Macro Economics Perspective on Sustainability Development Goals (SDGs) Indexs in 5 ASEAN Country

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A R T I K E L   I N F O

A B S T R A K

Penelitian ini bertujuan untuk mengeksplorasi hubungan antara faktor makroekonomi (PDB, inflasi, nilai tukar dolar) dengan pencapaian Tujuan Pembangunan Berkelanjutan (SDGs) di Indonesia, Singapura, Thailand, Filipina, dan Malaysia. Penelitian kuantitatif ini menggunakan data sekunder berupa data panel dari periode 2017-2022. Teknik pengumpulan data dilakukan melalui pengambilan data sekunder, sedangkan analisis data menggunakan regresi panel dengan perangkat lunak EViews 12. Hasil penelitian menunjukkan bahwa tingkat inflasi berpengaruh signifikan terhadap pencapaian SDGs, sementara PDB dan nilai tukar dolar tidak memiliki hubungan signifikan. Temuan ini menekankan pentingnya pengendalian inflasi dalam mendukung pembangunan berkelanjutan dan memberikan wawasan bagi pembuat kebijakan untuk merancang strategi pembangunan yang lebih efektif.

A R T I C L E   I N F O

A B S T R A C K

This study aims to explore the relationship between macroeconomic factors (GDP, inflation, dollar exchange rate) and the achievement of the Sustainable Development Goals (SDGs) in Indonesia, Singapore, Thailand, the Philippines, and Malaysia. This quantitative research uses secondary data in the form of panel data from the 2017-2022 period. The data collection technique was carried out through secondary data collection, while the data analysis used panel regression with EViews 12 software. The results show that the inflation rate has a significant effect on the achievement of the SDGs, while GDP and the dollar exchange rate do not have a significant relationship. These findings emphasize the importance of controlling inflation in supporting sustainable development and provide insights for policymakers to design more effective development strategies.

1. INTRODUCTION

Sustainability Development Goals (SDG's) is a world program initiated by the United Nations since 2015 in an effort to achieve global sustainable development by 2030 (Sachs et al., 2023). This program is realized in 17 sustainable goals which will be achieved through 17 goals (Huan & Li, 2019). The 17 goals are:

1. SDG 1: No Poverty

2. SDG 2: Zero Hunger
3. SDG 3: Good Health and Well-being
4. SDG 4: Quality Education
5. SDG 5: Gender Equality
6. SDG 6: Clean Water and Sanitation
7. SDG 7: Affordable and Clean Energy
8. SDG 8: Decent Work and Economic Growth
9. SDG 9: Industry, Innovation, and Infrastructure
10. SDG 10: Reduced Inequality
11. SDG 11: Sustainable Cities and Communities
12. SDG 12: Responsible Consumption and Production
13. SDG 13: Climate Action
14. SDG 14: Life Below Water
15. SDG 15: Life on Land
16. SDG 16: Peace, Justice, and Strong Institutions
17. SDG 17: Partnerships for the Goals

These goals are comprehensive and address various aspects of sustainable development, encompassing social, economic, and environmental dimensions (Pu et al., 2021). Each goal is interlinked, reflecting the complexity and interconnected nature of global challenges (Nations, 2015).

Countries' participation in the SDGs (Sustainable Development Goals) program led by the UN is not bound by legally binding international law(United Nations Development Programme, 2021). This means that there are no legal sanctions imposed on countries that do not fulfill their commitments regarding the SDGs (Manuel et al., 2018a). Nevertheless, most countries have voluntarily accepted the 2030 Agenda for Sustainable Development and committed to achieving the goals(United Nations, 2015). Many countries have taken concrete steps, such as developing national action plans and reporting their progress regularly to the UN. Although participation in the SDGs is voluntary, there is significant moral and political pressure for countries to participate and work towards achieving the goals(Schmidt-traub et al., 2017a). Apart from that, there are also practical benefits that can be gained by countries that successfully achieve the SDGs, such as increased social and economic welfare, as well as a better reputation at the international level (Schmidt-traub et al., 2017b). The implementation of SDGs also fosters international cooperation and encourages countries to share best practices and innovative solutions to common challenges (Endo & Ikeda, 2021a).

Additionally, achieving the SDGs can lead to more resilient economies and societies (Asadikia et al., 2022). For example, addressing climate change (SDG 13) can reduce the risk of natural disasters, which in turn can mitigate economic losses and improve long-term stability. Similarly, promoting quality education (SDG 4) and gender equality (SDG 5) can enhance human capital, leading to higher productivity and economic growth.

