012), which found regulatory quality statistically affects FDI. It is also consistent with the finding of Erkekoglu and Kilicarslan (2016), regulatory quality is a power determinant.

This study revealed that financial development has positive results with a p-value of 1% of significance and is a significant determinant of FDI in SAARC countries. According to Kinda (2010); and Kumar et al. (2022), financial development has a positive role in the increment of FDI. This supports SDG 8, as financial development enhances access to capital, reduces transaction costs, and supports growth in both the financial sector and the broader economy. Since it increases the capital stock, which influences growth, financial development is essential. By lowering the cost of financial transactions, which impacts the cost layout of investment projects, the degree of financial development might encourage FDI inflows in the SAARC countries.

In this analysis, the fixed model equation coefficient was negative and insignificant, indicating inflation is not a contributing factor in FDI, and these markets are not experiencing inflationary macroeconomic conditions. While research by Faroh and Shen (2015); and Xaypanya et al. (2015), revealed that less inflation draws more FDI inflows. Studies by Obiamaka et al. (2011); Omankhanlen (2011), demonstrated that it did not have any effect as low economic stability and a high degree of inflation impact the choices made by foreign investors.

The infrastructure variable has a positive and significant p-value at 1% in this analysis, highlighting the importance of increased infrastructure investment. This is directly related to SDG 9, which focuses on building resilient infrastructure and promoting sustainable industrialization. The outcomes consist of Chakrabarti et al. (2012); Fung et al. (2005), who found that the more significant FDI inflows are fascinated by countries with the best infrastructure. By investing in infrastructure, SAARC countries can create an enabling environment that improves the ease of doing business and significantly boosts their appeal to foreign investors. This contribution is precious as it identifies a clear and actionable pathway for SAARC nations to enhance their global competitiveness and economic development through strategic infrastructure enhancements.

The outcomes derived from the TSLS model indicate a favorable fit between the regression model featuring the dependent variable LFDI and the independent variable, evidenced by a notable and statistically significant adjusted R<sup>2</sup> value of 0.88. The adjusted R<sup>2</sup> value signifies that the explanatory variables effectively elucidate a substantial portion of the variance in the dependent variable. The findings align closely with those of the fixed effect model, except for the LG independent variable. In summary, the comprehensive models underscore the pivotal roles that both macroeconomic and institutional indicators play in enticing FDI, ultimately paving the way for achieving SDG.

Figure 2 depicting a scatter graph of various macroeconomic and institutional indicators and their correlations with FDI reveals the complex and multifaceted influence of these indicators on FDI, aligning with the previously obtained model results. Specifically, the positive linear relationship between GDP and FDI reinforces our model's assertion that GDP may serve as a reliable predictor of FDI levels. The scattered pattern of data points underscores this notion, suggesting that the impact of GDP on FDI varies across different contexts. The analysis substantiates our model's conclusions regarding government effectiveness and governance levels. This indicator exhibits dispersed distributions with no discernible trends, affirming our model's finding that these factors do not consistently affect variations in FDI.

