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DOI: https://doi.org/10.30525/978-9934-26-447-4-5

A MODEL OF THE IMPACT OF DIGITAL TRANSFORMATION ON THE COUNTRY'S ECONOMIC GROWTH

The transformation of the economy through digitalisation has become one of the biggest challenges of our time. Modern digital technologies are fundamentally changing all aspects of economic activity and social life. These technologies not only change the way we do business and interact socially but also transform approaches to education, communication, and entertainment, opening up new opportunities and creating new challenges. Studying the processes of digital transformation of the economy helps to identify key digital factors that contribute to economic development, as well as to understand their impact on labour productivity, innovation, business competitiveness, employment, the environment and other important aspects of social life. This, in turn, can be useful for developing policies and strategies aimed at supporting the digital transformation of the economy, as well as for making informed decisions about investments in digital technologies. One of the consequences of this may be an increase in public interest and awareness of the potential of digital technologies.

A successful digital transformation strategy requires a carefully planned development trajectory and implementation stages. A digital transformation trajectory is a set of clearly defined and justified goals, objectives, activities and resources required for its implementation.

To develop and justify the trajectory of digital transformation of the economy, several important tasks need to be addressed:

– assessing and forecasting the potential of digital transformation: identifying the areas of economic activity that have the greatest potential for the introduction of digital technologies.

– studying the dynamics of digital transformation: assessing progress and compliance with strategic goals, objectives and measures.

– assessing the effectiveness of digital transformation and its impact on economic growth.

To accomplish these tasks, it is necessary to create an information and analytical system that includes models and methods for monitoring and assessing the impact of digitalisation on economic development. The development of such models and methods is an important step in tracking, analysing, and understanding the impact of digitalisation on various sectors of the economy, both at the national and international levels. Modelling the trajectory of digital transformation and studying its impact on society and the economy will allow for a deeper understanding of these processes and the application of the knowledge gained to support sustainable economic development.

The information and analytical system for monitoring the assessment of the digital transformation trajectory may consist of the following components:

– a database of indicators of the digital transformation of the economy;

– analysis and modelling unit: analysis of trends, modelling the impact of digital transformation on economic growth, identification of key factors, forecasting, etc;

– data visualisation dashboards;

– integrated information system for monitoring the digital transformation of the economy.

The choice of a model for analysing the digitalisation of the economy depends on the approach to considering the digitalisation process and its impact on the economy and economic growth. For example, representing digitalisation as a single variable makes it difficult to express its many aspects in a single parameter. This is because digitalisation is a complex and multifaceted process that includes many interrelated elements and components. In addition, presenting digitalisation as an additional factor of production is artificial, as it affects all aspects of aggregate production. Also, such approaches do not allow the use of regression analysis to obtain the theoretical value of the digitalisation parameter (D_t), since it is impossible to obtain its input values. Digitalisation can also be viewed as a multifaceted process that contributes to increasing the efficiency of the use of production factors, which in turn affects economic growth. Expressing digitalisation factors through the total productivity parameter (A_t) allows us to take into account the impact of external factors on

economic growth. This is a more natural expression, as total productivity is a measure of efficiency that assesses how effectively a country uses capital and labour to produce goods and services.

However, overall productivity cannot depend on just one digital factor but also depends on a variety of other factors. Among them are groups of factors related to data infrastructure, institutional conditions, digital skills, digital culture, digital integration, digital literacy, digital innovation, and others. Therefore, it is important to conduct a detailed study to assess the impact of various aspects of digitalisation on economic growth.

The authors propose to consider the impact of digitalisation as a combined impact on production factors when both the model parameters (K_t, L_t) and the dynamic coefficient (A_t) are quasi-variables:

$$Y_t = A\left(D_t\right) K\left(D_t\right)^{\alpha} K\left(D_t\right)^{\beta}. \quad (1)$$

This approach allows us to estimate the impact of digitalisation on economic growth in various aspects, taking into account the impact on the returns to capital, labour and aggregate technology efficiency. Model (1) allows us to compare different economies and identify the specific effects of digitalisation in each of them.

In further research, it makes sense to develop methods and models for assessing the impact of digitalisation on various sectors of the economy, study the impact of digitalisation on employment, income, and social inequality, examine the role of the state in stimulating and regulating digital transformation, and conduct a comparative analysis of the experience of implementing digital transformation in different countries.

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