In the context of ASEAN countries, the progress towards SDGs varies significantly due to differing levels of economic development, governance structures, and policy priorities (Endo & Ikeda, 2021a). Analyzing the macroeconomic perspectives on SDGs in these countries can provide valuable insights into the effectiveness of various policies and strategies (Boeren, 2019). This analysis will focus on key macroeconomic indicators such as GDP growth, inflation rates, employment levels, and trade balances, and how they align with the pursuit of sustainable development goals. By examining the macroeconomic context, we can better understand the challenges and opportunities faced by ASEAN countries in their efforts to achieve the SDGs. This

includes exploring the role of fiscal policies, monetary policies, and structural reforms in promoting sustainable development. Furthermore, the analysis will consider the impact of external factors such as global economic trends and trade dynamics on the region's ability to meet its SDG targets. Ultimately, this article aims to highlight the critical interplay between macroeconomic policies and sustainable development, offering recommendations for policymakers in ASEAN countries to enhance their strategies towards achieving the SDGs by 2030.
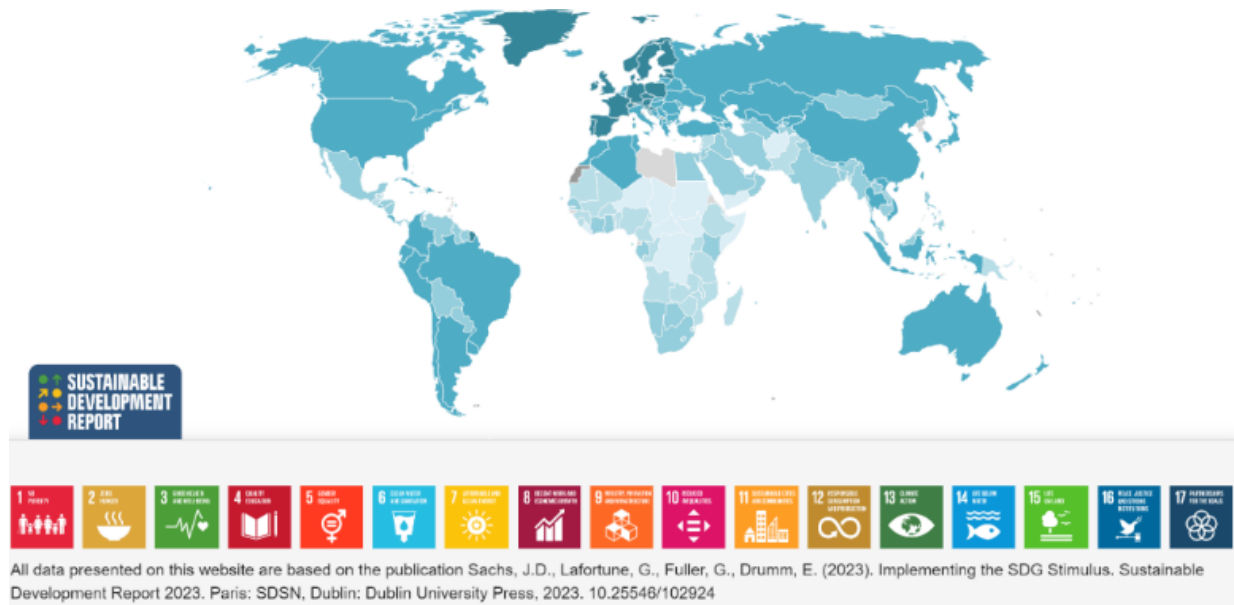

All data presented on this website are based on the publication Sachs, J.D., Lafortune, G., Fuller, G., Drumm, E. (2023). Implementing the SDG Stimulus. Sustainable Development Report 2023. Paris: SDSN, Dublin: Dublin University Press, 2023. 10.25546/102924

Figure 1. Participation of Countries in the World in the SDG's Program

There are 194 countries listed in the Sustainability Development Report and 167 countries that have started to meet the assessment criteria in the SDG's Index in 2023 (Sachs et al., 2023). According to Rahman et al., (2020a), participation in the SDGs program has significant urgency for a country for several reasons:

1. Sustainable Development: The SDGs aim to achieve sustainable development, meaning meeting the needs of the present without compromising the ability of future generations to meet their own needs. This is important to maintain a balance between economic growth, social welfare, and preserving the natural environment. Sustainable development ensures that the economic progress made today does not deplete resources or harm ecosystems, thereby safeguarding the prospects for future generations. Countries that embrace sustainable practices are better equipped to handle long-term challenges such as resource scarcity and environmental degradation.
2. People's Welfare: Through achieving the SDGs, countries can improve the welfare of their people by reducing poverty, increasing access to education, health care, clean water, sanitation, and other basic services. The focus on reducing inequality and providing essential services ensures that all citizens have the opportunity to lead healthy and productive lives. Enhancing people's welfare also involves creating inclusive societies where everyone, regardless of background or status, can thrive and contribute to the nation's development.
3. Economic Improvement: Implementation of the SDGs can open up new opportunities for economic growth through innovation, investment in sustainable infrastructure, and increased labor productivity. By prioritizing sustainable practices, countries can attract investment in green technologies and renewable energy, leading to job creation and economic diversification.

