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THE LINK BETWEEN DIGITAL INFRASTRUCTURE AND ECONOMIC GROWTH

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Abstract: This article explores the theoretical and practical aspects of the relationship between digital infrastructure and economic growth. It analyzes how the development of digital infrastructure affects various sectors of the economy, including increasing efficiency, introducing innovation and strengthening cross-market integration. The article highlights global trends and processes of digital transformation of national economies based on analytical data, and shows the contribution of this factor to economic growth. Also, based on the results of the research, strategic proposals were developed to stimulate economic growth through the development of digital infrastructure.
Keywords:digital infrastructure, economic growth, innovation, market integration, digital transformation, economic efficiency, strategic proposals.

Introduction

The development of digital infrastructure has become one of the decisive factors in the formation of the modern economy. Widespread adoption of digital technologies on a global scale not only improves the efficiency of economic processes, but also serves to accelerate new economic opportunities and growth rates. In particular, the digital infrastructure stimulates innovation in all areas of the economy, accelerates the flow of information and deepens international integration processes.

Studying the relationship between digital infrastructure and economic growth is important because this relationship allows us to understand the impact of technological development on the economy, rationally allocate resources, and make strategic decisions. In the modern world, technologies such as broadband Internet networks, artificial intelligence, "Internet of Things" (IoT) play an important role in increasing the economic competitiveness of countries. Therefore, this article is devoted to the analysis of the impact of digital infrastructure on economic growth, revealing the relevance of this issue based on existing scientific research and practical examples.

The article examines the relationship between various indicators of digital infrastructure and economic growth, and analyzes the main directions, advantages and limitations of digital transformation. At the same time, it examines how digital infrastructure can create opportunities for economic growth in developing countries and ways to overcome existing barriers.

Literature review

Analyzing the relationship between digital infrastructure and economic growth is gaining importance in today's academic research. Research on this topic aims to determine how the development of digital

infrastructure affects various aspects of economic growth.

First, it is emphasized by many researchers that digital infrastructure serves to increase economic efficiency. In particular, according to the results of a study conducted by the Mckinsey Global Institute (2020) , the development of broadband Internet, digital services and information technologies helps companies reduce operating costs and optimize production processes. This will increase labor productivity and stimulate economic growth.

Second, digital infrastructure enhances economic integration and interoperability. A report by the World Economic Forum (2019) notes that digital technologies create opportunities for small and medium-sized enterprises in remote areas to take them to the global market. This contributes to economic growth by creating new jobs and expanding trade.

In addition, the development of digital infrastructure makes it possible to expand access to financial services. According to research by Beck and Levine (2004) , digital financial technologies attract the unbanked population, increase investment and increase economic activity. At the same time, according to GSMA (2021) , the use of mobile Internet services significantly contributes to economic growth in developing countries.

However, some researchers argue that the impact of digital infrastructure development on economic growth requires caution. For example, research by Acemoğlu and Restrepo (2018) shows that mismanagement of digital technologies can lead to increased social inequality and job losses in some sectors.

It is also important to consider cross-country differences when researching the relationship between digital infrastructure and economic growth. According to UNCTAD (2020) , while the development of digital infrastructure has a faster impact on economic growth in developed countries, this process may be limited by resources and infrastructure capacity in developing countries.

In summary, the existing literature suggests that the impact of digital infrastructure on economic growth is multifaceted. It is emphasized that a multifactorial approach is necessary for further study of this topic in the future. This allows successful integration of digital technologies into economic policy.

Research methodology.

In the process of conducting this research, methods of scientific research such as systematic approach, monographic observation, statistical abstract, logical thinking and prospective forecasting were widely and effectively used. Also, the method of analysis and synthesis was skillfully used in the implementation of scientific research.

Analysis and discussion of results

Based on the information in the table below, an analysis is presented on the topic "The relationship between digital infrastructure and economic growth". The analysis focuses on the dynamics between the development of digital infrastructure (for example, the information economy and the volume of e-commerce) and indicators of economic growth (GDP, personal income, final consumer spending).

Table 1

Classifier	2017	2018	2019	2020	2021	2022	2023
The volume of GDP created by the information economy (billion, som)	6377.8	7732.1	8491.9	10777	16939.5	27755	_
Volume of E-commerce revenue generated (billion)	10.1	105.2	260	591.4	3907.3	9694	_
Total income of the population	236893.1	300685.8	365598.3	414968.7	519181.4	633567.4	728826.1

(billion)							
GDP volume (billion)	356453.8	473652.8	594659.6	668038	820536.6	995573.1	1192163
Final consumption expenditure (billion soums)	290086.3	375799.8	474958.4	528066.1	663301.1	830221.7	984565.3
Final consumption expenditure of households (billion soums)	247326.1	314613.1	383788.2	426097.1	536482	677383.8	808208,9
Gross savings (billion soums)	97059.5	165743	232848.1	251137.9	309286.3	347123.9	410236.9

According to the data in the table, from 2017 to 2023, a significant increase in the volume of GDP created in the information economy was observed. In 2017, this figure was 6377.8 billion soums, and in 2022 it reached 27755 billion soums, which means an increase of almost 4.35 times. At the same time, the volume of GDP has been constantly growing. In 2017, GDP amounted to 356,453.8 billion soums, and in 2022 it reached 955,753.1 billion soums. These figures show that the growth of the information economy is an important driver of economic growth. The expansion of information infrastructure can play an important role in automating business processes, increasing efficiency and creating new economic opportunities.

