



# FOREIGN DIRECT INVESTMENT SURVEILLANCE IN ASEAN: A DECADE REVIEW (2011–2020) OF TRENDS AND ITS CORRELATION WITH LITERACY, LABOR FORCE PARTICIPATION AND UNEMPLOYMENT RATES

**Mark Adrian M. Rabara, RN, M PA**

Graduate School of Business, College of Business Administration, University of the Visayas, Cebu City.

## \*Corresponding Author

**Mark Adrian M. Rabara,**  
RN, M PA

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**Abstract:** The focus of this study was on the socio-demographic factors that influence investment trends, with an assessment of the status of Foreign Direct Investment (FDI) in ASEAN member states from 2011 to 2020. To be more precise, the study investigated the distribution of age and sex, adult literacy rates, labor force participation, and unemployment rates among ASEAN countries. It analyzed distribution patterns, assessed statistical differences in FDI among countries, and investigated correlations between FDI and selected socio-demographic indicators. Additionally, it computed the mean FDI inflows per country in US\$ million over a ten-year period. The study employed secondary data from the ASEAN Secretariat and other reputable databases, utilizing a retrospective cross-sectional design with trend and correlation analyses. In order to ascertain statistical significance, Pearson's correlation tests and one-way ANOVA were implemented. The results indicated that there were substantial discrepancies in FDI inflows across ASEAN, with Singapore receiving the highest average FDI, followed by Vietnam and Indonesia. The influence of human capital on investment attractiveness was indicated by a modest but statistically significant positive correlation between adult literacy rate and FDI inflows. Although context-specific impacts were suggested by country-level variations, there was no significant linear correlation between labour force participation and unemployment and FDI. The study concludes that FDI in ASEAN is still irregularly distributed and is influenced by both structural economic factors and socio-demographic conditions. It suggests that in order to attract sustainable foreign direct investment, it is necessary to improve regulatory environments, promote sector-specific investments, and enhance education systems. These results provide policymakers with evidence-based insights to develop inclusive, targeted strategies that can promote balanced economic growth throughout the region.

**Keywords:** ASEAN economic, human capital, investment trends, socio-demographic, Southeast Asia.

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## Introduction

It has long been acknowledged that FDI, particularly in emerging nations, is a vital force behind industrial development, economic expansion, and job creation. It integrates host nations into global value chains and makes it easier for capital, technology, and knowledge to be transferred (Sadashiv, 2023). FDI is essential to strengthening regional cooperation and promoting sustainable development for the Association of Southeast Asian Nations (ASEAN), which includes Brunei Darussalam, Cambodia,

Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam (COUNCIL, 2020).

ASEAN has been one of the world's most vibrant FDI destinations during the last 20 years. By encouraging a single market and manufacturing base, strategic initiatives like the 2015 creation of the ASEAN Economic Community (AEC) have sought to improve the investment climate in the area (Heath-Brown, 2015). Because of its growing consumer markets, competitive labour force, advantageous geographic location, and legislative measures that enhance investment facilitation, the region has

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consequently drawn significant FDI inflows (Magasházi & Acheampong, 2025).

The unequal distribution of FDI inflows within ASEAN, however, reflects notable variations in the infrastructure, human capital, institutional strength, and economic growth of each nation. Because of its sophisticated financial systems, stable political environment, and strong regulatory frameworks, Singapore, for example, routinely receives the highest ranking. On the other hand, political unpredictability, a lack of human capital, and infrastructure deficiencies have made it difficult for nations like Laos and Myanmar to draw steady investment flows (Duong, 2013).

The significance of sociodemographic characteristics in determining investment attractiveness has been highlighted by academics in recent years. Proxies for labour market quality, productivity, and economic resilience include metrics like median age, gender composition, literacy rates, labour force participation, and unemployment rate (Woyo et al., 2019). While high unemployment may indicate underlying economic inefficiencies or unrealised labour potential, foreign investors frequently view a young, educated, and energetic labour population as an asset (Kalleberg, 2020).

Notwithstanding these revelations, little study has been done on the connection between FDI inflows and sociodemographic traits within ASEAN as a whole. The majority of current research concentrates on macroeconomic factors like GDP, trade openness, and inflation, frequently ignoring the relationship between investment flows and social and human capital indicators (Nunnenkamp, 2010).

By evaluating the state and pattern of FDI inflows into ASEAN nations between 2011 and 2020 and its correlation to adult literacy, labor force participation and unemployment rates, this study seeks to close that gap. The study offers a comprehensive understanding of investment trends and the socioeconomic factors that underlie them by utilizing secondary data from reliable sources including the ASEAN Secretariat.

Findings of this study will help investors, legislators, and development planners create focused plans to draw in and keep foreign direct investment. Additionally, it reinforces the importance of human capital in influencing investment choices and adds to the larger conversation on equitable and sustainable economic development in Southeast Asia.

The general objective of this study was to determine the status and trends of Foreign Direct Investment (FDI) in ASEAN member states from 2011 to 2020. Specifically, the study aimed to describe the socio-demographic profile of ASEAN countries in terms of age distribution, sex ratio, adult literacy rate, labor force participation rate, and unemployment rate. It also sought to compute the average annual FDI inflow, measured in US\$ million, for each ASEAN country over the 10-year period. Furthermore, the study aimed to analyze the distribution patterns of FDI across the region based on the computed mean investments. In addition, it aimed to determine whether there is a significant difference in the mean FDI inflows among the ASEAN member countries during the

period under review. Lastly, the study sought to assess the relationship between selected socio-economic indicators, specifically adult literacy rate, labor force participation rate, and unemployment rate, and the level of FDI inflows from 2011 to 2020.