Furthermore, fostering a sustainable economy encourages businesses to adopt environmentally friendly practices, enhancing their competitiveness in the global market.

4. Resilience to Crisis: Countries that adhere to the SDGs can be more resilient to economic, social, or environmental crises, because they have a stronger foundation in building sustainable communities and managing resources efficiently. This resilience is crucial in the face of global challenges such as climate change, natural disasters, and economic shocks. By implementing policies that promote sustainability, countries can mitigate risks, adapt to changing conditions, and recover more quickly from crises

5. Global Importance: By being part of global efforts to achieve the SDGs, countries also strengthen their position on the international stage and gain a better reputation in terms of social and environmental responsibility. Active participation in the SDGs demonstrates a country's commitment to global well-being and cooperation, enhancing its diplomatic relations and influence. This global standing can lead to increased foreign aid, partnerships, and investment opportunities, further supporting national development goals.

6. Environmental Protection: SDGs also aim to protect the natural environment, including protecting ecosystems and biodiversity, as well as reducing the impacts of climate change. This is important to maintain the balance of the global ecosystem and ensure the sustainability of human life on this planet. Environmental protection under the SDGs includes initiatives to reduce pollution, promote sustainable land use, and conserve natural resources. These efforts are essential for preserving the planet's health and ensuring that ecosystems can continue to provide the services humans depend on, such as clean air, water, and food.

SDG Index is an evaluation tool used to measure a country's progress in achieving the Sustainable Development Goals (SDGs) (Manuel et al., 2018a). This index provides an overview of the extent to which a country has succeeded in realizing each of the SDGs goals and targets. In general, the SDG Index tries to provide a holistic picture of a country's performance in achieving the SDGs, taking into account various aspects such as social, economic, environmental and sustainability welfare (Schmidt-traub et al., 2017a).

The SDG Index is often compiled by research institutions or international organizations working in the field of sustainable development (Manuel et al., 2018b). The index is usually based on secondary data collected from various sources, including UN agencies, government agencies, and non-governmental organizations. Using appropriate analytical methods, this data is then used to assess each country's progress in achieving each SDG goal and target.

The results of the SDG Index can provide valuable information for countries to evaluate their performance, identify strengths and weaknesses, and direct future sustainable development policies and programs. In addition, this index can also be used by civil society, international organizations and other relevant parties to monitor global progress in achieving the SDGs and encourage more effective action. If you refer to the results of the SDG's Index ranking, it can be seen in table 1 below for the Top 10 countries with SDG's Index ranking achievements in 2023.

Table 1. Ranking of 10 world countries with the highest SDG Index Score in 2023

Country	2023 SDG Index Score	2023 SDG Index Rank
Finland	86,8	1
Sweden	86,0	2
Denmark	85,7	3
Germany	83,4	4
Austria	82,3	5
France	82,0	6

Norway	82,0	7
Czechia	81,9	8
Poland	81,8	9
Estonia	81,7	10

Source: Sustainable Development Report, 2023

In the Asian context, the SDG Index plays an important role in guiding countries in the region to achieve sustainable development goals, while also strengthening regional and global cooperation to create a more sustainable future for everyone(Rahman et al., 2020b). The following are several countries in Asia that have been registered as participating in the SDG's Global Index achievement ranking program.

Table 2. East and Shout Asia

No	Country	Ranking	Score
1	Thailand	43	74,74
2	Vietnam	55	73,32
3	Bhutan	61	72,34
4	China	63	72,01
5	Singapore	64	71,78
6	Maldives	68	71,27
7	Indonesia	75	70,16
8	Malaysia	78	69,85
9	Sri Lanka	83	69,40
10	Philippines	98	67,14
11	Nepal	99	66,47
12	Brunei Darussalam	102	65,71
13	Cambodia	103	64,84
14	India	112	63,45
15	Myanmar	125	60,44

Source: Sustainable Development Report, 2023

Achieving the Sustainable Development Goals (SDGs) has become the main focus for many countries around the world in efforts to improve social, economic and environmental welfare(Pu et al., 2021). In the Asian context, five countries, such as Indonesia, Singapore, Thailand, the Philippines and Malaysia, play a key role in efforts to achieve sustainable development goals in the region. However, the challenges each country faces in achieving the SDGs may vary based on their unique social, economic and political context (Asadullah et al., 2020).

The selection of these five countries was based on various considerations. First, these five countries have a significant role in the Asian economy, and are active members in regional and international initiatives for sustainable development. Moreover, they represent a broad spectrum in terms of economic size, level of human development, and challenges faced in achieving the SDGs. Indonesia, as the country with the largest population in the region, has special challenges in dealing with socio-economic and environmental inequality. Singapore, with its strong and diversified economy, is an example of applying innovation and technology for sustainable development. Meanwhile, Thailand, the Philippines, and Malaysia face unique challenges related

to infrastructure development, economic empowerment of rural communities, and environmental protection.

