RAQAMLI IQTISODIYOT RIVOJLANISH KO‘RSATKICHLARINI STATISTIK TAHLIL QILISH

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Annotatsiya: *Mamlakatning raqamli iqtisodiyotining barqaror rivojlanish ko‘rsatkichlarini statistik tahlil qilish muhim ahamiyatga ega. Bugungi kunda raqamli iqtisodiyotni rivojlanishi dunyoning har bir sektorida aholining turmush darajasini oshirishga olib kelmoqda. Shu sababli O‘zbekistonda raqamli texnologiyalar rivojlanishining statistik tahlil jadvallari va diagrammalari shaklida ko‘rib chiqilmoqda. Bundan tashqari, suniy intelektdan foydalanishning asosiy yo‘nalishlari va tamoyillarini va ushbu sektorni yaqin va uzoq muddatda kompleks shakllantirish shartlarini o‘rganish, statistik tahlil qilish uchun raqamli iqtisodiyotni rivojlanishini ko‘rsatdi.*

Kalit so‘zlar: *raqamli iqtisodiyot, o‘sish sur’atlari, suniy intellect, statistik tahlil, AKT, elektron tijorat, axborot va kommunikatsiya.*

СТАТИСТИЧЕСКИЙ АНАЛИЗ ПОКАЗАТЕЛЕЙ РАЗВИТИЯ ЦИФРОВОЙ ЭКОНОМИКИ

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Аннотация. *Важен статистический анализ показателей устойчивого развития цифровой экономики страны. Сегодня развитие цифровой экономики ведет к повышению уровня жизни населения в каждом секторе мира. В связи с этим развитие цифровых технологий в Узбекистане рассматривается в виде таблиц и диаграмм статистического анализа. Кроме того, упоминается изучение основных направлений и принципов использования искусственного интеллекта, а также условий комплексного формирования этого сектора в ближайшей и долгосрочной перспективе, применение показателей развития цифровой экономики для статистического анализа.*

Ключевые слова: *цифровая экономика, темпы роста, искусственный интеллект, статистический анализ, ИКТ, электронная коммерция, информация и связь.*

STATISTICAL ANALYSIS OF INDICATORS OF DIGITAL ECONOMY DEVELOPMENT

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Abstract: *The statistical analysis of the country's indicators of sustainable development of the digital economy is important. Today, the development of the digital economy is leading to a level of improvement in the living standards of the population in every sector of the world. In this regard, the development of digital technologies in Uzbekistan is considered in the form of statistical analysis tables and diagrams. In addition, the study of the main directions and principles of the use of artificial intelligence, as well as the conditions for the complex formation of this sector in the near and long term, the application of indicators of digital economy development for statistical analysis referred to.*

Keywords: *digital economy, growth rates, artificial intelligence, statistical analysis, ICT, e-commerce, information and communication.*

Introduction. It should be noted that when digitalizing regional economies, it is important to develop and improve legal, economic, organizational mechanisms, technological support and human capital. Along with the study of the experience of developed countries in the development of the digital economy, the need for the state to pursue a regional policy, direct and indirect participation in the digitization of regional economies is justified. Relying on foreign experience in

this area, the research shows how to use it in our country. Accordingly, it is expedient to classify the economy of the regions into three methods, taking into account the development, coordination, implementation and control of digitalization projects in society. These are: the method of public administration, the method of cooperation between government and non-governmental organizations, and the method of free competition management.

Trends in the development of the digital economy in the regions of Uzbekistan and regional disparities in the field of ICT were assessed. In addition, the researcher assessed the activities of local authorities in the development of the regional digital economy in the country and analyzed their powers and responsibilities [1].

The digital economy has an "enhancing" impact on sustainable economic development. Maintaining appropriate economic growth rates is also an inevitable requirement of high quality economic and social development. So, can the development of the digital economy contribute to urban economic growth? What are the mechanisms? How will it affect economic growth? Does the development of the digital economy have a heterogeneous impact on urban economic growth? Engaged in digital development. Are the spatial characteristics of the economy and the legitimacies for urban economic growth? The answers to these questions are based on creating a comprehensive evaluation system suitable for the digital economy. Research on the digital economy is still in its infancy and the system of conceptual definition, statistical classification, calculation and complex evaluation indices related to it is not sufficiently mature[2]. Therefore, there is relatively little theoretical research and mechanism testing on digital economic development and urban economic growth.

