International Journal of Current Economics & Business Ventures, 5 (2) 2025, 540-549
**International Journal of Current Economics & Business Ventures**
https://scholarsnetwork.org/journal/index.php/ijeb

# THE INFLUENCE OF NETWORK READINESS, DIGITAL COMPETITIVENESS, AND GDP PER CAPITA ON GLOBAL DIGITAL ECONOMIC ACTIVITY

**Tri May Nuriska[1], Sri Indah Nikensari[2], Agus Wibowo[3]**
nuriskatrimay@gmail.com
Faculty of Economics and Business, State University of Jakarta, Indonesia

## Abstract

This study aims to determine the effect of network readiness, digital competitiveness, and GDP per capita on global digital economic activity. The research method used is a quantitative descriptive approach. The population of this study is global countries. The sample consists of 49 global countries using purposive sampling and considering data limitations. Data was collected from various sources, such as Huawei, the World Bank, the Network Readiness Index, and IMD World. The data analysis technique used was E-Views 12. The results of this study indicate that network readiness, digital competitiveness, and GDP per capita have a positive and significant effect on global digital economic activity in 2023.

**Keywords: Network Readiness, Digital Competitiveness, GDP per Capita, Global Digital Economy Activity**

## BACKGROUND

Global economic activity refers to all economic processes that take place in various countries and are interconnected, one of which is through trade (Harahap et al., 2024). However, over time, trade competition between countries has intensified. One example is the trade war between the United States and China, in which both countries imposed trade tariffs on each other. This trade war began in January 2018, when the United States imposed additional tariffs on washing machines and solar panels from China (Khaldun et al., 2023). In 2018, global economic activity experienced a decline in trade growth, which was considered a significant factor for overall national growth. Trade growth declined from 5.25% in 2017 to 4% in 2018, which had a negative impact on investment strategies around the world (Jain, Manjula., & Saraswat, 2019).

Digital economic activities have become a solution for businesses in facing global instability, including the impact of trade wars (Frolova, 2021). Digitalisation enables companies to operate more flexibly without relying on physical trade, which is affected by protectionist policies (Alam & Azmi, 2024). With technological advances such as AI, blockchain, and digital currencies, businesses can increase efficiency, reduce dependence on traditional payment systems, and accelerate global transactions (Martinez & Magdalena, 2024).

Countries with high network readiness have stable and high-speed digital activities, enabling them to be more flexible in facing global uncertainty, achieve more effective digital economic integration, and adapt to changes in trade policy (Dutta & Lanvin, 2022). On the other hand, countries with medium or low network readiness will find it difficult to adapt to the dynamics of the digital economy due to limited internet infrastructure and dependence on global trade policies. Therefore, optimal network readiness is essential for countries to maintain their digital economic competitiveness in an increasingly complex trading environment (Košíková & Vašaniˇ, 2025).

A country's digital economic activity is also influenced by digital competitiveness factors that play an important role in supporting technology-based economic innovation. Based on the IMD World Competitiveness Ranking (WCR), countries with high levels of digital competitiveness have regulations that support digital economic activity, a large workforce skilled in digital technology, and significant

investment in the development of artificial intelligence and automation. These factors determine how a country can compete in the global digital economy and face challenges such as trade wars or changes in economic policy (Febrianty, 2022).

A country's digital competitiveness is not only determined by technological investment and infrastructure readiness, but also by the level of public income as reflected in GDP per capita. The higher a country's per capita income, the greater the opportunity for its citizens to engage in digital economic activities, both as consumers and business actors (Khazaei, 2022). In addition, a high GDP per capita enables increased investment in technology research and development, strengthens the country's digital competitiveness, and accelerates the adoption of a digital-based economic system (Soekarni et al., 2023).

The level of digitalisation occurring in several developing countries rivals that of developed countries. The digital economy accounts for between 10% and 35% of GDP in developed countries and between 2% and 19% of GDP in developing countries. Malaysia, Chile and China lead the way in the developing economy group. These countries are on par with developed economies in terms of digital asset usage and demonstrate the contribution that digital technology can make at every stage of development. In the context of the modern economy, the spread of digital technology is clear evidence that even in countries with low levels of digitisation, the digital economy sector has made a significant contribution to gross domestic product (GDP). Although the technology manufacturing sector is still small, many businesses are beginning to take advantage of high-speed internet access, utilise cloud services, and prepare to adopt future technological advances (Gomes et al., 2022a).