## Theoretical and Conceptual Framework

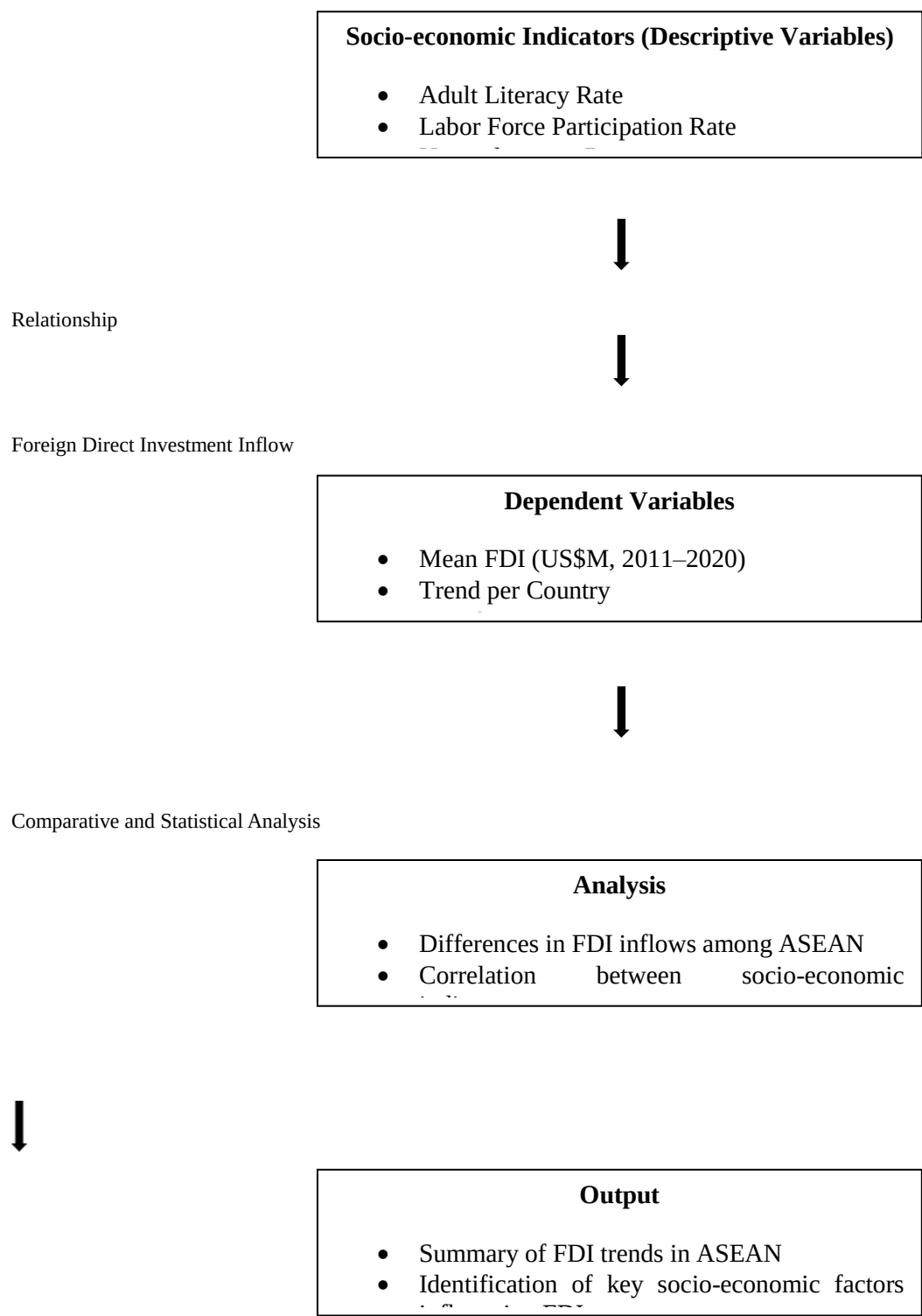
This study is anchored on Endogenous Growth Theory and Human Capital Theory, supplemented by Location Theory and Institutional Theory, to elucidate the patterns and determinants of Foreign Direct Investment (FDI) inflows in the ASEAN region from 2011 to 2020.

Endogenous Growth Theory asserts that economic growth is chiefly propelled by internal causes, notably investments in human capital, innovation, and knowledge (Romer, 1990). This idea emphasizes the significance of local capabilities, including literacy, education, and labor quality, in attracting foreign direct investment (FDI). It establishes a basis for examining the influence of socio-demographic variables (e.g., adult literacy rate and labor force participation) as predictors of FDI inflows.

Formulated by Schultz (1961) and Becker (1964), Human Capital Theory posits that a well-educated, talented, and healthy workforce augments productivity, rendering it appealing to investors. This theory substantiates the concept that nations with elevated literacy rates, enhanced labor participation, and reduced unemployment are more predisposed to attract persistent and substantial volumes of foreign direct investment, as they offer a more competitive and proficient labor market for multinational corporations.

Dunning's Eclectic Paradigm, namely the "L" component (Location), posits that corporations select foreign direct investment (FDI) locations based on country-specific benefits, including labor availability, infrastructure, market size, and regulatory conditions (Dunning, 1981). ASEAN nations exhibiting advantageous socio-demographic conditions—such as a youthful demographic, low unemployment rates, and elevated literacy levels—can provide locational benefits that impact foreign direct investment decisions.

This conceptual framework, as presented in Figure 1, highlights the hypothesized causal influence of socio-economic indicators, specifically adult literacy rate, labor force participation rate, and unemployment rate, on foreign direct investment (FDI) inflows among ASEAN member countries over a 10-year period. These socio-economic variables are treated as independent factors that may enhance or deter foreign investment decisions, thus influencing the volume and trend of FDI received by each country. The central element of the study is the FDI inflow, measured in terms of mean US\$ million per country, which serves as the dependent variable. The study also involves comparative analysis to determine whether significant differences exist in FDI distribution and whether statistical relationships are present between FDI and the identified socio-economic indicators. This framework serves as a foundation for evaluating the impact of internal national conditions on foreign investment performance across the ASEAN region.



**Figure 1.** Conceptual framework of the study.

## Methodology

### Research Design

This study employed a retrospective cross-sectional research approach, supplemented with trend and correlation analysis, utilising secondary data from reputable sources, including the ASEAN Secretariat. The study examined the timeframe from 2011 to 2020, investigating temporal trends of FDI inflows in ASEAN member countries.

This scientific technique proved suitable for analysing economic and social data across several countries across time. Retrospective cross-sectional designs were frequently utilised in economic and development research to examine historical patterns and connections through pre-existing information (Setia, 2016). This study utilised credible secondary data to elucidate the determinants of foreign direct investment (FDI) and to offer evidence-based policy suggestions for sustained economic growth in the ASEAN region.

