



THE STUDY OF INFLUENCE OF ECONOMIC DIGITALISATION ON NATIONAL ECONOMY

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Abstract: The article presents results of a study on digitalization as a driving force of economic growth in the Republic of Uzbekistan. The degree of influence of the development of Information and Communication Technologies (ICT) on GDP per capita in Uzbekistan has been determined using data obtained from international organizations. The role of ICT- and digitalization-based innovative activities in the long-term economic growth of Uzbekistan has also been identified.

Key words: digitalization of economy, economic growth, economic development, ICT development index, GDP per capita, forecast, ERP system.

Introduction

The main objective of sustainable development of economy is to satisfy needs and aspirations of people while ensuring equal opportunities to all. In Uzbekistan, since 2022, reforms of more in-depth types have been implemented in accordance with the development strategy for 2022-2026, which aligns with the goals of sustainable development [2]. One of the goals set is to promote economic growth, full employment and fulfilling job for all. Sustainable economic growth is necessary for improving the quality of life and meet the needs of the population.

The aim of this study is to examine the relationship between economic growth and the ICT development index. Using a linear correlation model, it has been identified that the ICT development index has a positive and significant effect on the economic growth of Uzbekistan Republic.

Income categorization enables the examination of whether outcomes differ across income groups, thereby facilitating the development of more targeted policies and recommendations for each group. Changes in ICT development indicators in Uzbekistan provide valuable policy-relevant insights into the role of ICT in stimulating economic growth through the benefits of technological expansion.

Literature review

The ICT affects productivity through its direct and indirect linkages with the economy and can significantly improve economic performance indicators. ICT provides access to market information, facilitates the dissemination of information related to entrepreneurial activity, supports job-search processes, and promotes the spread of innovative ideas. The issue has attracted considerable attention from both domestic and foreign scholars and researchers. Many of them agree on the idea of the necessity of creating greater incentives to encourage investment in ICT sector.

Research methodology

The conducted research is aimed at providing a theoretical and methodological justification of the impact of ICT on GDP per capita. In this study, the dependent variable is GDP per capita at constant international prices, based on the data obtained from the International Monetary Fund. The indicators of ICT Development Index were selected as the independent variable. Furthermore, a forecast for the development of information technologies up to 2030 was developed within the context of the Uzbekistan. Based on correlation and regression

analysis, recommendations were formulated to accelerate digital transformation in order to promote economic growth.

Analysis and results

The digital economy can be defined as an economy characterized by the functioning of economic systems with increasing digital potential. The growth of digital potential enhances the significance of digital economic activities in comparison with the traditional economy.

Currently, income inequality in the global economy continues to rise, while the growing population requires the creation of a greater number of jobs. According to the International Labour Organization, as of August 1, 2024, approximately 400 million people of working age worldwide are unemployed, representing 5.26% of the world’s population.

One of the solutions to the problems of low labor productivity and insufficient income is to improve the quality of work and working conditions through production optimization. This requires the creation of equal employment opportunities for the entire population, as well as the enhancement of social protection and workplace safety.

Until 2030, ensuring sustainable economic growth remains a priority for most countries. This objective can be achieved by supporting GDP per capita growth in accordance with national conditions and, in particular, by maintaining annual GDP growth rates of no less than 7 percent in the least developed countries.

According to Resolution No. 841 of the Cabinet of Ministers of the Uzbekistan dated October 20, 2018, “On Measures for the Implementation of National Goals and Objectives in the Field of Sustainable Development for the Period up to 2030,” the country set the goal of significantly increasing GDP per capita by 2030. To achieve this objective, Uzbekistan has been actively implementing programs aimed at optimizing production through the digitalization of the economy. This process requires the use of digital technologies to create added value and improve production efficiency.

The rapid development of information and communication technologies (ICT) in recent decades has become one of the key drivers of economic growth. Innovations in ICT provide access to information, improve communication, and increase the efficiency of various forms of economic activity.

In our sample, GDP per capita indicators at constant international prices for the period 2010–2023 in the Uzbekistan were selected for analysis (Table 1).

Table 1.