Based on the background described above, global digital economic activity is influenced by factors such as network readiness, digital competitiveness, and GDP per capita. Therefore, this study aims to make a new contribution by integrating these three variables into the latest model as factors influencing global digital economic activity. The novelty of this research lies in its holistic approach, which not only examines each variable separately but also analyses the interactions and interrelationships between these three factors in shaping sustainable digital economic activity.

## THEORETICAL FRAMEWORK

### The Bounty and Spread Theory

The grand theory in this study uses the Bounty and Spread theory. The Bounty and Spread theory was introduced by Brynjolfsson dan McAfee (2014) in their book *The Second Machine Age; Work, Progress, and Prosperity in a Time of Brilliant Technologies.* This theory explains how advances in digital technology provide enormous benefits (bounty) while creating economic inequality (spread).

The Bounty and Spread Theory forms the basis for understanding the impact of digital technology on economic welfare and inequality. Bounty refers to the abundance of benefits generated by technological advances, such as increased productivity that enables more efficient production, wider access to information through the internet and artificial intelligence, and improved welfare through innovation in various sectors, including health, education and entertainment.

### Digital Economy Theory

According to Tapscott (1990) in his book *The Digital Economy: Promise and Peril in the Age of Networked Intelligence,* digital economy theory is a sociopolitical and economic system characterised as an intelligence space, encompassing various information access instruments, information capacity, and information processing (Permana & Puspitaningsih, 2021).

**Digital Economic Activity**

Global digital economic activity encompasses all economic activities based on digital technology, such as the internet, artificial intelligence (AI), and big data, which aim to improve efficiency, productivity, and accessibility in various economic sectors. These activities include sales transactions through e-commerce, technology-based financial services in fintech, and the use of digital platforms for the distribution of goods and services. With the advent of the digital economy, business processes have become faster, more flexible, and more integrated, enabling businesses and consumers to interact without geographical boundaries. In addition, the digital economy encourages innovation in business models, creates new opportunities for creative industries, and enhances a country's economic competitiveness in the era of globalisation (Athapaththu & Kulathunga, 2018).

**The Theory of Innovation Diffusion**

The Theory of Innovation Diffusion is a theory that explains how new ideas, technologies, or practices spread and are adopted by individuals or groups within a social system. This concept was first developed by Everett M. Rogers (2019) in his work entitled *'Diffusion of Innovations (1962)'*, which was later updated in its fifth edition in 2003. Diffusion is defined as the process of communicating innovations through certain channels, within a certain period of time, among members of a social system. This theory has been widely used in the study of communication, information technology, community development, and public health.

**Network Readiness**

Network Readiness is an index developed by the World Economic Forum as a composite measure of Information and Communication Technology (ICT) in a country. According to the Global Information Technology Reports (GITR) published annually since 2001, the Network Readiness Index is an index that reflects the capacity, adoption, use and impact of information and communication technology in each country (Pratipatti & Gomaa, 2019).

**Competitive Advantage Theory**

Competitive Advantage Theory is one of the main theories in strategic management that explains the mechanism of achieving sustainable competitive advantage by business entities, industries, and countries. This theory was first developed by Porter (1985) in his work entitled *Competitive Advantage: Creating and Sustaining Superior Performance*, which continued the initial framework in *Competitive Strategy (1980).*