### Research Setting

This study was set within the context of the Association of Southeast Asian Nations (ASEAN), which consists of 10 member states: Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic (Laos), Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. These nations, although unified within a regional economic and political framework, exhibit a broad array of economic systems, stages of development, and investment environments.

Brunei Darussalam, a high-income, oil-rich country, has undertaken economic diversification initiatives to attract foreign direct investment in finance, food processing, and tourism. Cambodia and Laos, as burgeoning economies, have concentrated on industry, agriculture, and infrastructure to enhance foreign direct investment growth. Indonesia, the preeminent economy in Southeast Asia, has an extensive consumer market and resource-abundant industries, establishing it as a significant recipient of regional investment.

Malaysia has continually drawn foreign direct investment in high-value industries such as electronics, healthcare, and green technology. Conversely, Myanmar, although facing political and economic obstacles, has recently liberalised its economy to foreign investors, particularly in the energy and telecommunications sectors. The Philippines, possessing a substantial English-speaking labour pool, has emerged as a centre for business process outsourcing (BPO) and service-oriented investments.

Singapore distinguishes itself as one of the most sophisticated and business-friendly economies in ASEAN, functioning as a regional financial hub and a premier destination for global foreign direct investment (FDI). Thailand, possessing a robust infrastructure and a formidable industrial sector, has garnered substantial foreign investment in the automotive and electronics industries. Vietnam has become a rapidly expanding foreign direct investment hub, especially in electronics, textiles, and renewable energy, propelled by its stable economic growth and investor-friendly policies.

The inclusion of all ten ASEAN nations facilitated a thorough and comparative evaluation of FDI trends, patterns, and

the socio-demographic factors influencing various economic environments. The regional focus enhanced the study's significance in recognising common possibilities and policy deficiencies in advancing sustainable investment throughout Southeast Asia.

### Study Population

The study population comprised the 10 member nations of the Association of Southeast Asian Nations (ASEAN): Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic (Laos), Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. The selected nations serve as the principal units of study for evaluating Foreign Direct Investment (FDI) patterns and socio-demographic indicators throughout a decade, from 2011 to 2020.

The demographic data utilised in this study was sourced from secondary materials, specifically from official publications and statistics databases of the ASEAN Secretariat. The materials encompassed detailed country-specific reports and consolidated figures on FDI inflows (in US\$ million), alongside demographic and labor-related metrics including median age, gender distribution, adult literacy rate, labour force participation rate, and unemployment rate.

The analysis contained only data entries that were consistently recorded, confirmed, and provided by the ASEAN Secretariat within the designated time range. This inclusion criterion guaranteed the dependability and comparability of data across nations and over time. The study population encompassed the whole ASEAN region, as recorded in the ASEAN Secretariat's statistical reports, which functioned as the definitive source for tracking economic integration and investment trends in Southeast Asia.

### Risk and Benefits

This research employed secondary data as the principal source for data acquisition. Secondary data denotes information that has been previously gathered for different objectives yet remains pertinent and useful to the current research aims. The data were sourced from publicly accessible and sanctioned databases managed by the ASEAN Secretariat, encompassing official statistical reports on Foreign Direct Investment (FDI) inflows and essential socio-demographic indicators from 2011 to 2020.

The study exclusively utilized aggregated, country-level data—including mean FDI inflows (in US\$ million), demographic age distribution, literacy rates, labour force participation, and unemployment—thus omitting any individual-level or individually identifiable information. Consequently, matters of privacy or patient confidentiality were irrelevant. The researcher acknowledged the significance of upholding academic integrity and the responsible utilisation of data by ensuring all sources were accurately credited and that data were employed solely for research purposes.

The utilization of secondary data in economic and policy research is broadly seen as ethical and pragmatic, especially when sourced from credible and transparent entities such as the ASEAN Secretariat. To maintain research integrity, the following principles were adhered to: (1) exclusively officially published and publicly accessible data were utilised; (2) no alteration or misrepresentation of the data transpired; (3) the findings and interpretations were

grounded in objective and verifiable analysis; and (4) the research circumvented any potential misuse of data that could result in erroneous conclusions or policy ramifications.

### Research Instrument

The data for this study were only sourced from secondary materials to guarantee correctness, dependability, and uniformity throughout the ASEAN area. Due to the macroeconomic focus of the research on Foreign Direct Investment (FDI) patterns and socio-demographic indicators from 2011 to 2020, primary data collection was unnecessary.

The principal source of secondary data was the official statistical database and associated publications of the ASEAN Secretariat. These comprised annual foreign direct investment reports, nation profiles, and updates on regional economic integration. The data obtained from this source encompassed FDI inflows (in US\$ million) for each ASEAN member nation, alongside essential socio-demographic characteristics including median age, gender distribution, adult literacy rate, labour force participation rate, and unemployment rate.

### Data Collection Procedure

**Ethical Authorisation.** Before initiating this investigation, ethical approval was obtained from the Institutional Ethics Review Board (IERB) of the Northern Mindanao Medical Centre. This phase assured that the research adhered to established ethical standards in academic studies, especially with the utilisation of secondary data on national and regional economic indicators.

This study did not engage human participants or collect personal, sensitive, or identifiable information; hence, individual agreement was unnecessary. The data employed, including Foreign Direct Investment (FDI) inflows, demographic profiles, and labour force statistics, were sourced from publicly available and officially published materials, such as those from the ASEAN Secretariat.

In accordance with Republic Act 10173, known as the Data Privacy Act of 2012, the researcher maintained the standards of ethical data management throughout the study. The measures encompassed: (1) mitigating harm by ensuring accurate and non-misleading interpretations and policy implications from the data; (2) preserving confidentiality through the use of aggregated, non-identifiable national data; (3) eschewing deceptive practices by appropriately citing all data sources and transparently presenting the findings. The study complied with ethical research standards while providing evidence-based insights into FDI patterns and their socio-demographic correlates among ASEAN member states.

**Data Extraction.** The data extraction for this investigation was performed in full accordance with ethical and methodological norms to guarantee correctness, transparency, and dependability. The research utilised secondary, aggregated data from official sources, hence no personal or identifiable information was gathered. All utilised data were publicly disclosed at the country level by entities such as the ASEAN Secretariat, so mitigating any risk to individual confidentiality.

