

CHAPTER I

INTRODUCTION

1.1 Problem Identification

Prior to the 1970s, the concept of development was accepted solely in terms of economic growth (Ozturk & Suluk, 2020). However, the higher per capita GDP or GDP growth does not necessarily indicate that a country is developed. The most crucial factor is the value of human resources in a country. Human resources quality has a pivotal role in the development of any nation, serving as a source of economic power and an enabler of growth in critical sectors. It is therefore of critical importance to give serious attention to the field of human development.

In 1990, the Human Development Index was compiled by the United Nations Development Program as a means of assessing a nation's level of development and prosperity. The Human Development Index measures well-being based on three dimensions: health and longevity, education, and a decent standard of living. The dimensions of the Human Development Index are related to the components of the Sustainable Development Goals (SDGs), particularly the third, fourth, and eighth goals. These goals reflect the indicators that comprise the Human Development Index, namely, health, education, and sustainable economic growth (Sukmawati, 2022).

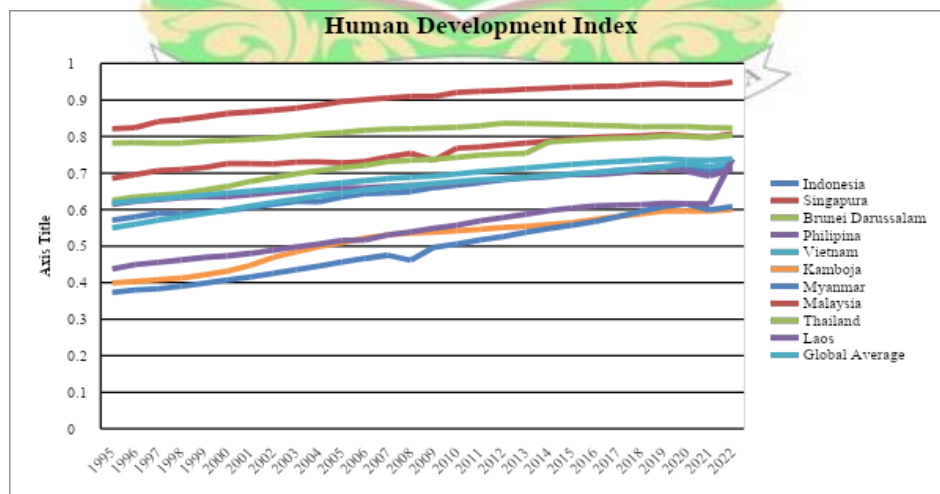


Figure 1.1 Human Development Index of ASEAN Countries
Source: UNDP, Processed by author 2024

As depicted in Figure 1.1 the Human Development Index in Indonesia in the dark blue line has generally experienced an upward trend over the years. From 1995 to 2000, Indonesia's Human Development Index (HDI) score fell within the low-category range. From 2001 to 2015, the HDI score remained in the medium category. However, from 2016 to the present, the HDI score has risen to the high-category range, with an HDI score of 0.713 in 2022. Although it has increased, the Human Development Index in Indonesia still lags behind several other ASEAN countries such as Singapore, Brunei Darussalam, Malaysia, Thailand and Vietnam. In 2022, Indonesia ranked 112th out of 193 countries in the world's Development Index. Indonesia's Human Development Index is still below the global average.

Education and health, which are captured by the Human Development Index indicator, are among the sectors with the highest incidence of corruption in Indonesia. According to a report from Indonesia Corruption Watch (ICW), a non-governmental organization in Indonesia, the education and health sectors have consistently occupied the top 10 positions in terms of corruption cases. According to Emara (2020) corruption has been identified as a significant barrier to the development process. Corruption, which is characterized as the misuse of public office for personal gain, exerts a considerable detrimental influence on the economic growth and development of a nation. In a line, Mo (2011) stated that corruption has a negative effect on human capital and economy.

Furthermore, corruption has an adverse impact on investment, both domestic and foreign, which in turn can impede economic growth and have a detrimental effect on human development. As Akçay (2006) asserts, corruption leads to a decline in income, hinders both domestic and foreign investment, raises inflation, encourages rent-seeking behavior, resource misallocation, distorting markets, reduces tax revenues, worsen income inequality and poverty, contributes to higher newborn and child mortality rates, and deteriorates the quality of education. Besides that, Mauro, (1998) argues that corruption is associated with a reduction in spending of the government on education and health. Mauro posits that public officials are not willing

to allocate more resources to these sectors because they perceive a lack of opportunity for rent seeking.

Emara (2020) found in the short run and long run corruption has a negative and significant consequence on human development. Similarly, the research conducted by Hamadou & Karim (2024) revealed that in the short term, corruption has a negative impact on the human development index. In contrast, no cointegration was identified in the long term, resulting in an inability to estimate the long-term impact of corruption. Luqman et al. (2021) found the different results, which are that corruption has no significant impact on the human development Index in Pakistan in the short run and becomes a negative impact in the long run.

