

## *The Impact of Digital Economic Transformation on Green Economic Growth in Indonesia*

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### **Abstract**

*Digital economic transformation has a significant impact on green economic growth in Indonesia. This article highlights the important role of digital technology and green business practices in increasing efficiency, productivity, and environmental awareness in various economic sectors. Digital economic transformation refers to the use of digital technology in various aspects of economic life, such as e-commerce, fintech, and business digitalization. Meanwhile, a green economy refers to sustainable and environmentally friendly development. The positive impacts of this transformation include reducing the carbon footprint, creating new jobs, and diversifying the economy. However, there are still challenges that need to be overcome, such as the digital divide and limited adoption of environmentally friendly business practices. To overcome this challenge, supportive policies, investment in digital infrastructure, and increased awareness of the importance of sustainable development for green economic growth in Indonesia are needed.*

**Keywords:** *Digital economic transformation, Green economy, Economic growth, Impact*

### **INTRODUCTION**

A Green Economy is a business or economic activity carried out to create or improve human welfare and human justice in the long term, in terms of production, distribution, and consumption of goods and services, which can significantly reduce ecological and environmental damage (United Nations Environment Program, 2011). The United Nations Environment Program interprets the concept of a green economy as a low-carbon economic activity with effective and efficient use of resources and is socially inclusive. The existence of this green economy can be used to spur innovation and investment in terms of realizing sustainable development (Kaszetal, 2017). Green Economy is based on three pillars, namely environmental, social, and economic. The Green Economy is becoming a focus throughout the world. This is because the increase in economic activity and human population has resulted in energy resources, especially non-renewable energy, continuing to be exploited for development which has an

impact on deteriorating environmental quality and causing growth greenhouse gas emissions. This increasingly deteriorating environmental condition has encouraged the formation of a Green Economy as a solution for economic development but not at the expense of environmental sustainability (Ansari et al. 2020; Aziz et al. 2020).

A country's economic growth is calculated using GDP. The growth of various sectors is a determinant of economic development. Economic development is related to production and consumption activities which are also closely related to environmental problems. The hope is that the growth of the economic sector can make a positive contribution to environmental sustainability. However, in reality, the growth of the economic sector causes environmental damage. This is by following the 1995 Environmental Kuznets Curve (EKC) hypothesis where industrial-based economic growth will increase environmental damage, even

though environmental sustainability also has a very important role in economic sustainability (Grossman and Krueger, 1995). The green economy tries to overcome the problems that arise from the growth of this economy.

In recent years, Indonesia has witnessed a significant shift in the global economic paradigm. The digital economic transformation has become a key driver in changing the way we work, interact, and do business. On the other hand, increasing awareness of environmental sustainability has accelerated green economic growth in many countries, including Indonesia. In this context, these two aspects, namely the digital economy and the green economy, are the main focus of efforts towards sustainable economic growth in Indonesia.

The growth of the digital economy in Indonesia has recorded extraordinary achievements, supported by increasingly widespread internet penetration, rapid adoption of information technology, and the increasing number of smartphone users. As a large archipelagic country, digital transformation has opened up new opportunities in connecting remote islands and increasing access to important services such as education, health, and finance. However, the impact of digital economic transformation is not only felt in the technology sector but has also spread to various other economic sectors, including agriculture, manufacturing, and services.

Meanwhile, awareness of the need to protect the environment has driven green economic growth in Indonesia. This country has abundant natural wealth but also faces serious challenges related to environmental damage, including deforestation, air pollution, and climate change. In response to these challenges, governments and the private sector have collaborated to develop sustainable solutions, such as investment in renewable energy, better waste management, and the promotion of organic farming.

In this view, it is important to understand how the interaction between the digital economy and the green economy can form the foundation for sustainable economic growth in Indonesia. The key question that needs to be answered is how digital technological innovation can be used to support environmentally friendly business practices and how governments can design policies that encourage this transformation. Through a thorough analysis of the impact of digital economic transformation and the green economy, this article aims to provide better insight into the role of the two keys to this aspect in encouraging green economic growth in Indonesia.