A standardised Data Extraction Form was created to systematically gather pertinent variables from all ASEAN member states. This methodology guaranteed uniformity in data collection and enabled international comparisons. Extracted key variables included: (1) Economic indicators: Foreign Direct Investment (FDI) inflows in

US\$ million annually; (2) Socio-demographic indicators: median age, sex distribution, adult literacy rate, labour force participation rate, and unemployment rate; (3) Temporal scope: data covering the years 2011 to 2020.

This systematic extraction procedure facilitated the assembly of a uniform dataset appropriate for trend analysis, statistical comparison, and correlation testing. All extracted data were systematically organised and analysed in alignment with the study's aims, while upholding ethical integrity and adherence to data utilisation standards in public economic research.

**Data Handling.** To uphold the utmost standards of data integrity and ethical research practices, all data utilised in this study were meticulously managed in strict accordance with academic and institutional data management rules. The research solely employed publicly accessible, aggregated secondary data from credible sources, including the ASEAN Secretariat, and did not involve any personal or identifiable information at any point.

Due to the absence of individual-level data in the study, anonymisation via coding or the elimination of personal identification was unnecessary. The generated datasets were securely maintained in a password-protected digital environment, accessible solely to authorised research workers. Data files were meticulously organised, backed up, and utilised exclusively for scholarly purposes.

The secondary data gathered for this study will be preserved for six months after the investigation concludes. Subsequent to this timeframe, all electronic data files will be irrevocably eliminated utilising safe digital erasure methods that adhere to industry best practices. Should printed reference materials be produced, they will be disposed of securely by confidential shredding to avert abuse or unauthorised access.

**Data Management.** A meticulous and methodical approach was employed in managing the data for this study to maintain the highest standards of ethical and academic integrity. The dataset, consisting of secondary data on Foreign Direct Investment (FDI) and socio-demographic characteristics across ASEAN member states from 2011 to 2020, was meticulously examined and refined to guarantee completeness, correctness, and consistency.

The data cleaning process encompassed the discovery and rectification of missing values, outliers, and any anomalies within country-level information. Any differences identified during the process were corroborated with the original source papers from esteemed institutions, including the ASEAN Secretariat, World Bank, and UNCTAD. This process guaranteed the dataset's internal consistency and maintained its integrity for effective statistical analysis.

### Data Analysis Plan

The socio-demographic profiles of ASEAN member states were examined utilizing pertinent descriptive metrics. Data regarding age and sex distribution were encapsulated in a frequency distribution (number of individuals in thousands) each country. Concurrently, metrics such as adult literacy rate, labour force participation rate, and unemployment rate were expressed as percentages.

The Foreign Direct Investment (FDI) inflows, quantified in US\$ million (US\$M) for each ASEAN country over a decade, were

evaluated by calculating the mean for each nation to determine the average investment levels and the variability of FDI.

Data on Foreign Direct Investment (FDI) inflows across the decade (2011–2020) were utilized to conduct a time series analysis. To commence the research, time series line graphs were generated for each ASEAN member nation to visually assess the trends and variations in FDI across the decade. This visual depiction facilitated the identification of investment trends, surges, and possible phases of decline or expansion. Subsequently, essential descriptive statistics, encompassing the mean FDI inflows of each country, were computed to encapsulate central patterns and variability across time. The investigation examined annual trends to identify short-term patterns and emphasize notable year-to-year variations.

To ascertain if there are significant disparities in the mean FDI inflows (in US\$ million) among ASEAN member nations over the decade, a One-Way Analysis of Variance (ANOVA) at  $\alpha=0.05$  was performed. Subsequent to a notable ANOVA outcome, a Post Hoc analysis employing Tukey's Honestly Significant Difference (HSD) test was conducted to ascertain which individual nation pairs demonstrated statistically significant disparities in their mean FDI inflows. On the other hand, to determine if there is a significant relationship between adult literacy rate, labor force participation rate, unemployment rate and foreign direct investment inflow over the 10-year period, Pearson's Correlation Analysis was used. All statistical analyses were conducted using Paleontological Statistics Software version 3.17.

## Results and Discussions

Foreign Direct Investment (FDI) is a critical factor in the expansion of the ASEAN economy, as it affects the transmission of

technology, the creation of jobs, and the development of the region. It is essential to understand the variables that influence foreign direct investment (FDI) inflows in order to develop economically viable policies.

The objective of this investigation is to evaluate the status of foreign direct investment (FDI) in ASEAN member states from 2011 to 2020. It commences by conducting an analysis of the socio-demographic profile of each nation, which encompasses age, sex, adult literacy rate, labour force participation, and unemployment. It also calculates the average FDI inflow per country, analyses distribution patterns, compares FDI inflows between countries, and investigates the relationship between FDI and important socio-economic indicators.

The results are presented in the subsequent segment, which commences with the socio-demographic characteristics of the ASEAN countries.

### Age profile of ASEAN member countries

Table 1 illustrates the age distribution of populations (in thousands) across ASEAN member nations as of 2020. The data encompasses five age categories: 0–4 years, 5–19 years, 20–54 years, 55–64 years, and 65 years and older. The age distribution is essential for comprehending a nation's demographic profile, which profoundly influences its labour force, economic productivity, and healthcare requirements.

The predominant demographic across all ASEAN nations is the working-age population (20–54 years), with 335.39 million inhabitants. Indonesia contributes 141.57 million, or over 42% of the region's working-age population. The Philippines, Vietnam, and Thailand possess significant working-age populations.