**Digital Competitiveness**

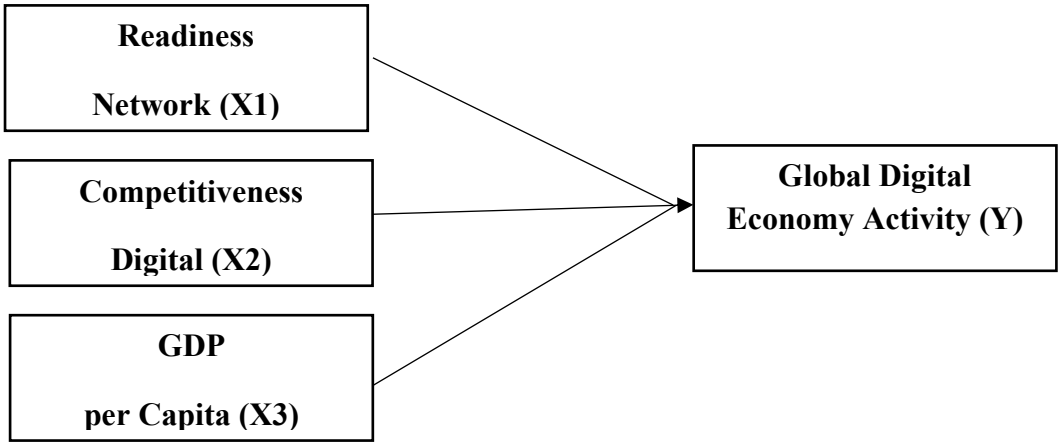
Digital competitiveness is a country's ability to use and develop digital technology, which can transform the way governments, business models, and society in general operate. Digital competitiveness refers to the ability of a country or organisation to adopt, develop, and utilise digital technology to improve efficiency, innovation, and productivity. All of this helps to show how innovative a country is and how much the digital economy influences its performance (Bris & Caballero, 2023).

**GDP per Capita**

According to Mankiw (2000), GDP per capita is one of the indicators used to assess a country's development performance. GDP per capita is the ratio between GDP and population size, reflecting the average income earned by each individual. In addition, GDP per capita can also be interpreted as the amount of funds available to companies and households for spending. Thus, GDP per capita can illustrate a country's ability to purchase goods and services. If a country's GDP per capita is high enough,

then that country has a great ability to make purchases, making it a potential market for the marketing of a commodity (Oktaviani, 2012).

## RESEARCH HYPOTHESIS




The hypotheses in this study are as follows:

a. Hypothesis 1:
   H1 : Network Readiness (X1) has a positive and significant effect on Global Digital Economic Activity (Y)
   H0 : Network Readiness (X1) does not have a positive and significant effect on Global Digital Economic Activity (Y)
b. Hypothesis 2
   H1: Digital Competitiveness (X2) has a positive and significant effect on Global Digital Economic Activity (Y)
   H0: Digital Competitiveness (X2) does not have a positive and significant effect on Global Digital Economic Activity (Y)
c. Hypothesis 3
   H1: GDP per capita (X3) has a positive and significant effect on Global Digital Economic Activity (Y)
   H0: GDP per capita (X3) does not have a positive and significant effect on Global Digital Economic Activity (Y)

## METHOD

The method used in this study is a quantitative descriptive approach, which is research that explains the relationship between variables using data analysis with econometrics using secondary data. The data used in this study is secondary data obtained from various sources such as Huawei, the World Bank, Network Readiness Index, and IMD World.

The unit of analysis in this study is global digital economic activity. The time period studied is 2023. The population used in this study is global countries.
In this study, purposive sampling was used to determine the sample. Purposive sampling is a logical sampling technique that will represent the population with certain criteria (Arikunto, 2013). The sample criteria selected were 49 global countries that had the availability of data on the variables to be studied. Therefore, these 49 global countries became the sample used in this study.

In a cross-sectional data regression model, if the data used is cross-sectional data (one period), with more than one independent variable, then the regression model used is Gaussian regression (Sihombing, 2022).

The model equation in this study has the following form:

$GDI_i = \boldsymbol{\alpha} + \beta_1 NW_i + \beta_2 DCI_i + \beta_3 YCAP_i + e_i$

Description:

$GDI_i$= Global Digital Economy Activities

$\boldsymbol{\alpha}$ = Constant

$\beta_1$ = Network readiness regression coefficient

$\beta_2$ = Digital competitiveness regression coefficient

$\beta_3$ = GDP per capita regression coefficient

$NW_i$ = Network readiness

$DCI_i$= Digital competitiveness

$YCAP_i$= GDP per Capita

$e_i$= *Random eror*

The variables in this study consist of one dependent variable, namely Global Digital Economic Activity, and three independent variables, namely Network Readiness, Digital Competitiveness, and GDP per Capita.

Network Readiness is measured based on the Network Readiness Index, Digital Competitiveness is measured based on the digital competitiveness index, GDP per Capita is measured based on GDP per Capita, and Global Digital Economic Activity is measured based on the Global Digitalisation Index.