Furthermore, a research by Vinayagathan & Ramesh (2022) aimed to find out the relationship between corruption and poverty in SAARC countries. This research used the Human Development Index as a dependent variable that represents the poverty level and control of corruption as an independent variable which represents the corruption in SAARC countries. The results showed that corruption has a negative impact on the human development index whether in the short run or in the long run. In other words, higher corruption will increase poverty in the SAARC countries. The findings of Vinayagathan & Ramesh (2022) are similar to Fagbemi et al., (2022), which also found the negative impact of corruption on human development index.

Education, health and decent standard of living are the three dimensions of the Human Development Index influenced by the availability of basic facilities in a country. Urbanization is the movement of residents from rural to urban areas and has a probability to make it easier in terms of the accessibility to basic facilities such as health and education services. Tripathi (2019) stated the urbanization process can have a positive impact on the economic activities, offering higher employment opportunities and also enhancing the access to basic facilities. Emara (2020) used the percentage of population in the urban area to examine the effect of urbanization on the human development index in Egypt. Based on the results, in the short run urbanization has a negative impact on human development Index and in the long run

the effect becomes a positive insignificant influence on the human development index. Furthermore, a research conducted by Metwally et al. (2024) examined the impact of urbanization on human development index. Metwally et al., (2024) used urban population growth (%) that represents urbanization. The research outcome found urbanization has a negative and positive impact on human development in the short run and the long run respectively. Another finding based on the study conducted by Adeleke et al., (2022) which also used urban population growth (%) as the urbanization representations found the negative impact of urbanization on human development index both short run and long run. However the long run effect was negative and insignificant influenced the human development index.

Data from Central Bureau Statistics of Indonesia (BPS Indonesia) about the mean years of schooling for people over 15 years old starting from 2011 until 2023 showed the people who live in the urban area consistently have a higher mean years of schooling compared to people who live in the rural areas. The average number of years of schooling for individuals residing in urban areas is 9.6, while the mean of years of education for those residing in rural areas is 7.3. In line with the higher average level of education in urban areas, the literacy level of the population aged 15 years is also consistently higher than the literacy level of the population in rural areas. Not only from the education field, Unmet needs in Indonesia, the percentage of the population who have health complaints and activity limitations but do not seek outpatient care. Unmet needs in rural areas (5.79% in average) are consistently higher compared to urban areas (4.6% in average). According to Pappa et al., 2017, the causes of unmet need are grouped into three categories, accessibility, which is concerned with cost and proximity; availability, which is concerned with the timely provision of health services; and acceptability, which is concerned with attitudinal and personal factors.

Human activities can cause changes in the environment. On the other hand, environmental changes that occur also influence human activities. The rates of change are increasing as industry develops replacing human muscular energy with energy produced from fossil fuels (Bieth, 2021). Carbon dioxide (CO₂) is the main

compound produced by burning fossil fuels, both in vehicles and in power plants. Based on a report by the scientific team of the Global Carbon Project in 2022, Indonesia is one of the countries in the list of the 10 largest carbon emitting countries in the world. CO₂ emissions, especially from industrial activities and the burning of fossil fuels, have been significant contributors to climate change, posing a serious threat to the environment and human development. Rising CO₂ levels not only accelerate global warming, but also cause damaging environmental effects, the rise of sea levels, the rise of extreme weather events and disruption of ecosystems. These environmental challenges have a straight impact on human health, food security and the overall stability of socio-economic conditions.

**Table 1.1 Indonesia's Share of Greenhouse Gas Emission on 2019
(Thousand Tonnes of CO₂)**

Sector	Share of Indonesia's Greenhouse Gas Emissions	Percentage (%)
Energy	638.808	34.22
Industrial Process and Production Use (IPPU)	60.175	3.22
Agriculture	108.598	5.82
Forestry and Land Use (FOLU)	468.425	25.10
Peat Fires	456.427	24.45
Waste	134.119	7.19
Total	1.866.552	100

Source: Central Bureau of Statistics

Table 1.1 illustrates the categories responsible for greenhouse gas emissions in Indonesia in 2019, expressed in thousands of tons of CO₂. In 2019, energy was the largest contributor to greenhouse gas emissions, amounting to 638,808 or 34.22

percent of the total greenhouse gas emissions in Indonesia. Moreover, Yumashev et al. (2020) investigated that energy has a beneficial and statistically significant impact on development. The utilization of environmentally friendly energy sources, which have minimal carbon emissions, will facilitate the advancement of sustainable development. The impact of per capita CO₂ emissions on development is found to be negative and insignificant.