**Table 1.** Socio-demographic profile of ASEAN member countries in 2020 in terms of age group based on frequency distribution (number of people in thousands).

| Country      | Age Group       |                  |                  |                 |                 |
|--------------|-----------------|------------------|------------------|-----------------|-----------------|
|              | 0-4             | 5-19             | 20-54            | 55-64           | 65 above        |
| Brunei       | 30.7            | 95.9             | 260.0            | 39.8            | 27.2            |
| Cambodia     | 1,559.1         | 4,716.4          | 7,896.5          | 1,187.1         | 978.9           |
| Indonesia    | 22,072.5        | 66,602.8         | 141,565.8        | 23,330.3        | 16,632.4        |
| Laos         | 769.2           | 2,222.8          | 3,517.7          | 428.8           | 322.7           |
| Malaysia     | 2,531.0         | 7,882.4          | 17,203.5         | 2,674.7         | 2,292.3         |
| Myanmar      | 4,997.0         | 14,847.4         | 26,756.0         | 4,609.5         | 3,607.4         |
| Philippines  | 11,064.7        | 32,228.4         | 51,776.0         | 7,587.1         | 6,115.8         |
| Singapore    | 183.1           | 620.4            | 2,035.9          | 590.5           | 614.4           |
| Thailand     | 3,653.9         | 12,132.4         | 34,344.4         | 9,150.3         | 8,846.7         |
| Vietnam      | 7,683.4         | 22,558.8         | 50,029.4         | 9,491.4         | 7,819.8         |
| <b>TOTAL</b> | <b>54,545.2</b> | <b>163,907.7</b> | <b>335,385.2</b> | <b>59,089.5</b> | <b>47,257.6</b> |

The data indicates the "demographic dividend" being experienced by numerous ASEAN countries, characterised by a working-age population surpassing dependent age groups. Bloom et al. (2003) assert that this demographic structure can enhance economic productivity and growth when complemented by suitable investments in education, health, and employment opportunities.

The youth demographic (ages 0–19) is substantial, with 54.5 million individuals aged 0–4 and 163.9 million aged 5–19, accounting for approximately 39.8% of the total regional population. The Philippines and Indonesia possess the largest youth populations, underscoring significant future labour force potential.

These statistics indicate that the educational frameworks in these nations must be resilient and inclusive to equip the youth for economic engagement. UNICEF (2021) underscored that nations with substantial youth demographics must allocate resources towards excellent education, internet accessibility, and skills development to prevent future unemployment and underemployment.

Countries such as Thailand and Singapore exhibit comparatively elevated figures in the senior age categories (55–64 and 65+). Thailand has 18 million individuals aged 55 and over, signifying a transition towards an ageing society. Singapore has a greater population of individuals aged 65 and over (614.4k) compared to those aged 0–4 (183.1k), indicating a decreasing birth rate and an increased life expectancy.

The United Nations (2019) indicates that ASEAN's demographic landscape is transitioning, with more developed economies such as Singapore, Thailand, and Malaysia seeing an ageing population, necessitating adjustments in pension systems, eldercare, and workforce regulations.

#### Sex Profile of ASEAN member countries

Table 2 illustrates the gender distribution of ASEAN member nations in 2020, based on total population figures in thousands. The overall male population in the region was 330.25 million, whilst the female population was 329.94 million, indicating a virtually balanced gender ratio of around 1.00 male to 1.00 female throughout the territory.

Notable variances exist at the national level. Indonesia and the Philippines exhibit a higher male population than female, aligning with nations characterised by substantial, youthful demographics and elevated birth rates. Myanmar, Singapore, Thailand, and Vietnam exhibit a higher female population compared to males, likely indicative of extended female life expectancy and migration trends. Brunei exhibits a significant male predominance, likely attributable to the influx of foreign male labourers in the oil and gas industry.

The data reveals regional gender parity, with a marginal male majority of approximately 310,000 inhabitants. This corresponds with global patterns, wherein natural sex ratios at birth typically approximate 1:1 and tend to equilibrate over time due to varying death rates (United Nations, 2019).

**Table 2.** Socio-demographic profile of ASEAN member countries in 2020 in terms of sex based on frequency distribution (number of people in thousands).

| Country      | Sex              |                  |
|--------------|------------------|------------------|
|              | Male             | Female           |
| Brunei       | 240.7            | 212.9            |
| Cambodia     | 7,960.0          | 8,378.1          |
| Indonesia    | 136,661.9        | 133,542.0        |
| Laos         | 3,653.0          | 3,608.2          |
| Malaysia     | 16,763.0         | 15,820.9         |
| Myanmar      | 26,253.0         | 28,564.9         |
| Philippines  | 54,935.8         | 53,836.1         |
| Singapore    | 1,977.6          | 2,066.7          |
| Thailand     | 33,208.9         | 34,918.9         |
| Vietnam      | 48,594.0         | 48,988.7         |
| <b>TOTAL</b> | <b>330,247.9</b> | <b>329,937.4</b> |

#### Adult Literacy, Labor Force Participation and Unemployment Rates

Table 3 delineates three principal socio-demographic variables among ASEAN member nations during a decade (2011–2020): adult literacy rate, labour force participation rate, and unemployment rate. These metrics offer insights into the quality of human capital, economic participation, and job conditions—all essential for attracting and maintaining Foreign Direct Investment (FDI). The majority of ASEAN nations demonstrate elevated adult

literacy rates, with Singapore (96.88%), Brunei (96.87%), and the Philippines (96.35%) leading the rankings. Laos (77.59%) and Cambodia (81.13%) are below the regional average. Elevated literacy rates are significantly associated with workforce productivity and creativity, both of which appeal to foreign investors (OECD, 2018). This indicates that nations with elevated literacy rates may possess a comparative advantage in knowledge-intensive ventures.

**Table 3.** Socio-demographic profile of ASEAN member countries in terms of adult literacy rate, labor force participation rate, and unemployment rate over the 10-year period (2011-2020).

| Country     | Socio-demographic Profile |                                    |                       |
|-------------|---------------------------|------------------------------------|-----------------------|
|             | Adult Literacy Rate (%)   | Labor Force Participation Rate (%) | Unemployment Rate (%) |
| Brunei      | 96.87                     | 66.32                              | 8.29                  |
| Cambodia    | 81.13                     | 81.48                              | 0.46                  |
| Indonesia   | 94.81                     | 66.94                              | 6.06                  |
| Laos        | 77.59                     | 54.4                               | 9.4                   |
| Malaysia    | 94.49                     | 67.4                               | 3.31                  |
| Myanmar     | 89.37                     | 63.47                              | 2.48                  |
| Philippines | 96.35                     | 62.66                              | 6.61                  |
| Singapore   | 96.88                     | 67.42                              | 3.02                  |
| Thailand    | 93.68                     | 69.52                              | 0.98                  |
| Vietnam     | 95.07                     | 76.9                               | 2.2                   |

The labour force participation rate exhibits considerable variability. Cambodia (81.48%) and Vietnam (76.9%) exhibit the highest levels of participation, signifying a substantial percentage of the working-age population is economically active. Laos (54.4%) and the Philippines (62.66%) have the lowest rates, potentially indicative of obstacles such as restricted employment possibilities, informal labour, or gender inequalities in workforce engagement. Elevated participation rates are frequently associated with robust local labour markets and enhanced foreign direct investment possibilities, as investors seek an engaged and accessible workforce (World Bank, 2020).