The success of a green economy can be seen in the reduction in carbon emissions from year to year. Carbon emissions are one of the main indicators of a green economy. If the increase in carbon emissions is high, it could mean that the implementation of the green economy in Indonesia is less successful and vice versa. The following graph shows the fluctuations in total carbon emissions in Indonesia from 1990 to 2020.

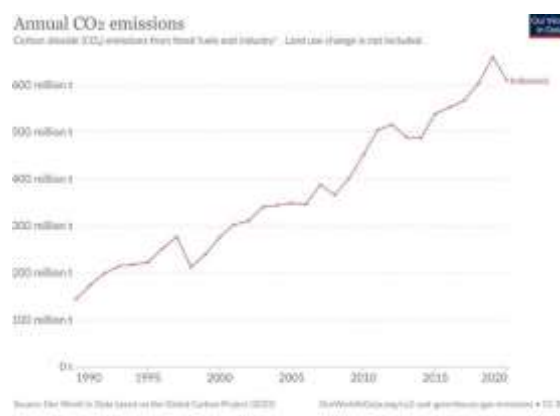


Figure 1. Fluctuations in Total Carbon Emissions

Source: Our World In Data

## METHOD

This research uses a quantitative approach and explanatory research type. The data collection technique in this research is

literature study and documentation. Researchers use secondary data (data from related agencies) as needed. In the literature and documentation study, data was collected through the official websites of relevant agencies, research reports, scientific journals, and other publications relevant to this research.

## **RESULTS AND DISCUSSION**

National economic recovery, after being affected by the Covid-19 pandemic, is by prioritizing a green economy. The green economy will be Indonesia's long-term strength in building a sustainable economy. Indonesia has strengths in terms of environmentally friendly products which have the potential to increase the competitiveness of domestic products in the global market. Low-carbon products, efficient use of resources, and the ability to reduce the risk of environmental damage are the characteristics of products that will dominate Indonesia's green economy.

The forest ecosystem valuation study states that Indonesia is the country with the third largest area of tropical forest in the world. With an area of 92 million hectares, tropical forests as the lungs of the earth are spread across Kalimantan, Sulawesi, Sumatra, Papua, and parts of Java. These forests are truly Indonesia's future.

The study was launched in 2015 by the United Nations Office for REDD+ Coordination in Indonesia (UNORCID) and the UN environmental agency, UNEP. In this study, it is stated that implementing a green economy contributes more benefits to Indonesia than businesses that are run normally.

The implementation of a green economy is also considered to be able to reduce carbon dioxide emissions. This research reveals that with the implementation of a green economy, the cumulative carbon dioxide emissions produced from 2015 to 2030 are only equivalent to 689 million tonnes of carbon dioxide (CO<sub>2</sub>). Meanwhile, normal economic implementation can produce the

equivalent of 2,484 million tons of CO<sub>2</sub> in the same period. This research shows that if Indonesia implements a green economy, total employment in the forestry sector in 2030 will be sufficient for 247,945 people. Meanwhile, the implementation of business as usual will only result in total employment in the forestry sector for 193,774 people.

"Nature is an important element of a country's progress. Preserving ecosystems has a positive impact on ensuring food security and water availability," said Pavan Sukhdev, the research leader.

The development of the digital economy has proven to be the main catalyst in driving national economic progress and has been demonstrated through its contribution to GDP which reached 7.6%-8.7% in 2022. Apart from that, the Government also continues to carry out digital economic transformation from time to time, considering that Indonesia also has significant potential in the form of a large population, wide market share, high technology adoption, and increasing economic and financial digitalization.

Referring to Coordinating Minister Airlangga, the White Paper on the National Strategy for Development of the Indonesian Digital Economy 2030 is a guideline for ministries and institutions (K/L) and other stakeholders in implementing digital economic development and is a reference in determining Indonesia's position in the international world.

The development of the digital economy until 2045 is being prepared through three phases, namely the prepare phase which starts with improving the basic digital foundation to ensure society is ready for transformation. Then, the transformation phase is an effort to accelerate the transformation to create a smart society and business. Also the lead phase by starting to set standards in future innovation technology.