The regression equation describes the linear relationship between the dependent variable (Y) and the independent variables (X). If the coefficient of variable X is positive, this indicates that a 1% increase will cause a x% increase in Y. Conversely, if the coefficient is negative, a 1% increase in X will cause a x% decrease in Y. In hypothesis testing, to measure the collective impact of independent variables on the related variable, R-squared is used, which has a value between 0 and 1. The decision is based on the t-calculated value compared to the t-table; if t-calculated ≤ t-table or insignificant, then $H_0$ can be approved. Conversely, if the t-calculated is > t-table or significant, then $H_0$ will be rejected.

## RESULT

**Table 2. Linear Regression Results**

The cross-sectional data model approach test uses a Gaussian regression model. Based on the test results using E Views 12, the estimation results obtained are as follows:

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -7.462915 | 5.584575 | -1.336344 | 0.1882 |
| NW | 0.767748 | 0.155888 | 4.925002 | 0.0000 |

| | | | | |
|---|---|---|---|---|
| DCI | 0.153534 | 0.089822 | 1.709305 | 0.0943 |
| YCAP | 0.000105 | 472E-05 | 2.218598 | 0.0316 |

| | | | |
|---|---|---|---|
| R-squared | 0.895428 | Mean dependent var | 53.15306 |
| Adjusted R-squared | 0.888456 | S.D. dependent var | 12.73900 |
| S.E. of regression | 4.254595 | Akaike info criterion | 5.811983 |
| Sum squared resid | 814.5708 | Schwarz criterion | 5.966418 |
| Log likelihood | -138.3936 | Hannan-Quinn criter | 5.870576 |
| F-statistic | 128.4413 | Durbin-Watson stat | 1.187734 |
| Prob(F-statistic) | 0.000000 | | |

*Source: Ouput E Views 12*

Based on Table 2, it is known that the network readiness variable (X1) has a value of 4.925002 > t table 2.01410 with 0.0000. This result shows that the network readiness variable has a positive and significant effect on global digital economic activity. Furthermore, the digital competitiveness variable (X2) has a value of 1.709305 > t table 1.67943 with a probability value of 0.0943. This result shows that the digital competitiveness variable has a positive and significant effect on global digital economic activity. Finally, the GDP per capita variable (X3) has a value of 2.218598 > t table 2.01410 with a probability value of 0.0316. This result shows that the GDP per capita variable has a positive and significant effect on global digital economic activity.

## DISCUSSION

### The Effect of Network Readiness on Global Digital Economic Activity

The regression analysis results show that the Network Readiness variable has a coefficient value of 0.767748. The t-statistic probability value for the Network Readiness variable is 0.0000, which is below the alpha value. This indicates that Network Readiness has a significant positive effect on Global Digital Economic Activity in 2023.

This is in line with research conducted by Usoro, (2012), which found that the impact of economic and cultural factors on network readiness has a positive and significant relationship. This finding is particularly relevant when linked to the current dynamics of global digital economic activity, where network readiness is a key prerequisite for countries to actively participate in the technology-based economy.

Another study conducted by Bánhidi & Dobos (2024) provides additional confirmation that network readiness is a central element in the development of global digital economic activity. By comparing the NRI and the International Digital Economy and Society Index (I-DESI) in the European Union region, they found that countries with high digital efficiency have strong governance structures and digital inclusion, two important components in creating global technological competitiveness. Countries such as Estonia and Lithuania, despite their economic limitations, have achieved high rankings in economic digitalisation due to progressive policies that support network readiness.

### The Effect of Digital Competitiveness on Global Digital Economic Activity

The regression analysis results show that the Digital Competitiveness variable has a coefficient value of 0.153534. The t-statistic probability value in this study is 0.0943 with an alpha value of 10%. It can be concluded that the Digital Competitiveness variable has a significant positive effect on Global Digital Economic Activity in 2023.

This is in line with the results of research conducted by Miškufová et al., (2025), which shows that countries with high digital competitiveness have a strong correlation with digital economic growth and technological innovation. The results of these findings are very significant because countries with high

digital competitiveness are better able to develop and export value-added digital services, create a sustainable innovation ecosystem, and attract global investment in strategic sectors such as fintech, cloud computing, and AI. This is in line with global digital economy trends, where economic growth increasingly relies on digital technology as the main driver of productivity and competitiveness. Another study conducted by Santoso et al (2024) shows that countries with high digital competitiveness are better able to adapt to global economic changes and deal with digital disruption more effectively.