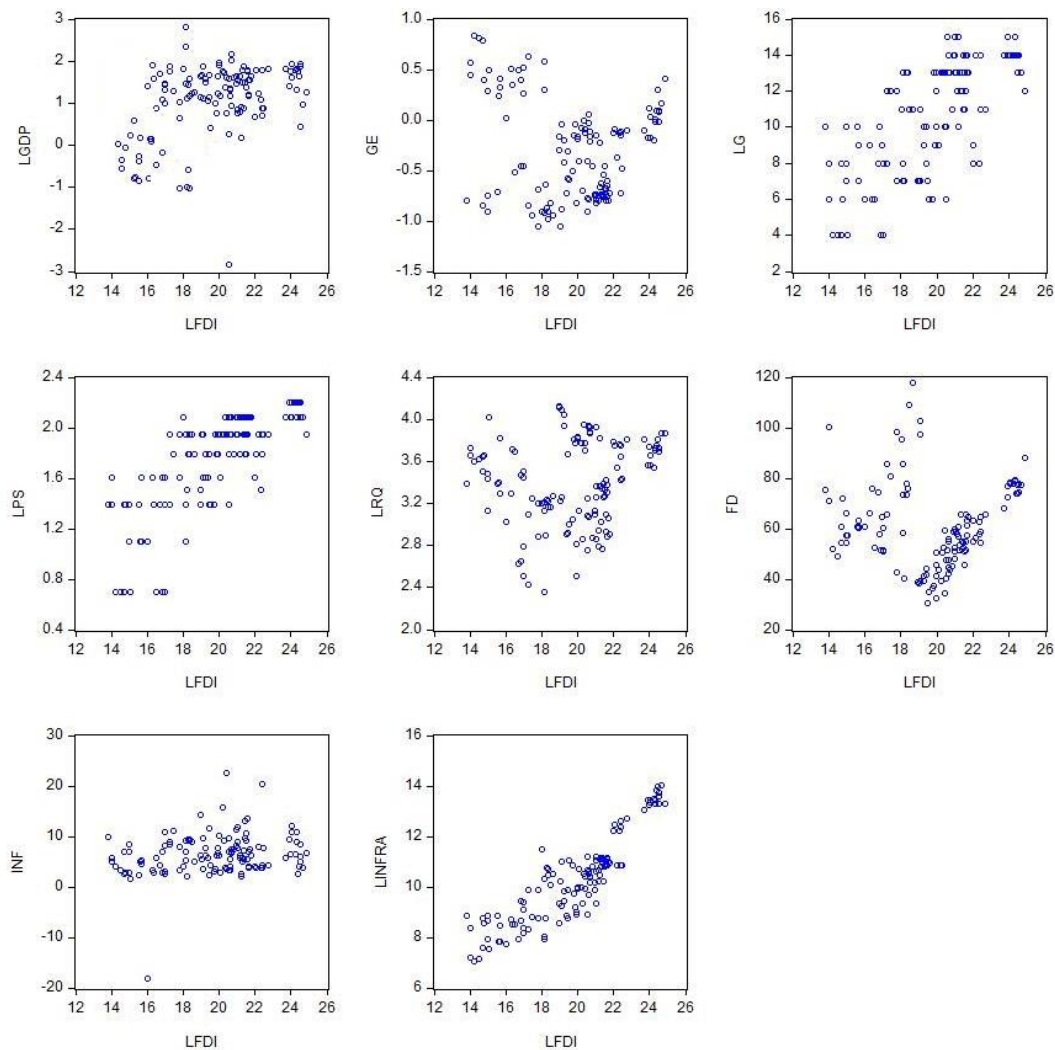


Figure 2. Linear fit scatter plot, source: Authors' own work

Conversely, metrics of political stability and infrastructure demonstrate favorable associations with FDI, as evidenced by noticeable increasing trends in both cases. These findings support the model's assertion that foreign investors tend to favor stable political environments and well-developed infrastructure. The clustering of data points in the regulatory quality analysis, as well as the positive association with FDI, strengthens our model's conclusion that strong regulatory frameworks can significantly improve a country's ability to attract foreign investment in SAARC nations.

The curvilinear relationship between financial development and FDI indicates that a certain level of financial development is best for increasing FDI inflows. This intricate interplay is consistent with our previous model findings, emphasizing the significance of a balanced approach to financial regulations in attracting FDI. Meanwhile, the ambiguous relationship between inflation rates and FDI, as evidenced by a large number of data points, supports our model's prediction that inflation's impact on FDI is nuanced and may necessitate the addition of additional variables for a complete understanding.

In this context, the analysis of these indicators not only deepens our investigation but also enhances our understanding of the resulting models for explaining the effects related to FDI in the SAARC region, emphasizing that these relationships are not straightforward. This deeper understanding underlines the need for the analysis of several factors while developing policy and investment solutions for generating the necessary conditions for FDI attraction in terms of SDG 8, Target 8.3, which is aimed at developing inclusive and sustainable economic growth and employment.