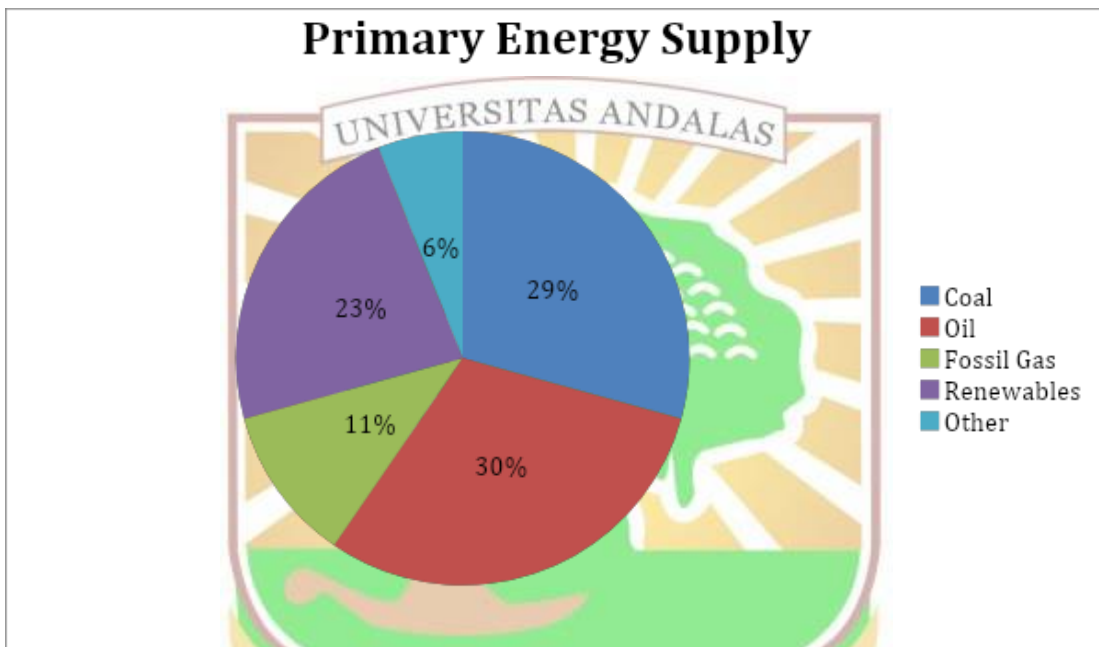


Figure 1.2 Total Primary Energy Supply 2021
Source: Climate Transparency Reports

Figure 1.2 illustrates the primary energy supply in Indonesia in 2021. It demonstrates that the largest energy source in Indonesia is oil, accounting for 30% of the total primary energy supply. Subsequently, coal accounts for 29% of the total primary energy supply. In conclusion, it can be stated that Indonesia's primary energy supply is still dominated by non-renewable natural resources. This is inextricably linked to Indonesia's large reserves of natural resources such as coal, oil and natural gas. In addition, the growth of the Indonesian economy and population will require a large supply of energy. In 2021, the utilization of renewable resources remained at approximately 23% of the total energy supply. Limited technology and investment is

one of the reasons why renewable energy has not been widely developed in Indonesia.

Fakhri et al., (2024) in a study that examined the immediate and long-term effects of CO₂ emissions on the Human Development Index (HDI) in Saudi Arabia and several developed countries. The findings indicate that, in the short term, carbon dioxide emissions exert a statistically significant positive effect on the Human Development Index in Saudi Arabia at the 1% level of significance. For other countries, including the United States, Sweden and Mexico, carbon dioxide emissions exert a substantial negative influence on the Human Development Index at the 5%, 5% and 10% levels respectively. In the long term, carbon dioxide emissions exert a beneficial and statistically significant influence on the Human Development Index in Norway and Saudi Arabia at the 5% and 10% levels respectively. In contrast, a negative and statistically significant impact was observed at the 10% level in the United Kingdom, Sweden and the United States. Negative and insignificant results were also found in France and Mexico. Positive and insignificant results were found in Morocco.

Based on the above description, this phenomenon will be analyzed in a study on the correlation and the effect of Corruption Perception Index, Urbanization and Carbon Dioxide Emissions on Human Development Index in Indonesia. Therefore, the researcher will conduct a study titled **"Understanding the Forces behind the Human Development Index of Indonesia"**

1.2 Problem Formulation

The focus of the discussion of this study can be formulated as follows: What are the effects of Corruption, Urbanization and CO₂ Emission influence the Human Development Index in the short run and the long run in Indonesia for the period 1995-2022?

1.3 Research Objectives

This study has objectives to answer the question that have been formulated:
To analyze the impact of Corruption, Urbanization and CO₂ Emission on Human Development Index in the short run and the long run in Indonesia for the period 1995-2022