The rates of unemployment also fluctuate. Cambodia (0.46%) and Thailand (0.98%) exhibit significantly low jobless rates. Laos (9.4%) and Brunei (8.29%) exhibit the highest unemployment rates, perhaps raising investor concerns around labour underutilisation or economic inflexibility. While low

unemployment typically indicates stability, excessively low rates may imply insufficient labour mobility or underemployment.

#### Foreign Direct Investment inflow ASEAN member countries

Table 4 displays the average yearly foreign direct investment (FDI) inflow (in US\$ million) received by each ASEAN nation during a decade from 2011 to 2020. The data indicates substantial inequalities in the distribution of foreign direct investment across the region.

Singapore achieved the largest average FDI inflow at US\$72,526.5 million, much above that of all other ASEAN nations. This dominance underlines Singapore's status as a global financial centre, characterised by robust legal frameworks, a stable political climate, and pro-business policies (UNCTAD, 2021). Their strategic location and sophisticated services sector also draw substantial investment.

**Table 4.** Mean Foreign Direct Investment inflow in terms of US\$ million (US\$M) per country in ASEAN over the 10-year period (2011-2020).

| Country     | Mean      |
|-------------|-----------|
| Brunei      | 531.71    |
| Cambodia    | 2,291.54  |
| Indonesia   | 18,253.25 |
| Laos        | 903.26    |
| Malaysia    | 9,413.22  |
| Myanmar     | 2,234.12  |
| Philippines | 6,366.8   |
| Singapore   | 72,526.5  |
| Thailand    | 7,011.58  |
| Vietnam     | 11,990.71 |

Countries like Indonesia (US\$18,253.25M), Vietnam (US\$11,990.71M), and Malaysia (US\$9,413.22M) attracted

significant foreign direct investment, influenced by: extensive domestic markets (Indonesia), competitive manufacturing

industries (Vietnam), and advanced infrastructure coupled with regional integration (Malaysia). These nations have vigorously advocated for foreign direct investment via reforms, industrialisation initiatives, and integration into global supply chains.

The Philippines (US\$6,366.8M) and Thailand (US\$7,011.58M) had moderate amounts of foreign direct investment, notwithstanding their robust human resources and advantageous geographic positions. This indicates the possibility for expansion if the policy and investment climates are enhanced.

Countries such as Brunei (US\$531.71M), Laos (US\$903.26M), Myanmar (US\$2,234.12M), and Cambodia (US\$2,291.54M) exhibited diminished FDI inflows, maybe attributable to constrained markets, political instability, inadequate infrastructure, or insufficient diversification. The fluctuation in FDI inflow indicates that ASEAN nations are at varying levels of investment preparedness.

Developed economies such as Singapore and Malaysia maintain their leadership, whilst rising economies like Vietnam and Indonesia exhibit significant upward trajectories. Countries with low foreign direct investment may boost their appeal to foreign investors by improving governance, infrastructure, and education.

#### Distribution Patterns in FDI across ASEAN member countries

Figure 2 depicts the yearly trends in Foreign Direct Investment (FDI) inflows (in US\$ million) for ASEAN nations from 2010 to 2020. The data reveals significant disparities in investment volumes and volatility across member nations.

Singapore continuously attracted the most foreign direct investment, ranging from approximately US\$90 billion to US\$170 billion during the time. Significant peaks were observed in 2017 and 2018, presumably attributable to heightened investments in the banking and service sectors, alongside a stable, business-friendly climate (UNCTAD, 2021).

Vietnam and Thailand exhibit a consistent increasing trajectory, marked by significant peaks in 2017 and 2019. The growth of Vietnam is attributable to its robust industrial sector, economic reforms, and trade agreements such as the EU-Vietnam Free Trade Agreement (EVFTA). The World Bank (2020) observed that Vietnam's increase in foreign direct investment corresponds with its inclusion into global value chains.

Malaysia, Indonesia, and the Philippines have experienced moderate and relatively constant foreign direct investment inflows during the past decade. These nations advantageously possess extensive domestic markets, abundant resources, and governmental incentives for investors. Variations in these nations indicate susceptibility to global economic transitions and domestic policy alterations.

Cambodia, Laos, Brunei, and Myanmar persistently exhibit poor foreign direct investment inflows, remaining below US\$10 billion annually. Their constrained industrial capability, political volatility, or reduced market size may dissuade significant international investors. Myanmar saw growth up to 2016; but, patterns presumably deteriorated during 2017 due to internal turmoil.

The graph indicates a decline in 2020 throughout the majority of countries, aligning with the global deceleration attributed to the COVID-19 pandemic. Countries with diversified economies and robust digital sectors, such as Singapore and Vietnam, demonstrated greater resilience. The graph illustrates the disproportionate allocation of foreign direct investment in ASEAN. Countries such as Singapore and Vietnam excel owing to advantageous investment environments, whilst others fall short due to structural or political impediments. Comprehending these tendencies is crucial for policy reform and regional collaboration to secure more equal investment.