In another way, this study provides a theoretical and empirical foundation for the SAARC region's literature on economic development by synthesizing earlier findings on FDI determinants. It validates existing theories and adds to the knowledge of this study on factors affecting FDI, thereby serving as valuable reference material for policymakers seeking ways to enhance FDI in their respective countries. These strategies fit well within Sustainable Development Goal 9 (industry, innovation and infrastructure) because enhanced economic conditions and infrastructure quality may lead to higher FDI and promote innovation-driven economic development.

These strategies are made possible by enhancing the understanding of micro and macro factors that create economic conditions conducive to FDI. Out of the 17 SDGs discussed earlier in this paper as research areas of interest, the findings under goal number 16 (peace justice and strong institutions) to improve governance and fight corruption are critical in building a society that is accountable for the free inflow of investment. The study also contributes to the existing literature by shifting from the micro level to the macro level investigation of FDI determinants for regions like SAARC where systematic analysis has mostly remained unnoticed by scholars and researchers. This approach is in line with the fourth and final pillar of SDG 16, which speaks about sustainable foreign investment and reliable institutions.

Finally, this research serves as a foundation for developing policies aimed at driving economic growth in the SAARC region by improving conditions for foreign investment inflows. These policies promote sustainable economic growth and development and contribute to achieving SDG 8. With the right economic and institutional conditions, the region can attract more FDI, and promote job creation, infrastructure development and overall economic stability in the region.

Table 5. Panel data estimation results based on fixed effects (FE) Models (Robustness Check), source: Authors' own calculation

| Explanatory Variable                    | Regression Coefficient | Standard Error | t-Statistic | P-Value  |
|---|------------------------|----------------|-------------|----------|
| C (Constant)                            | 4.214                  | 1.772          | 2.377       | 0.019**  |
| LGDP                                    | 0.257                  | 0.119          | 2.151       | 0.034*   |
| GE                                      | 0.190                  | 0.520          | 0.365       | 0.716    |
| LG                                      | 0.226                  | 0.062          | 3.618       | 0.000*** |
| LPS                                     | -2.406                 | 0.676          | -3.557      | 0.001**  |
| LRQ                                     | -1.187                 | 0.311          | -3.816      | 0.000*** |
| FD                                      | 0.023                  | 0.009          | 2.473       | 0.015**  |
| INF                                     | 0.022                  | 0.019          | 1.150       | 0.253    |
| LINFRA                                  | 0.083                  | 0.153          | 0.542       | 0.589    |
| Adjusted R2 =0.608, F-statistics =11.62 |                        |                |             |          |

Note: \*, \*\*, \*\*\* significant at 10%, 5% and 1%, respectively

As a robustness test, we repeated the econometrical estimation after replacing the Dependent variable's proxy *FDI in US\$* with *FDI per GDP %*, Table 5 shows that all variables are significant, except GE, INF and LINFRA. Table 5 shows that GDP, LG, LPS, LRQ and FD are essential and effective predictors of FDI in SAARC countries. However, GE, INF, and LINFRA are not significant factors in robustness testing; they have not been validated. The results of Robustness are the same as Table 4 except with one predictor, LINFRA; Table 5 shows that the test resulted in a p-value lower than the chosen significance level of 5%, implying that the FE model is reliable and preferred. These findings indicate fantastic policy implications for increasing FDI inflows, leading to increased sustainable economic development, more excellent living standards, and prosperity.

## 5. Conclusion and policy implication

This research examines the macroeconomic and institutional factors influencing FDI inflows in six SAARC economies to achieve SDGs. The study handles a panel data analysis on a sample of six SAARC countries from 2000 to 2020, including Pakistan, India, Bangladesh, Nepal, Sri Lanka, and Bhutan. According to the findings, gross domestic product (GDP), level of governance, political stability, regulatory quality, financial development, and infrastructure are essential factors in attracting FDI. However, governance effectiveness and inflation are not significant. These findings support SDG 8 (Decent Work and Economic Growth) by identifying key economic factors that promote sustainable and inclusive growth, job creation, and productivity improvements.