There is a close relationship between macroeconomic factors, such as Gross Domestic Product (GDP), inflation rates, and currency exchange rates, with the achievement of the SDGs (Alacaogullari, 2024). GDP, as an aggregate measure of a country's economic production, directly reflects a society's economic prosperity and well-being. The inflation rate, on the other hand, can affect people's purchasing power, price stability and the sustainability of economic growth. Currency exchange rates, with their impact on international trade and economic stability, also play an important role in sustainable development (Memon et al., 2022).

A deep understanding of the relationship between macroeconomic factors and the achievement of the SDGs in these five Asian countries is crucial in designing effective policies for sustainable development (Gamage, 2016). Therefore, this research aims to analyze the relationship between GDP, inflation rate, currency exchange rate, and SDG's Index Score in these five countries, with the hope of providing valuable insights for policymakers, practitioners, and researchers in efforts to achieve sustainability development goals in Asia. Based on the description above, research emerged with the title "Macro Economics Perspective on Sustainability Developments Goals (SDGs) Indexs in 5 Asean's Country". The aim of this research is to see the influence of macroeconomic factors, including Gross Domestic Income, Inflation, and Dollar Exchange Rate on the SDG Index in 5 countries in Asia.

2. LITERATURE STUDIES

SDG's Index

Several definitions of the SDG's Index have been proposed by various organizations and research institutions:

1. SDG Index and Dashboards Report: The SDG Index and Dashboards Report is an annual report published by the Bertelsmann Stiftung and the Sustainable Development Solutions Network (SDSN). This report provides a comprehensive index of countries' progress in achieving the Sustainable Development Goals (SDGs) set by the United Nations (UN) (Schmidt-traub et al., 2017b)

2. Global SDG Index: The Global SDG Index is an evaluation tool developed by the Sustainable Development Solutions Network (SDSN) to measure a country's progress in achieving the SDGs. This index includes several indicators that reflect various aspects of sustainable development, such as health, education, gender equality, and environmental sustainability (Sachs et al., 2023)

3. SDG Progress Index: The SDG Progress Index is an index developed by international development organizations, such as the United Nations Development Program (UNDP), to assess countries' progress in achieving the SDGs. This index highlights the challenges and opportunities faced by each country in achieving sustainable development goals (Manuel et al., 2018a).

The synthesis of these definitions is that the SDG Index is an evaluation tool used to measure a country's progress in achieving the Sustainable Development Goals (SDGs) set by the United Nations (UN). This index includes some indicators that reflect various aspects of sustainable development, such as health, education, gender equality, environmental sustainability and economic prosperity. By providing a comprehensive understanding of a country's performance across multiple dimensions of sustainable development, the SDG Index helps identify areas for

improvement and strengthen efforts to achieve sustainable development goals globally. SDG's Index, or the Sustainable Development Goals Index (SDG Index), has become important today for countries around the world, including Asian countries, for several main reasons (Endo & Ikeda, 2021b):

1. Measuring Progress: SDG's Index provides a measurable framework for measuring a country's progress in achieving the sustainable development goals set by the United Nations (UN). With clear, standardized indicators in place, countries can assess the extent to which they have achieved SDG targets and identify areas where they need to increase their efforts.
2. Encouraging Action and Engagement: The SDG's Index encourages countries to take concrete action to achieve sustainable development goals. By providing a better understanding of the challenges and opportunities faced by a country, the index encourages governments, the private sector, civil society and other institutions to work together to achieve the SDGs.
3. Building Shared Responsibility: The SDG's Index promotes the concept of shared responsibility in achieving sustainable development goals. By highlighting countries' performance and progress in various aspects of development, the index strengthens awareness of shared responsibility in creating a more sustainable future for everyone.
4. Promoting Transparency and Accountability: Through the open publication of data and evaluation results, the SDG's Index helps promote transparency and accountability at national and international levels. Countries that meet their commitments to the SDGs can be recognized and appreciated, while those that lag behind can improve their efforts through systematic monitoring and evaluation.
5. Tackling Global Challenges: The SDG's Index offers a holistic and comprehensive framework for addressing complex global challenges, such as poverty, inequality, climate change and environmental degradation. By focusing on the social, economic and environmental aspects of sustainable development, the index helps balance human needs with sustainable planetary protection.

Macroeconomics

Macroeconomics is a branch of economics that studies the behavior and performance of the economy as a whole, including economic growth, unemployment, inflation, and fiscal and monetary policy. The goal is to understand and analyze how economic decisions at the aggregate level affect the economy of a country or region (Alacaogullari, 2024). In macroeconomics, there are several important variables used to analyze a country's economic performance. Some of the main variables include: *firstly*, *Gross Domestic Product (GDP)*. GDP is a measure of the value of all goods and services produced within a country's territorial borders within a certain period, usually one year (Alacaogullari, 2024). The GDP calculation formula is as follows:

GDP = C + I + G + (X - M) …………………………………………………………. (i)

Where:
- (C) is total household consumption,
- (I) is total gross investment,
- (G) is total government expenditure,
- (X) is total exports,
- (M) is total imports.