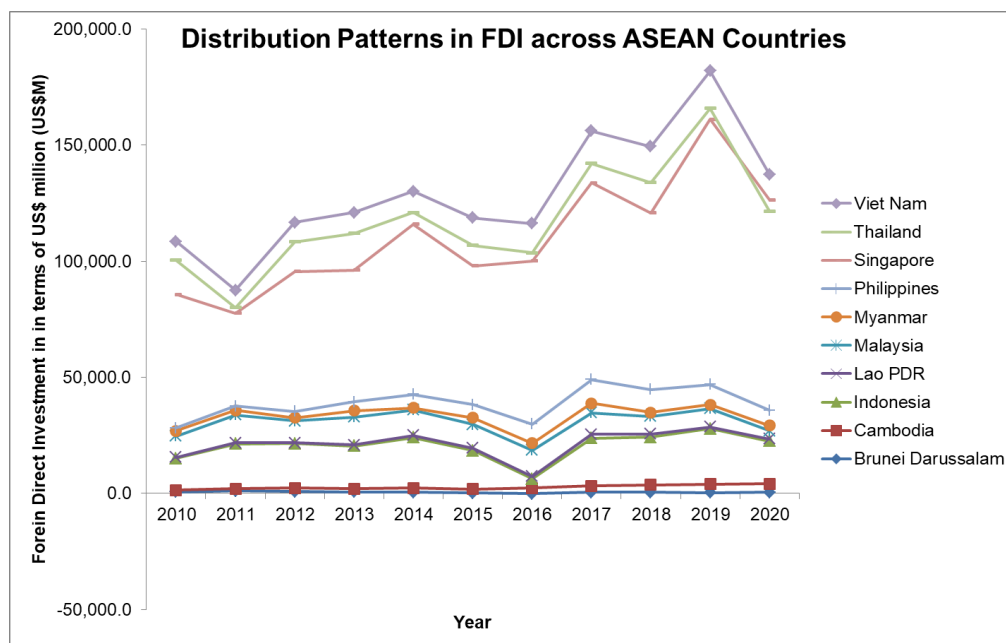


Figure 2. Distribution patterns in FDI across ASEAN countries based on the mean investments.

### Test on significant difference in the mean FDI inflow between each country in ASEAN

The one-way Analysis of Variance (ANOVA) presented in Table 5 indicates a statistically significant disparity in the mean Foreign Direct Investment (FDI) inflows among ASEAN member nations from 2011 to 2020 ( $F = 88.86$ ,  $p = 7.245E-41 < 0.05$ ). This data evidence substantiates that not all ASEAN nations garnered equivalent levels of foreign investment during the decade.

This corresponds with Dunning's Eclectic Paradigm (OLI Framework), which asserts that foreign direct investment inflows are predominantly affected by ownership-specific benefits, location-specific characteristics, and internalisation incentives (Dunning, 1993). The ASEAN nations exhibit considerable variation in market size, infrastructure, political stability, and human capital, all of which influence their appeal to investors.

**Table 5.** One-Way Analysis of Variance (ANOVA) results on the significant difference in the mean FDI inflow in terms of US\$ million (US\$M) between each country in ASEAN over the 10-year period.

|                | Sum of Squares | df | Mean Square | <i>F</i> | <i>p value</i> |
|----------------|----------------|----|-------------|----------|----------------|
| Between groups | 4.19688E10     | 9  | 4.6632E09   | 88.86    | 7.245E-41*     |
| Within groups  | 4.72299E09     | 90 | 5.24776E07  |          |                |
| Total          | 4.66918E10     | 99 |             |          |                |

\*Significant at  $\alpha=0.05$ .

The post hoc analysis employing Tukey's Honestly Significant Difference (HSD) test delineates the nations whose FDI inflows exhibit significant differences, as illustrated in Table 6. Singapore is the leading recipient of foreign direct investment, exhibiting significantly greater inflows than any other ASEAN nations ( $p < 0.05$  in all comparisons). This corroborates previous findings that Singapore's sophisticated financial system, effective regulatory framework, and political stability render it a favoured locale for international investors (UNCTAD, 2021; World Bank, 2020).

Indonesia and Vietnam have markedly higher foreign direct investment (FDI) compared to other ASEAN counterparts, indicative of their substantial consumer markets, export-driven

economic strategies, and burgeoning industrial and manufacturing sectors. The Asian Development Bank (2019) asserts that Vietnam's trade liberalisation and reformative measures have significantly stimulated investor interest.

Conversely, Brunei, Laos, Cambodia, and Myanmar continuously draw lower FDI inflows, exhibiting no substantial disparities among countries, which suggests a uniformly limited appeal attributable to smaller markets, governance challenges, or less diversified economies. Reside (2017) highlights that foreign direct investment in smaller ASEAN economies is frequently hindered by legislative uncertainty, infrastructural deficiencies, and inadequate institutional quality.

**Table 6.** Tukey's Honestly Significant Difference (HSD) result on which individual nation pairs demonstrated statistically significant disparities in their mean FDI inflows.

|            | Brunei | Cambodia | Indonesia | Laos     | Malaysia | Myanmar | Philippines | Singapore | Thailand | Vietnam |
|------------|--------|----------|-----------|----------|----------|---------|-------------|-----------|----------|---------|
| Brunei     | -      | 0.999    | 1.72E-05* | 1        | 0.173    | 0.999   | 0.733       | 4.3E-10*  | 0.601    | 0.021*  |
| Cambodia   |        | -        | 0.000*    | 1        | 0.466    | 1       | 0.960       | 4.3E-10*  | 0.905    | 0.096   |
| Indonesia  |        |          | -         | 2.0E-05* | 0.178    | 0.000*  | 0.014*      | 4.3E-10*  | 0.027*   | 0.647   |
| Laos       |        |          |           | -        | 0.221    | 1       | 0.800       | 4.3E-10*  | 0.679    | 0.030*  |
| Malaysia   |        |          |           |          | -        | 0.454   | 0.995       | 4.3E-10*  | 0.999    | 0.999   |
| Myanmar    |        |          |           |          |          | -       | 0.957       | 4.3E-10*  | 0.899    | 0.092   |
| Philippine |        |          |           |          |          |         | -           | 4.3E-10*  | 1        | 0.772   |
| Singapore  |        |          |           |          |          |         |             | -         | 4.3E10*  | 4.3E10* |
| Thailand   |        |          |           |          |          |         |             |           | -        | 0.874   |
| Vietnam    |        |          |           |          |          |         |             |           |          | -       |

\*Significant at  $\alpha=0.05$ .

The findings indicate a polarised distribution of FDI within ASEAN, with Singapore, Indonesia, and Vietnam continuously surpassing their counterparts. These discrepancies highlight the necessity for lower-FDI recipient nations to enhance their investment environments via reforms in governance, infrastructure, education, and business facilitation.