**The Effect of GDP per Capita on Global Digital Economic Activity**

The regression analysis results show that the GDP per capita variable has a coefficient value of 0.000105. The t-statistic probability value for the GDP per capita variable is 0.0316. This probability value is below the alpha value of 5%. This indicates that GDP per capita has a significant positive effect on Global Digital Economic Activity in 2023.

This is in line with research conducted by Gomes et al (2022), which found that digitalisation has a positive impact on GDP per capita growth in OECD countries. The study by Gomes et al (2022), which analysed 36 OECD countries during the period 2000–2019, shows that digitalisation indicators such as internet penetration, mobile phone subscriptions, and fixed broadband networks have a positive and significant impact on GDP per capita growth. These findings confirm that GDP per capita not only serves as a result of the digitalisation process, but also reflects a country's capacity to support and accelerate digital economic activity. The results of the Gomes et al (2022), study also show that the positive correlation between digitalisation and economic growth is most prominent in innovative countries, namely the group of countries with high GDP per capita. This means that the success of global digital economic activity is highly dependent on the synergy between a country's level of prosperity and its digital readiness.

## CONCLUSION

According to the results of research conducted by researchers on the influence of Network Readiness, Digital Competitiveness and GDP per Capita on Global Digital Economic Activity, the following conclusions can be drawn:

1) There is a significant positive influence of Network Readiness on Global Digital Economic Activity.
2) There is a significant positive influence of Digital Competitiveness on Global Digital Economic Activity.
3) There is a significant positive influence of GDP per Capita on Global Digital Economic Activity.

## BIBLIOGRAPHY

Alam, G. N., & Azmi, F. (2024). Kebijakan Proteksionisme Indonesia dalam Pembatasan Impor Barang Cross Border Melalui E-Commerce: Studi Kasus Aplikasi Shopee. *Jurnal Perdagangan Internasional*, *2*(1), 31–043. https://doi.org/10.33197/jpi.v2i1.2014

Arikunto. (2013). *Prosedur Penelitian: Suatu Pendekatan Praktik. Jakarta: Rineka Cipta.*

Athapaththu, J. C., & Kulathunga, D. (2018). Factors Affecting Online Purchase Intention: Effects of Technology and Social Commerce. *International Business Research*, *11*(10), 111. https://doi.org/10.5539/ibr.v11n10p111

Bánhidi, Z., & Dobos, I. (2024). Measuring digital development: ranking using data envelopment analysis (DEA) and network readiness index (NRI). *Central European Journal of Operations Research*, 1089–1108. https://doi.org/10.1007/s10100-024-00919-y

Dutta, S., & Lanvin, B. (2022). The Network Readiness Index 2022: Stepping into the new digital era. In *Portulanis Institute*. https://networkreadinessindex.org/wp-content/uploads/reports/nri_2022.pdf

Erik Brynjolfsson dan Andrew McAfee. (2014). *The Second Machine Age*. *4*(1), 1–23.

Febrianty, V. (2022). *Infrastruktur Digital, Seberapa Penting? Jakarta: Kerja Sama Pemerintah dengan Badan Usaha Kementerian Keuangan Republik Indonesia.* https://kpbu.kemenkeu.go.id/read/1152-1408/umum/kajian-opini%0Apublik/infrastruktur-digital-seberapa-penting.

