APPLICATION OF DIGITAL TECHNOLOGIES IN AGRICULTURAL PRODUCTION

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Abstract: The theoretical foundations of econometric model construction and forecasting mechanisms have been improved using econometric analysis and economic mathematical methods in interregional clustering of economic entities of Kashkadarya region. Effective use of the main production resources in the clustering of economic entities, or, more generally, methods of forecasting production through econometric modeling are shown.
Key words: Economic entities, interregional clustering, econometric modeling, digital technology, empirical model, econometric model, potential, relative model, forecast results, information system, endogenous variables, exogenous variables.

Relying on foreign experience is one of the main sources in the assessment of agricultural production parameters. When it comes to the use of digital technologies in the economic sectors of developed countries, its efficiency indicators can be taken as information, not only in agriculture, but also in various sectors of the economy. Because digital technologies simultaneously serve for the comprehensive development of all economic sectors and determine the state of general development. In this sense, when connecting the level of economic growth with digital technologies, in the research work of many world leading scientific research centers, research institutes, a certain sector of the economy was not limited to the analysis of the results related to this sector.[1] Developed countries have passed the stage of land conservation in the sphere of problems in the production of agricultural products and have stepped into the next stages of development. One of the main criteria for their eligibility for this status is the value of the digital evolution index. According to the known character, the digital evolution index is divided into 4 groups. Here, Group 1 is called Leaders, and the characteristic description of the group represents a high level of digital development and rapid growth. Singapore, Great Britain, New Zealand, Estonia, Hong Kong, Japan and Israel can be included in this group. Group 2 is called "slow growth" and is characterized by the fact that it has continued to grow dynamically for a long time, and now the rate of development

has slowed down. They are expected to lag behind digitization leaders due to their lack of dynamic innovation.[2] Digital transformation is taking place on a global scale, both in the economy and at the level of individual sectors. Because it can be seen that international corporations are introducing new technologies and their business models, digital transformation in order to maintain their leading position in their fields by creating technological barriers that their competitors cannot overcome[3]. In the context of the digital economy, a new approach to saving in agriculture, linking production costs with product quality and production efficiency is required. And it can be achieved in many ways by using new forms and methods of econometric and statistical accounting, new methodologies of digital technology[4]. In our opinion, the formation of agriculture based on digital technologies provides a solution to the problems. In addition, it is desirable to create legal conditions that ensure the complete economic and financial independence of farms and encourage the purposeful, rational and effective use of agricultural land resources that have been leased for a long time.[5] The use of digital technologies in production and management in agriculture, the creation of material and equipment supplies at the level of demand, arming them with modern digital technology, and deepening economic reforms in the agricultural sector, further increasing the sense of ownership of land and property, entrepreneurship, [6] business, new ownership and digital organization of economy-based production and development of optimal regulation mechanisms are of great importance.

The "Digital Uzbekistan-2030" strategy aims to create a digitized, modern complex system based on the requirements that must be fulfilled, taking into account the current global development mechanisms. What the minimum level of development for the production process of agricultural products could look like in the event that the actions listed on the priority directions of digital infrastructure development are implemented. The minimum state can be understood as general, that is, public use of the created opportunities. In this case, it is necessary to pay attention to the following aspect, that is, the availability of a space for rapid information acquisition and exchange. It naturally strengthens the advertising market in this area, the creation of qualitative and quantitative improvement due to the acquisition and exchange of experience, increased competition, the use of open information about the current and future status of certain factors affecting the production of products, and the formation and expansion of the knowledge base.[7] Increasing the productivity of land use in agriculture, reducing the cost of products and

increasing the export potential through the introduction of modern information and communication technologies - this remains one of the priorities directly related to the development of the production of agricultural products [8]. Management and organization of production based on digital technologies were studied by foreign scientists, and the results showed that the lack of use of digital technologies in both cases caused a decrease in the level of economic growth by 24 percent compared to competitors (Table 1).