Secondly, Inflation. Inflation measures the general rate of increase in the prices of goods and services in a country's economy over a certain period (Alamsyahbana, 2022). The inflation calculation formula is as follows:

Inflation = $(\{CPI_t - CPI_{t-1}\} / \{CPI_{t-1}\})$ x 100\% …………………………………….. (ii)
   Where:
   - (CPI) is the Consumer Price Index in the period (t),
   - (CPI{t-1}) is the Consumer Price Index in the previous period.

Thirdly, *Currency Exchange Rates (Dollars).* Currency exchange rates measure the relative price between one country's currency and another country's currency (Jannah & Nurfauziah, 2018). The formula for calculating the dollar exchange rate (in the context of other countries) is as follows:

Dollar Exchange Rate = {Amount of Foreign Currency} / {Amount of Local Currency}……. (iii)

In macroeconomic analysis, these variables are often used as indicators to understand and measure the economic health of a country and to formulate appropriate economic policies.
   The relationship between the dependent variable (Y) (SDG's Index Score) and the independent variable (X) ((Gross Domestic Product (X1), Inflation (X2), and Dollar Exchange Rate (X3)) can be explained in the context of a linear regression model as follows:

Y = C (1) + C (2)*X1 + C (3)*X2 + C (4)*X3 + e …………………………………………. (iv)

Where:
- (Y) is the dependent variable (SDG's Index Score),
- (X1), (X2), (X3) are independent variables (Gross Domestic Product, Inflation, and Dollar Exchange Rate),
- (C1) is the intercept,
- (C2), (C3), (C4) are regression coefficients that measure the relative influence of each independent variable on the dependent variable,
- e is a random error.

   By using a linear regression model, we can measure how much influence changes in the independent variables (X1), (X2), and (X3) have on changes in the dependent variable (Y). For example, the coefficient (C2) will show how big a change in the SDG's Index Score is expected for every one unit change in Gross Domestic Product, while (C3) will show how big a change in the SDG's Index Score is expected for every one unit change in the inflation rate, and (C4) will show how much change in the SDG's Index Score is expected for every one unit change in the dollar exchange rate. By analyzing these regression coefficients, we can understand the relationship between macroeconomic factors (GDP, inflation, and dollar exchange rate) and the achievement of SDGs in the five Asian countries studied.

Research Framework and Hypotheses

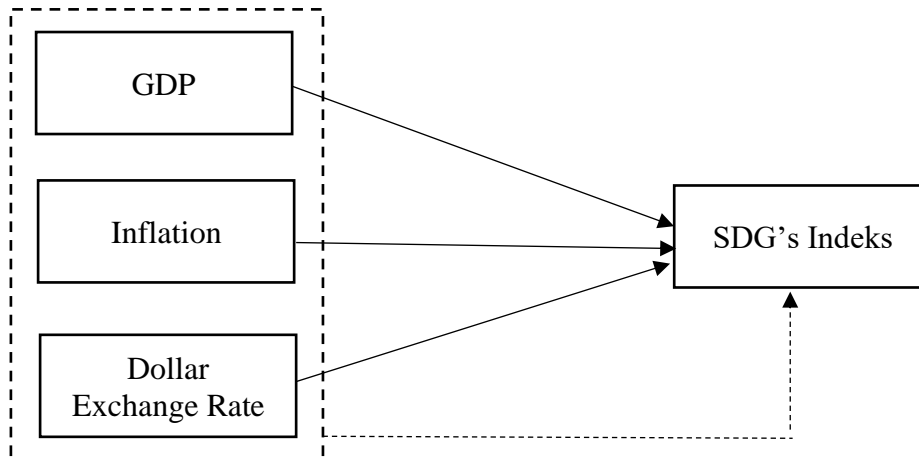The framework of this research can be described as follows:

Figure 2. Framework

The following are the four research hypotheses proposed:

H1: There is a positive relationship between Gross Domestic Product (GDP) and SDG achievement in the five Asian countries studied.

H2: There is a negative relationship between the inflation rate and the achievement of SDGs in the five Asian countries studied.

H3: There is a positive relationship between the dollar exchange rate and the achievement of SDGs in the five Asian countries studied.

H4: Macroeconomic factors (GDP, inflation, and dollar exchange rate) simultaneously influence the achievement of SDGs in the five Asian countries studied.

3.. RESEARCH METHODS

The type of research used in this research is quantitative methods. Quantitative methods are data expressed in the form of numbers (Alamsyahbana et al., 2023). The quantitative data in this research are the numbers contained in. In this research, the data used is secondary data. Secondary data in this research is data obtained from reports and publications without being directly related to the research object (Sugiyono, 2021). The data used is the publication of macroeconomic data from Bank Indonesia and also the 2023 Sustainable Development Report. Literature Study. According to (Alamsyahbana et al., 2023), the literature study is a data collection method that involves reviewing books, literature, notes, and various types of reports that are relevant to the problem to be solved. Web searching is a method that collects various scientific literature articles, journals, and other documents from the internet.