Frolova, N. S. (2021). Strategy For The Global Trade War In The Digital Economy. *International Scientific Conference*, *113*, 144–150. https://doi.org/10.15405/epsbs.2021.12.03.19

Gomes, S., Lopes, J. M., & Ferreira, L. (2022a). The impact of the digital economy on economic growth: The case of OECD countries. *Revista de Administracao Mackenzie*, *23*(6). https://doi.org/10.1590/1678-6971/eRAMD220029.en

Gomes, S., Lopes, J. M., & Ferreira, L. (2022b). The impact of the digital economy on economic growth: The case of OECD countries. *Revista de Administracao Mackenzie*, *23*(6), 1–31. https://doi.org/10.1590/1678-6971/eRAMD220029.en

Harahap, I., Matondang, K., Saajidah, A., & Ginting, H. N. B. (2024). Analisis Dampak Globalisasi Terhadap Perdagangan Internasional. *JLEB: Journal of Law, Education and Business*, *2*(1), 159–164. https://doi.org/10.57235/jleb.v2i1.1549

Ibnu Khaldun, R., Sari, R., & Ismira, A. (2023). Retaliasi China terhadap Amerika Serikat dalam Konteks Perang Dagang. *Hasanuddin Journal of International Affairs*, *3*(2), 68–81. https://doi.org/10.31947/hjirs.v3i2.27661

IMD Professor Arturo Bris, Jose Caballero, C. C. (2023). *The IMD World Digital Competitiveness ranking*. https://teknologi.bisnis.com/read/20200131/84/1195845/daya-saing-digital-indonesia-rendah

Jain, Manjula., & Saraswat, S. (2019). US–China Trade War: Chinese Perspective. *Management and Economics Research Journal*, *5*(4), 8. https://doi.org/10.18639/merj.2019.895478

Khazaei, M. (2022). *Impact of World Digital Competitiveness Indicators on Per Capita Income*. *8*(1), 17–32. https://doi.org/10.5296/wjbm.v8i1.19941

Košíková, M., & Vašaniˇ, P. (2025). *Exploring the Link Between Digital Readiness and Sustainable Development : A Cluster Analysis of EU Countries*. https://doi.org/https://doi.org/10.3390/su17115080

Martinez, D., & Magdalena, L. (2024). AI and Blockchain Integration : Enhancing Security and Transparency in Financial Transactions. *International Transactions on Artificial Intelligence (ITALIC)*, *3*(1), 11–20. https://doi.org/https://doi.org/10.33050/italic.v3i1.651

Miškufová, M., Košíková, M., Vašaničová, P., & Kiseľáková, D. (2025). Digitalization and Artificial Intelligence: A Comparative Study of Indices on Digital Competitiveness. *Information (Switzerland)*, *16*(4). https://doi.org/10.3390/info16040286

Oktaviani, A. R. (2012). *Pengaruh GDP Per Kapita , Harga dan Nilai Tukar terhadap Volume Ekspor Biji Kakao Sulawesi Selatan Ke Malaysia*. 1–10.

Permana, T., & Puspitaningsih, A. (2021). Studi Ekonomi Digital Di Indonesia. *Jurnal Simki Economic*, *4*(2), 161–170. https://doi.org/10.29407/jse.v4i2.111

Porter, M, E. (1985). *The Competitive Advantage: Creating and Sustaining Superior Performance*.

Pratipatti, S., & Gomaa, A. (2019). A Longitudinal Analysis of the Impact of the Indicators in the Networked Readiness Index (NRI). *Journal of International Technology and Information Management*, *28*(2), 17–50. https://doi.org/10.58729/1941-6679.1407

Rogers, E. M., Singhal, A., & Quinlan, M. M. (2019). *Diffusion of innovations. In An Integrated Approach to Communication Theory and Research, Third Edition*. https://doi.org/https://doi.org/10.4324/9780203710753-35

Santoso, F. Y. E., Samputra, P. L., & Daryanto, E. (2024). Digital Competitiveness and Economic Resilience. *Asian Journal of Engineering, Social and Health*, *3*(7), 1536–1548. https://doi.org/10.46799/ajesh.v3i7.353

Sihombing, P. R. (2022). *Aplikasi stata untuk statistisi Pemula. Gemala*.

Soekarni, M., Nugroho, A. E., Rifai, B., Mychelisda, E., Buhaerah, P., Pranata, N., Zulhamdani, M., Novandra, R., & Yuliana, R. R. R. D. (2023). *Strategi Pengembangan Daya Saing Ekonomi*

*Digital: Penguatan Inovasi Industri Manufaktur Berbasis Teknologi Digital*. https://penerbit.brin.go.id/press/catalog/view/576/437/15075

Usoro, A. (2012). *A Study of the Relationships between Economic and Cultural Factors and Network Readiness : A Focus on Africa ' s Regions*. *2*(June), 101–123.