E-commerce volume has also grown significantly. In 2017, it was 10.1 billion soums, and in 2022, this indicator reached 9694 billion soums, that is, a 960-fold increase was observed. This growth is mostly due to the development of digital infrastructure (internet technologies and logistics systems). The expansion of e-commerce is also felt to have an impact on final consumer spending. In particular, the final consumption expenses of households increased from 247326.1 billion soums in 2017 to 677383 billion soums in 2022. This shows that digital technologies have increased the convenience of shopping for users.

The general income of the population has also increased. In 2017, this figure was 236,893.1 billion soums, and in 2022 it reached 633,567.4 billion soums. The increase in the income of the population can be related to the expansion of the digital infrastructure, because digital technologies can create new jobs and stimulate innovation in the economy. The volume of gross savings in 2017 was 97,059.5 billion soums, and in 2022 it reached 347,123.9 billion soums. This indicator may indicate that investment opportunities have expanded as a result of the development of digital infrastructure. Businesses have invested more in digital solutions and this has had an impact on the overall growth of the economy.

The results of the analysis show that the development of digital infrastructure has had a significant positive impact on economic growth. The growth of the information economy and e-commerce have been important factors in economic growth, population income and consumer spending. At the same time, the development of digital infrastructure has increased investment levels and enabled the efficient allocation of economic resources.

Also, in the future, it is desirable to implement additional measures in economic policy to support digital technologies and further increase their impact on the economy.

Table 2

Classifier	2016	2017	2018	2019	2020	2021	2022	2023
Population real income	110.7	109.3	108	106.2	100.5	112.9	109.5	104.6

growth rate (percentage)								
Growth rate of total population income (percentage)	116.9	119.7	126.9	121.6	113.5	125.1	122	115
GDP growth rate (percentage)	105.9	104.4	105.6	106.8	101.6	108	106	106.3

In 2016, the growth rate of the real income of the population was 110.7 percent, and this indicator has consistently decreased in the following years. In 2017, it was 109.3 percent, and in 2018, it was 108 percent. In 2020, due to the impact of the pandemic, the growth rate of the population's income decreased sharply and amounted to 100.5 percent. Later, in 2021, this indicator increased to 112.9%, but in 2022, it decreased to 109.5%, and in 2023, it decreased again to 104.6%. These data show that the influence of economic and social conditions on the growth of the real income of the population is significant.

The growth rate of the total income of the population was 116.9 percent in 2016, and in 2017-2019, this indicator increased steadily and reached 126.9 percent in 2019. In 2020, it decreased by 121.6%, which may be related to the impact of the pandemic. In 2021, this indicator reached 125.1 percent, but in 2022-2023, it decreased to 122 and 115 percent, respectively. These changes reflect the influence of economic policies and external factors.

The GDP growth rate in 2016 was 105.9 percent. From 2017 to 2019, the GDP growth rate was stable and reached 106.8% in 2019. 2020 saw an economic downturn amid the pandemic, with GDP growth falling by 101.6 percent. But in 2021, as a result of economic recovery, the growth rate reached 108 percent. In 2023, this indicator was 106.3 percent.

The above analysis shows that the population income and GDP growth rates have changed significantly depending on economic processes, socio-economic threats such as the global pandemic and the economic policy of the state. Although data from previous years show that there are processes of economic recovery after the impact of the pandemic, a downward trend has been observed in 2022-2023. These numbers confirm the need for economic stability and policy optimization.

Conclusions and suggestions

The research findings show that the relationship between digital infrastructure and economic growth is multifaceted and has positive effects. The significant growth of the information economy and e-commerce proves the importance of the development of digital infrastructure in increasing economic efficiency, creating new jobs and increasing incomes. The data in the table show that information technologies make a significant contribution to the expansion of economic activity, automation of business processes and development of innovative opportunities.

At the same time, it is necessary to take into account the negative aspects of the development of digital infrastructure, such as the possibility of increasing social and economic inequality. Cross-country differences, especially in developing countries, prevent the realization of the full effectiveness of digital infrastructure due to resource and infrastructure constraints.

In the future, it is important to apply a multi-factor approach, adapt economic policy to local conditions and ensure social justice in the process of developing digital infrastructure. Taking these factors into account will allow effective integration of digital technologies and sustainable economic growth. Therefore, it is important to conduct further scientific research in this direction.

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