Digitalization is 2 percent more effective than using a new management method, and in both cases, the application of one or another factor is proven to be effective. The greatest effect in this process is their joint application, which provides the manufacturer with a 26 percent economic increase[9]. Special attention is being paid to efficient use of land in the cultivation of agricultural products in our country. If we look at the example of Kashkadarya region, according to the technical and economic stages of agricultural development, the problems of saving labor and land are not the greatest, but it can be observed that more attention is being paid to other factors of effective use of available land resources[10]. For example, an intensive production process. A number of foreign scientists have pointed out that it is effective to organize the intensive production process using digital technologies [11]. Therefore, a solution can be found by introducing the "Smart" agriculture project in the region. An example of "smart" agricultural technologies is the IoT system. That is, IoT (Internet of Things - things on the Internet) is a system of automation of control processes with the help of various "smart devices", a large-scale information exchange system.[12] Agricultural applications of this technology include farming, farms, greenhouses, resource management, storage of agricultural products, transportation management, etc. In order to evaluate the minimum efficiency of the activities carried out for the development of digital technologies in the real sector of the economy in the process of production of agricultural products, we pay attention to the following. We divide the product production process into two, primary and secondary product production. One of the important aspects of digital transformation is not only to ensure the efficiency of production of raw materials and their export, but also to support the production of secondary products. For example, with the application of digital technologies, the volume of production of agricultural products has increased, labor productivity has been achieved. There is also a second side to this, that is, the issue of target orientation of freed labor resources arises. The demand for these labor resources in other economic sectors of the region is insufficient. In this case, it is

natural that the efficiency of the modern technologies used will be only one-sided. Therefore, it is evaluated as the simplest solution to the problem of production of secondary products and its export, and the intended goal is considered to have been achieved.[13] To create a favorable environment for the national market of digital technologies and to develop promising "digital" start-ups, to develop local technological and software digital tools used in the production of agricultural products, taking into account local capabilities, geographic, ecological, geological, biological characteristics of the region. release is necessary. The minimum stage of this is the determination of the optimal solution for the adequate assimilation of the use of modern technological and software digital tools used by foreign developed countries in the field of agriculture.

Our government is paying special attention to effective use of resources with the introduction of digital technologies in agriculture. In particular, the installation of automated devices in water reservoirs, regional and inter-district irrigation systems, district irrigation systems is set to increase from 269 to 400 units in the next two years. It is intended to increase the share of satellite navigation technologies in the management of agricultural machinery from 10% to 50% in 2021-2022.[1] In Kashkadarya region, the main implementation mechanism of digital infrastructure expansion measures is the organization of high-speed data transmission, reception and connection to optical fiber and wireless communication networks. One of the tasks for the first year is to provide information to the population about the services provided in agriculture, transport, construction, trade and other sectors in the region by using innovative technologies for the introduction of information systems and software products, as well as to create a mobile application that allows online ordering. The most important aspect of a mobile application is that it will be a tool to access the database in the most convenient way. In this, in particular, by providing the population, entrepreneurs, producers with other information on the type, size, price, quality of agricultural production, it is possible to determine the level of demand based on the register of requests for which information. If we conclude from the above, if the implementation of the most basic tasks determined by the fundamental reforms in the agriculture of our country is achieved, it will create legal conditions that will ensure the complete economic and financial independence of agriculture and encourage the purposeful, rational and effective use of agricultural land resources leased to farms for a long period of time. This indicator serves as a solid basis for bringing our

country to the ranks of agriculturally developed countries. In-depth research based on the conceptual and block principles of modeling the production process of agricultural products, although agriculture is the focus of scientific research, the importance of econometric modeling in scientific research aimed at solving current problems in the industry today, when the research results have a scientific basis with the help of qualitative models has reached the level of demand. is not sufficiently reflected. One of the main reasons for this is that modeling is included as a separate additional element in the research. In fact, it would be appropriate for models to represent the content of the research and ensure its comprehensibility.

Increasing the productivity of land use in agriculture, reducing the cost of products and increasing the export potential through the introduction of digital technologies is one of the priorities directly related to the development of agricultural production. To create a favorable environment for the national market of digital technologies and to develop promising "digital" start-ups, to develop local technological and software digital tools used in the production of agricultural products, taking into account local capabilities, geographic, ecological, geological, biological characteristics of the region. it is necessary to develop the output.

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