The empirical results of this study are particularly appealing by adding value to policymakers in developing nations, as they use economic policy measures to attract FDI. This directly contributes to SDG 9 (Industry, Innovation, and Infrastructure), as attracting FDI and improving institutional quality can enhance infrastructure, promote industrialization, and foster innovation in the region. It has a substantial influence since it informs officials and investors on key drivers of FDI, allowing for the establishment of targeted policies to attract investment and support economic development. These SAARC countries will face the challenge of generating and maintaining sustainable growth without jeopardizing equity and using the advantages of innovation to address the economic disparity. This ties to SDG 10 (Reduced Inequalities), as policies to attract FDI can help bridge regional economic gaps and promote more equitable development.

The process of policy formulation and implementation should consider the following proposed value-addition features of FDI; political stability, tackling of corruption by use of efficiency, enhanced quality of regulation, development of technology, imparting of skills, healthier revenues for government, and policy change to encourage

improved economic performance. These benefits relate to SDG 16 concerned with peace justice and strong institutions since these improvements mainly in governance and a decrease in corruption can lead to stability and transparency in the environment for investments and thus additional appeal of SAARC countries for FDI.

Several empirical pieces of work establish that the SAARC countries should sustain moderate inflation by employing appropriate macroeconomic, monetary and adjustment policies. This is in line with the United Nations SDG 8 which speaks of decent work and economic stability for growth. The stability of an economy is preferred over economic instability by investors in an economy. In addition, the sophistication of the infrastructure in the telecommunications, energy and transport sectors means that operating costs are considerably lowered and productivity enhanced and thus these economies are attractive candidates for FDI. This highlights the essence of SDG 9, which supports the innovation of infrastructure and sustainable industrialization.

Further, it is high time that SAARC members come up with efforts to liberalize the Global trade. Relaxing the strict measures on export and import and also the reduction of bureaucratic measures and procedures can greatly increase the pace of transformation and FDI opportunities (Tahir et al., 2018). This is in concord with SDG 17 (Partnership for the Goals) which has highlighted the aspect of international cooperation for trade and investment for the achievement of the sustainably developed goals. Others that support the selection of FDI include: political and institutional stability. Overcoming such threats requires effective counter-terrorism measures and a satisfying legal framework to achieve a strong legal and institutional context to fight against corruption practices. These activities advance the outcome of SDG 9, which relates to peaceful societies and how to build and enhance institutions for sustainable development.

It is crucial to observe that FDI attraction mechanisms may also fluctuate from market to marketplace, relying on these elements. Policymakers ought to tailor their techniques consequently, emphasizing unique interventions to gain favored investment effects. In addition to policymakers, multinational enterprises (MNEs) can also use insights from these findings to understand the dynamics and potential of FDI in the SAARC region, helping them make informed decisions regarding their investment ventures. This highlights the role of SDG 17, which encourages multi-stakeholder partnerships for sustainable development.

The following suggestions are made to address the limitations of the current study. Future research should use alternative empirical strategies that focus on country-specific perspectives to improve the current study and have more targeted policy implications. A comprehensive research study should include indicators such as human capital, government quality, and women's empowerment as well as, future studies must also look at regional competency indicators such as relative market share, economic growth, corporate governance, and sectoral analysis to gain a better understanding of industry-specific FDI flows. This will contribute to SDG 5 (Gender Equality) by including a focus on women's empowerment and the role of human capital in economic development. This significant approach will improve a comprehensive understanding of FDI determinants in emerging markets, emphasizing the role of liberalization and economic policy reforms. Future research can help emerging nations attract FDI more efficiently and sustainably by overcoming these constraints and providing more accurate, meaningful, and valuable insights. This will further advance SDG 8 and SDG 9 by identifying policies that promote inclusive economic growth and foster sustainable infrastructure development.

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