Moreover, the results substantiate the perspective that foreign direct investment (FDI) is not uniformly allocated even within regional organisations such as ASEAN, but is instead focused in nations that provide both economic scale and institutional robustness (Athukorala & Hill, 2010).

#### Test on significant relationship between socio-demographic and foreign direct investment

**Table 7.** Pearson's Correlation Analysis results on the significant relationship between adult literacy rate, labor force participation rate, unemployment rate and foreign direct investment inflow over the 10-year period.

| x-axis              | y-axis                    | r-value | p-value | Relationship Type |
|---------------------|---------------------------|---------|---------|-------------------|
| Adult Literacy Rate | Foreign Direct Investment | 0.364   | 0.0005* | Weak              |
| Labor Force Rate    | Foreign Direct Investment | 0.045   | 0.650   | Weak              |
| Unemployment Rate   | Foreign Direct Investment | -0.163  | 0.103   | Weak              |

**Note:** Pearson's Correlation Coefficient (r), Strong relationship ( $r > 0.70$ ), Moderate relationship ( $r > 0.50$ ), Weak relationship ( $r < 0.50$ ), \* shows significant relationship ( $p < 0.05$ ).

There is no statistically significant correlation between FDI inflow and the labour force participation rate ( $r = 0.045$ ,  $p = 0.650$ ). The relationship between FDI and labour force participation is not statistically significant. This suggests that the sheer existence of workers does not always translate into more foreign direct investment, especially when other elements like productivity, skill level, or the effectiveness of regulations are lacking.

This is in line with UNCTAD (2021), which underlines that cost-effectiveness, efficiency, and skill levels must be combined with workforce quantity to attract investment.

Unemployment and FDI influx have a weakly negative, non-significant association. This implies that there may be a weak correlation between reduced FDI and higher unemployment, but the relationship is not statistically significant. This may be an indication that investors are more likely to avoid economies with high unemployment or unstable labour markets, but it also raises the possibility that other structural factors, like infrastructure, levels of corruption, and ease of doing business, may be more important. FDI is more sensitive to institutional and regulatory settings than to broad labour market variables like unemployment, according to studies like Reside (2017).

The study's findings show a clear disparity in foreign direct investment (FDI) inflows among ASEAN nations, which can be attributed to a number of institutional and sociodemographic factors. Because of their stable administration, strong human resources, and investor-friendly conditions, Singapore, Vietnam, and Indonesia have been able to draw significant sums of foreign direct investment (FDI). On the other hand, structural barriers limit

Table 7 displays the findings of Pearson's correlation analysis investigating the association between FDI inflow and three socio-demographic indicators: adult literacy rate, labour force participation rate, and unemployment rate, across the decade from 2011 to 2020. The Adult Literacy Rate and FDI Inflow ( $r = 0.364$ ,  $p = 0.0005$ ) indicate a substantial but weak positive correlation. This outcome indicates that an increase in adult literacy rates is associated with a rise in FDI inflows, while the correlation is weak. This substantiates the notion that the calibre of human capital, even when assessed by fundamental education such as reading, influences the attraction of foreign investors. Borensztein, De Gregorio, and Lee (1998) assert that foreign direct investment (FDI) is often more productive and prevalent in nations with elevated human capital, as international enterprises typically pursue a trained and adaptable labour force.

the attractiveness of investment in less successful nations like Brunei, Laos, and Myanmar.

The weak but substantial association between adult literacy and FDI highlights the importance of investing in human capital development, especially in education and skills training. However, the lack of a robust relationship with unemployment and labour force participation suggests that worker productivity and quality, rather than availability, have a greater impact on FDI.

According to these findings, policymakers should give priority to strengthening institutional governance and infrastructure, establishing clear, predictable, and effective regulatory frameworks, and improving workforce skills and education systems if ASEAN is to achieve more equitable regional development and inclusive economic growth. Addressing these issues will make less developed ASEAN states more competitive in luring growth-oriented and sustainable foreign investments, hence reducing the FDI differential within the region.

## Conclusion and Recommendations

This study examined ASEAN member nations' Foreign Direct Investment (FDI) status and how socio-demographic parameters like age, sex, adult literacy rate, labour force participation, and unemployment affected FDI inflows. FDI is highly unevenly distributed across the region. Singapore is the top FDI destination, followed by Indonesia, Vietnam, and Malaysia due to their vast markets, industrial capability, political stability, and investment environments. Brunei, Laos, Cambodia, and Myanmar had the lowest FDI inflows due to smaller markets, governance difficulties, and weaker institutions. An ANOVA and post hoc analysis showed significant differences in mean FDI

inflows between nations. Human capital plays a role in investment decisions, as correlation research demonstrated a small but substantial positive association between adult literacy rate and FDI. Labour force participation and unemployment did not affect FDI inflows. These data show that FDI inflows depend on human capital quality, institutional strength, and economic stability, not population size or labour availability. This supports the view that FDI requires specific policies and long-term national development objectives, not only demographic advantage.

## Recommendations

The report recommends a comprehensive approach to attract foreign direct investment by ASEAN policymakers and development planners. They must strengthen basic and tertiary education to train a more skilled workforce and connect educational programs with industry needs to boost productivity and attract knowledge-driven investments. Improved digital literacy and vocational training will increase industrial diversity and innovation. Governments should improve regulatory openness, uniformity, and efficiency and expedite bureaucratic procedures for firm registration and investor entry to improve business conditions. Enhancing property, intellectual property, and investor rights legislation will improve institutional trust.

Policymakers must prioritise transport, logistics, and digital network infrastructure for investment readiness. Regional commercial integration and connectivity through ASEAN will encourage cross-border investment. Countries should encourage investment in renewable energy, manufacturing, and the digital economy. Promote public-private partnerships to grow business. National investment promotion agencies need reliable data, current tools, and strong regional networks to acquire and manage FDI. Help local governments attract sector- or region-specific investment. Finally, low-FDI recipient countries must pursue inclusive efforts to improve education, healthcare, and jobs. All ASEAN countries should minimise structural barriers and strengthen human capital to boost long-term economic competitiveness and FDI equity.

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