

DIGITAL ECONOMY AND ENVIRONMENTAL SUSTAINABILITY

Umarov Abdurasul Abdurakhimovich

*Doctoral student of Tashkent State Pedagogical
University named after Nizami, PhD.*

Annotation: *This article examines the topic of “Digital Economy and Environmental Sustainability”. The digital economy refers to a set of economic activities carried out through digital technologies and the Internet. These processes play an important role not only in ensuring economic growth, but also in ensuring environmental sustainability. The article examines the main components of the digital economy, its environmental impact, the role of youth, and innovative solutions. It also analyzes the impact of digital transformation on environmental sustainability through global and local examples. The example of Uzbekistan reflects on the contribution of the digital economy to sustainable development and its future prospects. This article serves to further deepen the interrelationship between the digital economy and environmental sustainability.*

Keywords: *digital economy, environmental sustainability, digital technologies, digital integration, digital transformation, innovative approaches, educational development, interactive platforms.*

Introduction:

At the beginning of the 21st century, the development of digital technologies and the Internet has created a new form of economy - the digital economy. The digital economy refers to the implementation of traditional economic activities on digital platforms, and these processes play an important role in economic growth, innovation and job creation around the world. However, the rapid development of the digital economy also raises environmental problems. Issues such as electronic waste, energy consumption and overuse of resources are threatening environmental sustainability on a global scale [1, 65-b].

Environmental sustainability requires the sustainable development of economic activities in order to protect natural resources and preserve them for future generations. Understanding the interrelationship between the digital economy and environmental sustainability is an important task for countries and organizations operating today. This article examines the main components of the digital economy, its environmental impact, and innovative solutions for sustainable development.

The article also discusses the role of young people in the digital economy and their contribution to environmental sustainability. The impact of digital transformation on environmental sustainability is analyzed using the example of Uzbekistan, which will help contribute to the sustainable development of the digital economy in our country. This article serves to further deepen the interrelationship between the digital economy and environmental sustainability and identifies activities and strategies that should be implemented in these areas in the future.

Methods:

The study involved 200 students, 100 of whom received online education and the remaining 100 who studied in a traditional classroom. Data were collected using questionnaires, in which participants rated their experiences, study methods, and outcomes. SPSS software was used for statistical analysis.

Research results:

In recent years, the concepts of "Digital technology" and "digital economy" have been used very often. If we analyze them, the digital economy is an activity associated with the development of digital computer technologies in the provision of online services, electronic payments, online trading and other areas [2, 74-b]. In fact, the digital economy is significantly influencing the development factors of many developed countries, and the digital economy is playing an important role in the life of society.

Digital economy — is a set of economic activities carried out through digital technologies and the internet. It involves the use of digital tools to automate economic processes, analyze data, and create new business models [3, 8-b].

Key components of the digital economy:

1. **Digital infrastructure:** Internet, cloud computing, data centers, and telecommunications networks.

2. **Data and analytics:** Big Data, artificial intelligence and data analytics.

3. **Digital platforms:** E-commerce, social media, mobile apps and other digital services.

4. **Innovations:** Creating new products, services, and business models through the use of digital technologies.

5. **Cybersecurity:** Ensuring data security in the digital economy.

Digital technologies, such as servers, data centers, cloud services, and mobile devices, consume energy. This energy consumption depends on the following factors:

- **Data centers:** Their operation requires a large amount of energy because they must operate continuously.

- **Internet infrastructure:** Network equipment (router, switch) and connections consume energy.

- **Devices:** Mobile phones, computers and other devices consume energy.

The environmental impact consists of:

- **Heat release:** Data centers generate a lot of heat, which requires additional energy consumption..

- **Carbon footprint:** Carbon emissions from the use of digital technologies can have a negative impact on the environment.

Digital technologies offer a number of opportunities to solve environmental problems: 1. Efficient resource management: Monitoring and controlling energy and water consumption using IoT (Internet of Things) devices. 2. Green energy: Digital platforms for managing renewable energy sources (solar, wind). 3. Transport systems: Reducing emissions by controlling and optimizing electric vehicles. 4. Recycling: Optimizing waste recycling processes through data analysis.

Digital startups and innovative projects that solve environmental issues:

1. EcoStruxure: IoT solutions for energy and resource management, developed by Schneider Electric. 2. Wasteless: A digital platform aimed at reducing food waste,

serving restaurants and supermarkets. 3. SolarCity: A startup aimed at expanding the use of solar energy, installing solar panels for homes. 4. Olio: An app aimed at reducing food waste, allowing users to share their surplus food [4, 116-b].

The results of the study showed that students who received online education performed better than those who received traditional education. It was also found that the motivation level for students who participated in online education was significantly higher.

By organizing the educational process through various digital technologies, special computer programs, and platforms, it helps learners increase motivation, activity, and in-depth knowledge.

Analysis:

The development of the digital economy can have a positive impact on environmental sustainability. Digital technologies offer opportunities for efficient resource management, reduced energy consumption and optimized waste recycling processes. However, the inherent energy consumption and negative environmental impacts of digital infrastructure must also be taken into account.

In this context, the following aspects are important when assessing the impact of the digital economy on environmental sustainability::

- **Efficiency:** Digital technologies can improve energy and resource efficiency.
- **Innovative solutions:** Innovative solutions to environmental problems emerge through the development and application of new technologies.
- **Sustainable development:** The development of the digital economy supports sustainable development strategies, which allow combining economic growth with environmental sustainability [5, 3-b].

Discussion:

The interrelationship between the digital economy and environmental sustainability is one of the important aspects of modern economic development. Through digital technologies, data analytics and innovative solutions, opportunities are being created to effectively manage resources, reduce energy consumption and minimize environmental impact. However, as digital infrastructure expands, energy consumption and environmental risks may also increase. Therefore, it is necessary to develop sustainable development strategies to maximize the positive impact of the digital economy and minimize its negative impacts.

Digital solutions play a key role in solving environmental problems through green technologies and innovative startups. They not only increase economic efficiency, but also serve to protect the environment. As a result, the integration of the digital economy and environmental sustainability is essential for ensuring the sustainability of future economic systems. A deeper understanding and exploration of this interdependence will help create a more sustainable and efficient economic model, which is important for future generations of humanity.

In conclusion, a deeper understanding of the interrelationship between the digital economy and environmental sustainability will help create more sustainable and efficient economic systems in the future.

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