In this research, the data processing technique uses the E-Views 12 application. The data processing method used in this research uses panel data regression analysis to measure the influence between independent variables and dependent variables (Sugiyono, 2018). The data analysis techniques used in this research are descriptive analysis, classical assumption tests consisting of normality tests, multicollinearity tests, heteroscedasticity tests, and autocorrelation tests. As well as hypothesis testing consisting of partial test (t test), simultaneous test (f test), coefficient of determination test (R^2) (Sugiyono, 2021).

4. RESULT AND DISCUSSION

Model Selection Test Results

Table 3. Chow Test Result

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	67.394203	(4,22)	0.0000
Cross-section Chi-square	77.527831	4	0.0000

Source: Eviews (2024)

The prob value is $0.000 < 0.05$, so the model chosen is the FEM model

Table 4. Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.222576	3	0.0106

Source: data processed (2024)

The prob value is $0.0106 < 0.05$, so the model chosen is the FEM model. Based on the results of the Chow test and Hausman test, the best model in this research is the Fix Effect Model (FEM).

Classic Assumption Test Results. The model chosen was FEM, therefore it was continued with the Classical Assumption Test. The classical assumption tests used are the multicollinearity test and the heteroscedasticity test.

Table 5. Multicollinearity Test

	X1	X2	X3
X1	1.000000	0.527594	0.110732
X2	0.527594	1.000000	0.137849
X3	0.110732	0.137849	1.000000

Source: data processed (2024)

The correlation coefficients X1 and X2 are equal $0.527594 < 0.85$, X1 and X3 $0.110732 < 0.85$ and X2 dan X3 $0.137849 < 0.85$, Therefore, it can be concluded that the model is free from multicollinearity or passes the multicollinearity test.

Table 6. Heteroscedasticity Test

Dependent Variable: ABS(RESID)
Method: Panel Least Squares
Date: 02/23/24   Time: 19:24
Sample: 2017 2022
Periods included: 6
Cross-sections included: 5
Total panel (balanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.355958	0.623473	2.174845	0.0407
X1	0.036184	0.018027	2.007258	0.0572
X2	-0.065396	0.036339	-1.799606	0.0857
X3	-0.000262	0.000219	-1.194442	0.2450

Source: Data processed (2024)

The probability values for X1 (0.0572), X2 (0.0857), and X3 (0.2450) are all greater than 0.05. Therefore, it can be concluded that there is no evidence of heteroskedasticity, or the model passes the heteroskedasticity test.

t test

Table 7. Hypothesis Test Results

Dependent Variable: Y
Method: Panel Least Squares
Date: 02/23/24   Time: 19:42
Sample: 2017 2022
Periods included: 6
Cross-sections included: 5
Total panel (balanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	66.84730	1.424842	46.91558	0.0000
X1	-0.048834	0.041197	-1.185376	0.2485
X2	0.190058	0.083047	2.288573	0.0321
X3	0.000910	0.000501	1.815300	0.0831

Source: data processed (2024)

In this study, we analyze the relationship between several economic factors, namely Gross Domestic Product (GDP), inflation rate, and dollar exchange rate, with the SDG's Index Score. The Panel Least Squares method was used to examine this relationship using panel data from 2017 to 2022. The results of the analysis show that the model constants have highly statistically significant values, indicating that there are other factors outside the measured variables that influence the SDG's Index Score. However, when we look at the single variable, there are different results: (1). GDP variable (X1) on SDG's Index Score: Even though it has a negative coefficient, which indicates a negative relationship with SDG's Index Score, the results of statistical tests did

not find sufficient significance to support this relationship. (2). Inflation Variable (X2) on SDG's Index Score: The results show a statistically significant relationship between the inflation rate and SDG's Index Score. A positive coefficient indicates that an increase in the inflation rate can increase the SDG's Index Score. (3). Dollar Exchange Rate Variable (X3) on SDG's Index Score: Even though the coefficient is positive, the relationship between the dollar exchange rate and SDG's Index Score does not reach the desired level of significance, even though it tends to be positive.

F Test Results

Table 8. Simultaneous Test Results

R-squared	0.930224
Adjusted R-squared	0.908023
S.E. of regression	0.766857
Sum squared resid	12.93752
Log likelihood	-29.95217
F-statistic	**41.89952**
Prob(F-statistic)	**0.000000**

Source: Data processed (2024)

The F-test results show that the overall regression model makes a significant contribution in explaining variations in the SDG's Index Score, with a high F-statistic value (41.89952) and a very low Probability (0.000000). This confirms that at least one independent variable has a significant influence simultaneously on the dependent variable. Thus, the model as a whole has a good ability to explain the relationship between economic factors (GDP, Inflation, and Dollar Exchange Rate) with the SDG's Index Score.