Gross Domestic Product per capita and the ICT Development Index in the Uzbekistan¹

	GDP per capita (y) (thousand dollars)	ICT Development Index (x)
2010	2,13	2,8
2011	2,231	3,02
2012	2,356	3,2
2013	2,49	3,4
2014	2,611	4,77
2015	2,754	5,55
2016	2,871	4,96
2017	2,938	4,9
2018	3,061	5,62
2019	3,187	6,18
2020	3,192	6,57
2021	3,364	6,96
2022	3,467	6,2
2023	3,602	7,83

After determining the relationship between the ICT Development Index and GDP per capita in Uzbekistan, the following correlation-regression equation was derived:

$$Y=1.34+0.3x \quad (1)$$

It can be concluded that there is a strong positive linear relationship between the ICT Development Index and the country's GDP per capita (Figure 1).

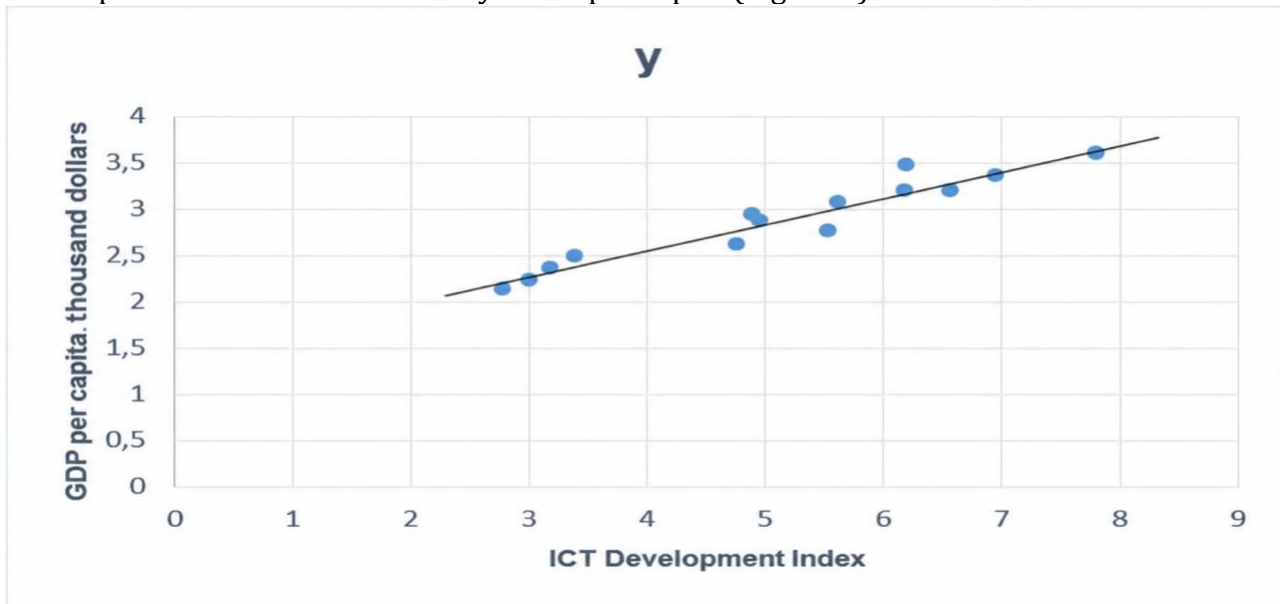


Figure 1. Regression model illustrating the relationship between GDP per capita (PPP) in the Uzbekistan and the ICT Development Index².

¹ Source: data from the International Monetary Fund.

² Source: compiled by the author based on econometric research.

Figure 1 demonstrates a close relationship between the ICT Development Index and GDP per capita in the Uzbekistan. The subsequent graph presents a forecast of the development of information and communication technologies up to 2030.

Based on these results, it can be concluded that there is a strong positive relationship between GDP per capita (PPP) and the ICT Development Index in Uzbekistan ($p < 0.001$, $R^2 = 0.9569$). Specifically, each one-unit increase in the ICT Development Index is associated with an increase of 0.3 USD in GDP per capita (PPP).

According to the data presented in Figure 2, it can also be observed that under this forecast scenario, starting from 2026, Uzbekistan may transition into the group of high-income countries, provided that active digital transformation continues.