Furthermore, to push Indonesia to the lead stage in 2045, many target aspirations have been set, including increasing

Indonesia's digital competitiveness which was previously in 51st place in 2022 to 20th in 2045 and the contribution of the digital economy must reach 20% of GDP.

The book also contains strategies in the form of six main pillars of digital economic development. First, in the Infrastructure sector, the intervention will target expanding the reach of internet penetration, improving the quality of digital infrastructure, as well as improvements in edge computing. To date, the government itself has built several digital infrastructures such as the Palapa Ring fiber optic network which connects 57 districts/cities, additional BTS, and the use of the Satria multifunction satellite for 3T locations.

Then the second pillar in the HR sector, interventions are aimed at targeting formal education, workforce empowerment, and lifelong learning to ensure every individual has skills in the digital era. Indonesia is predicted to need up to 9 million digital talents in the next 15 years or 600 thousand every year. Currently, the government continues to encourage improving people's digital skills through pre-employment, digital talent scholarships, and collaboration with private parties, such as Apple, Microsoft, and Amazon.

The third pillar, namely in the field of research, innovation, and development (R&D), will increase seven commitments in research and development, as well as encourage a culture of innovation. The government itself has currently also provided support in the form of a super tax deduction of up to 300% for R&D activities.

Fourth, create a business ecosystem that is productive, advanced, and has high added value through digitizing priority economic sectors such as manufacturing, trade, and agriculture. The fifth pillar is that together with the relevant authorities we will open the door to financial inclusion with a target level of inclusion finance will reach 90% by 2024, and the final pillar will be support for a regulatory and policy ecosystem

that is healthy, fair, oriented towards consumer protection and national security.

In the future, people will move towards a green economy and we as the Indonesian nation have great strength in the green economy. Next month, construction of a green industrial park will begin in North Kalimantan, the energy of which will come from green energy from Sunyai Kayan.

## **CONCLUSION**

From the analysis carried out, it can be concluded that digital economic transformation in Indonesia is present in six main pillars of digital economic development which strive to improve people's welfare as the ultimate goal of green economic activities, where Indonesia can produce environmentally friendly, low carbon products that are competitive in the global market. The six main pillars of digital economic development, namely the first is improving the quality of digital infrastructure, as well as improvements in edge computing. Then in the HR sector, there is an increase in people's digital skills through pre-employment, digital talent scholarships, and collaboration with the private sector. Furthermore, in the field of research, innovation, and development (R&D) by increasing seven commitments in research and development, as well as encouraging a culture of innovation that creates a business ecosystem that is productive, advanced, and has high added value. The fourth pillar is the implementation of digitalization of priority economic sectors such as manufacturing, trade, and agriculture. The fifth pillar, the relevant authorities will open the door to financial inclusion. And finally, there is support for a regulatory and policy ecosystem that is healthy, fair, and oriented toward consumer protection and national security. With these assumptions, digital economic transformation has a significant impact on green economic growth in Indonesia. However, challenges such as the digital divide and limited adoption of environmentally friendly business practices still need to be overcome to ensure sustainable green economic growth in the future.

## SUGGESTION

Based on these conclusions, several suggestions that can be proposed are:

1. The government needs to increase investment in digital infrastructure and internet access in rural areas to reduce the digital divide and ensure that the benefits of digital economic transformation can be felt equally across the country.
2. Companies in Indonesia need to continue to encourage technological innovation and adopt environmentally friendly business practices as part of their growth strategy. This includes investment in renewable energy, better waste management, and efficient use of natural resources.
3. The government and private sector need to work together to design policies that support digital economic transformation and the green economy. These include fiscal incentives for investment in green technologies, regulations aimed at reducing carbon emissions, and the promotion of innovation in various economic sectors.
4. Increasing awareness of the importance of sustainable development needs to be promoted through education and public campaigns. Communities need to be empowered with the knowledge and skills necessary to contribute to green economic growth and safeguard the environment for future generations.

By implementing these suggestions, it is hoped that Indonesia can continue to progress in developing sustainable green economic growth and become an example for other countries in achieving sustainable development.

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