Coefficient of Determination Test Results

Table 9. Coefficient of Determination Test Results

R-squared	0.930224
Adjusted R-squared	**0.908023**
S.E. of regression	0.766857
Sum squared resid	12.93752
Log likelihood	-29.95217
F-statistic	41.89952
Prob(F-statistic)	0.000000

Source: Data Processed (2024)

The coefficient of determination or R-squared (R^2) on these results is 0.930224. This shows that approximately 93.02% of the variation in the SDG's Index Score can be explained by the GDP, Inflation, and Dollar Exchange Rate variables included in the regression model. With this high value, it can be concluded that the regression model effectively explains variations in the SDG's Index Score.

DISCUSSION

this analysis, we evaluate the influence of economic variables on the SDG's Index Score using the Panel Least Squares method on data from five Asian countries: Indonesia, Singapore, Thailand, the Philippines and Malaysia. We will relate the results of the analysis to the highest SDG's Index Score rankings from the five countries, namely Thailand, Singapore, Indonesia, Malaysia and the Philippines.

The t test results show that the GDP variable does not have a partially significant influence on the SDG's Index Score (p = 0.2485). Nonetheless, it is important to note that in the context of these countries, Thailand and Singapore have significant GDP and may influence the achievement of the SDGs. The t-test shows that the inflation variable has a partially significant influence on the SDG's Index Score (p = 0.0321). This is interesting because countries such as Thailand and the Philippines that have significant inflation rates may experience a positive impact on achieving the SDGs. The t-test results show that the dollar exchange rate variable does not have a partially significant influence on the SDG's Index Score (p = 0.0831). However, it is important to consider that Singapore, with its strong dollar exchange rate, may have a different impact on achieving the SDGs compared to other countries. The F-test results show that the overall regression model significantly influences the SDG's Index Score (F-statistic = 41.89952, Prob(F-statistic) = 0.000000). This indicates that at least one independent variable has a significant influence simultaneously on the dependent variable in these five countries.

From the partial test results, the inflation variable emerged as the most significant factor in explaining the SDG's Index Score among the five countries. This can have varying implications, depending on the context of each country. For example, Thailand and the Philippines, which have significant inflation, may experience a positive impact on achieving the SDGs. However, it is important to remember that these economic factors are only part of the bigger picture in achieving the SDGs, and other factors such as public policy, education, and infrastructure also play an important role. These results provide valuable insights into the relationship between economic factors and the achievement of sustainable development goals in these five Asian countries. However, it should be noted that the social, political and economic context of each country also needs to be considered in depth in this analysis.

5. CONCLUSIONS

Based on the hypothesis proposed in this research and the results of partial and simultaneous tests, we conclude as follows: (a). The partial test results show that the GDP variable does not have a partially significant influence on the SDG's Index Score. (b). The partial test results show that the inflation variable has a partially significant influence on the SDG's Index Score. (c). The partial test results show that the dollar exchange rate variable does not have a partially significant influence on the SDG's Index Score Thus, this conclusion confirms that of the three economic variables studied, only the inflation rate has a significant relationship with the achievement of SDGs in the five Asian countries studied. Other variables, namely GDP and the dollar exchange rate, do not have a statistically significant influence on the SDG's Index Score. Therefore, it is important to pay attention to and control the inflation rate to achieve sustainable development goals in these countries. Although only the inflation rate is partially significant, the simultaneous test results confirm that the overall regression model makes a significant contribution to explaining variations in the SDG's Index Score. Thus, the results of the simultaneous test validate the findings of the partial test, confirming that the inflation rate has an overall significant influence on the achievement of the SDGs in the five Asian countries studied. This highlights the importance of economic stability, particularly in controlling inflation levels, in achieving

sustainable development goals in the region. However, further research is needed to understand in more depth other factors that may influence the relationship between economic factors and the achievement of SDGs at regional and national levels.

REFERENCES

Alacaogullari, E. B. (2024). *Empirical Analysis of The Relationship Between Sustainability and Macroeconomics Indicators* (Issue February).

Alamsyahbana, M. I. (2022). *Suku Bunga SBI, Kurs Valuta Asing, dan Inflasi Terhadap Kinerja Saham Indeks pada Perusahaan LQ45*. CV Azka Pustaka.

Alamsyahbana, M. I., Gizta, A. D., Novrina, P. D., Sarazwati, R. Y., Fauzar, S., Meifari, V., Indriaty, N., Chandra, R. F., Kusumah, S., Santoso, N. K., Fauzi, Nasution, U. O., Saputra, N. C., Shindy, G. T., & Tahir, I. B. (2023). *Metodologi Penelitian Kuantitatif dan Kualitatif* (S. Bahri, Ed.). Media Sains Indonesia.