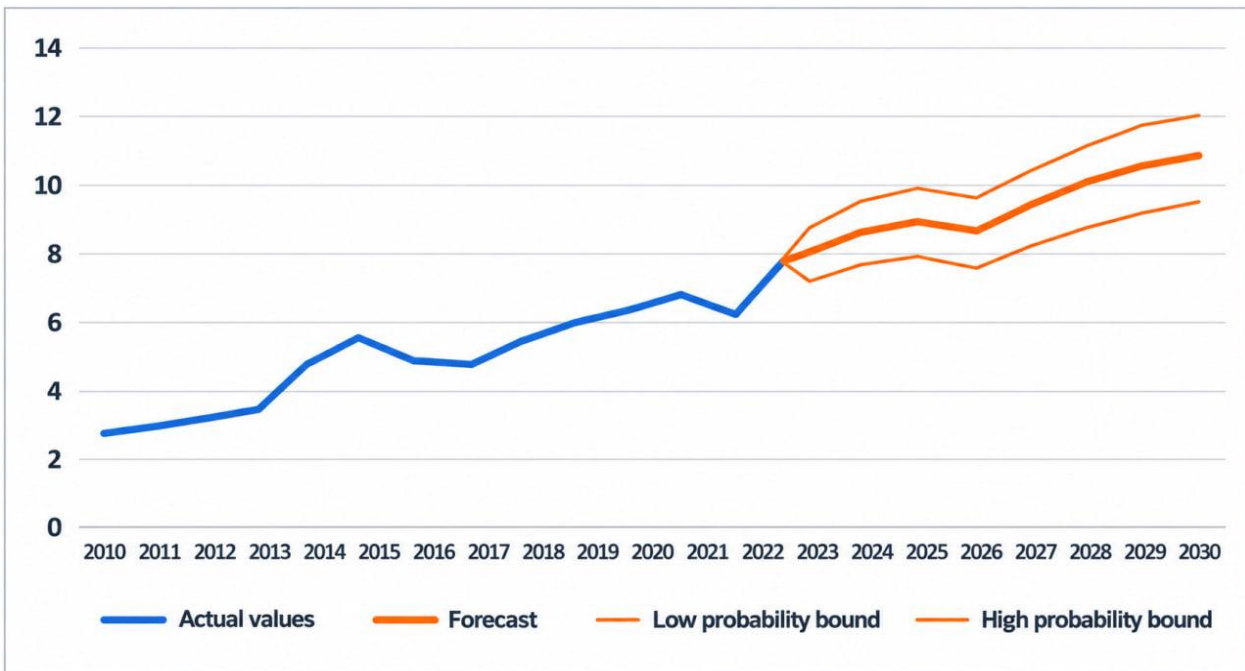


Figure 2. Forecast of the relationship between Uzbekistan’s GDP per capita and the ICT Development Index³.

The large volume of information poses a significant challenge for decision-makers, which lies in the accumulation and analysis of information flows, making it difficult to select optimal managerial decisions. A deeper examination of this aspect suggests the feasibility of implementing automated management systems at enterprises for each production unit.

The systematization of interrelationships based on forecasting and production planning leads to improved production efficiency. The use of an ERP system (Enterprise Resource Planning) contributes to the optimization of production management. It enables the automation of forecasting, design, and production planning processes within enterprises [4]. The functioning of such systems is based on the principle of generating corporate information for its subsequent transmission and processing.

Conclusions and recommendations

As a result of the analysis of the relationship between the ICT Development Index and GDP per capita in the context of the Uzbekistan, recommendations have been developed to accelerate digital transformation in order to enhance economic growth.

The first recommendation is the creation of a favorable ecosystem for the development of ICT in Uzbekistan. This includes the establishment of appropriate legislation, support for entrepreneurs, business initiatives, and innovative projects, as well as training and capacity-building programs aligned with digital technologies.

The second recommendation is to improve access to broadband internet and develop mobile network coverage, which will facilitate the wider dissemination of ICT in society and create new business opportunities, as well as contribute to the development of high-quality and affordable ICT infrastructure.

The third recommendation is that the active use of ICT in public administration and service delivery requires the implementation of digital solutions in government services. This will improve the quality of public services, simplify administrative processes, and enhance accessibility for the population.

The fourth recommendation is the development of the digital economy and e-commerce. Supporting e-business, creating a simple and convenient online trading environment, and attracting investment into the ICT sector will contribute to accelerating the country’s economic growth.

The fifth recommendation is the expansion of ERP system usage, which, being based on ICT, leads to the optimization of production management and improves the decision-making process.

The constructed models made it possible to assess the dependence of GDP per capita on ICT. The forecast of the ICT Development Index and GDP per capita in the Uzbekistan up to 2030 suggests that, potentially by 2026, the country may join the group of high-income countries, provided that necessary measures to accelerate digital transformation and ICT development are implemented. This opens broad prospects for economic growth and sustainable development of the country in the future

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