Asadikia, A., Rajabifard, A., & Kalantari, M. (2022). Region - income - based prioritisation of Sustainable Development Goals by Gradient Boosting Machine. *Sustainability Science*, *17*(5), 1939–1957. https://doi.org/10.1007/s11625-022-01120-3

Asadullah, M. N., Savoia, A., & Sen, K. (2020). Will South Asia Achieve the Sustainable Development Goals by 2030 ? Learning from the MDGs Experience. *Social Indicators Research*, *152*(1), 165–189. https://doi.org/10.1007/s11205-020-02423-7

Boeren, E. (2019). Understanding Sustainable Development Goal (SDG) 4 on "quality education" from micro, meso and macro perspectives. *International Review of Education*, *65*(2), 277–294. https://doi.org/10.1007/s11159-019-09772-7

Endo, K., & Ikeda, S. (2021a). How can developing countries achieve sustainable development : implications from the inclusive wealth index of ASEAN countries. *International Journal of Sustainable Development & World Ecology*, *00*(00), 1–10. https://doi.org/10.1080/13504509.2021.1910591

Endo, K., & Ikeda, S. (2021b). How can developing countries achieve sustainable development: implications from the inclusive wealth index of ASEAN countries. *International Journal of Sustainable Development & World Ecology*, *00*(00), 1–10. https://doi.org/10.1080/13504509.2021.1910591

Gamage, R. N. (2016). Blue economy in Southeast Asia: Oceans as the new frontier of economic development. *Maritime Affairs*, *12*(2), 1–15. https://doi.org/10.1080/09733159.2016.1244361

Huan, Y., & Li, H. (2019). A New Method for the Quantitative Assessment of Sustainable Development Goals (SDGs) and a Case Study on Central Asia. *Sustainability*, *11*(3504), 1–27. https://doi.org/10.3390/su11133504

Jannah, M., & Nurfauziah, N. (2018). Analisis Pengaruh Nilai Tukar Rupiah, Tingkat Suku Bunga Sbi (Bi Rate) Dan Harga Emas Dunia Terhadap Indeks Lq45 Di Bursa Efek Indonesia. *Jurnal Manajemen Maranatha*, *17*(2), 103. https://doi.org/10.28932/jmm.v17i2.796

Manuel, J., Sarachaga, D., Espino, D. J., & Fresno, D. C. (2018a). Is the Sustainable Development Goals (SDG) index an adequate framework to measure the progress of the 2030 Agenda? *Sustainability Development*, *January*, 1–9. https://doi.org/10.1002/sd.1735

Manuel, J., Sarachaga, D., Espino, D. J., & Fresno, D. C. (2018b). Is the Sustainable Development Goals (SDG) index an adequate framework to measure the progress of the 2030 Agend ? *Sustainability Development*, *January*, 1–9. https://doi.org/10.1002/sd.1735

Memon, A., Akram, W., Abbas, G., Chandio, A. A., Adeel, S., & Yasmin, I. (2022). Financial Sustainability of Microfinance Institutions and Macroeconomic Factors: A Case of South Asia. *South Asian Journal of Macroeconomics and Public Finance*, *11*(1), 116–142. https://doi.org/10.1177/22779787211007970

Nations, U. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. *16301*(October), 1–35.

Pu, R., Li, X., & Chen, P. (2021). Sustainable Development and Sharing Economy: A bibliometric Analysis. *Problems and Perspectives in Management*, *19*(4), 1–19. https://doi.org/10.21511/ppm.19(4).2021.01

Rahman, M., Khan, T. I., & Sadique, M. Z. (2020a). *SDG implementation progress: What does the Asian experience reveal?*

Rahman, M., Khan, T. I., & Sadique, M. Z. (2020b). *SDG implementation progress: What does the Asian experience reveal?*

Sachs, J. D., Lafortune, G., Fuller, G., & Drumm, E. (2023). *Sustainable Development Report 2023 Implementing the SDG Stimulus Includes the SDG Index and Dashboards* (Issue June).

Schmidt-traub, G., Kroll, C., Teksoz, K., Durand-delacre, D., & Sachs, J. D. (2017a). National baselines for the Sustainable Development Goals assessed in the SDG Index and Dashboards. *Perspective*, *July*, 547–555. https://doi.org/10.1038/NGEO2985

Schmidt-traub, G., Kroll, C., Teksoz, K., Durand-delacre, D., & Sachs, J. D. (2017b). National baselines for the Sustainable Development Goals assessed in the SDG Index and Dashboards. *Perspective*, *July*, 547–555. https://doi.org/10.1038/NGEO2985

Sugiyono. (2018). *Metodologi Penelitian Kuantitatif* (S. Y. Suryandari, Ed.). ALFABETA, cv.

Sugiyono. (2021). *Metode Penelitian Kuantitatif Kualitatif dan R&D*.

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*.

United Nations Development Programme. (2021). Sustainable Development Goals.