In this article, the legal framework of the digital economy in Uzbekistan is studied and a comparative analysis of the experience of foreign countries is carried out. «On measures to develop the digital economy in the Republic of Uzbekistan»[1], «On electronic digital signature»[2] in the field of development and digitization of information and communication technologies of the Republic of Uzbekistan and the Law on "On electronic document management" were analyzed and their shortcomings were analyzed [3].

Literature review. The study of the development and factors influencing the development of the digital economy is one of the most pressing issues today, and a number of researchers have studied the development of the digital economy in their research. Particularly, theoretical and methodological bases of the development of digital economy were studied as well as developed methodological concepts if development of digital economy in the works of American and European scientists such as Brynjolfsson, E., A. McAfee [4], Thomas L. Mesenbourg [5].

The methodological and conceptual foundations of the digital economy have also been studied by CIS scholars. In particular, Norets has studied the prospects for the development of the digital economy and the importance of innovation clusters in the digital economy [6].

Yevtyanova studied the ecological and political role of the digital economy in the country's economy [7]. Gukasova studied the institutional basis of the digital transformation of the digital economy regions [8].

A full range of research by local scientists is dedicated to solving the problems of increasing the competitiveness of the national economy of the Republic of Uzbekistan in the context of the digital economy, improving the theoretical and practical aspects of the digital economy, as well as the introduction of digital technologies in public administration.

Over the past four years, a revolution in the development of information technology has been made in Uzbekistan, which has contributed to the expansion of digitalization processes in many areas of the economy and the growth of its share, which is commonly called digital. S.S. Gulyamov, A.T.Shermukhamedov [9],

One of the main technologies on which the digital economy relies is the Internet of Things (IoT - Internet of Things). That is, many household devices are connected to power grids, but they are secondary.R.H. Ayupov, M.Yu Jumaniyazova [13],

The research of local scientists mentioned above has made a significant contribution to the study of the development of the digital economy. However, they do not adequately address the issues of digitization of economies, in particular, the lack of research on the activities of local authorities, which requires research in this area and determines the relevance of the research topic.

Research methodology. Widely used methods of studying existing scientific research on management and regulation of natural monopolies, comparative comparisonof tariff and price formation, study of statistical data and economic comparison and analysis, logical thinking, scientific abstraction, data grouping,

analysis and synthesis, induction and deduction.

Results. Use of ICT in economics. If we look at the analysis of statistical data on the use of ICT in the regions of Uzbekistan, we have witnessed a significant development of «e-government» as a result of the development of the digital economy and automated systems, simultaneously with the increase in ICT use[7].

Table 1.

Number of enterprises and organizations operating in the field of «Information and Communication» by type of economic activity (As of January 1, in units,stat.uz)

	2016	2017	2018	2019	2020
Publishing books	84	87	114	122	145
Release other software	122	109	201	206	248
Production of movies, television programs, phonograms and music recordings	115	161	184	205	227
Activities for the publication of phonograms and musical recordings	125	100	88	71	76
Provision of wired communication services	845	640	547	542	457
Providing wireless services	1 025	1 255	1 020	1,065	1 127
Provision of other telecommunication services	368	245	538	606	805
Activities in the field of computer programming	370	379	387	561	710
Computer technology consulting services	169	175	249	272	309
Computer equipment management activities	66	93	89	122	149
Other activities in the field of information technology and computer systems	1 020	972	1 018	1,051	1 217
Data placement and processing services,	92	107	224	317	396
Web portals	3	-	17	49	70
Information and communication - total	**4404**	**4323**	**4676**	**5189**	**5936**

Source: *Author's work based on data of State Committee of the Republic of Uzbekistan on Statistics.*

Analyzing the above Table 1 and Diagram 1, we can see that over the years, the number of enterprises and organizations operating in the field of «Information and Communication» by type of economic activity has increased, and the statistics for the final year of 2020 we can see that the gut is at a maximum level. As a result of growing demand for the digital economy, the number of enterprises and organizations operating in the field of «Information and Communication» is growing. It is obvious that the country is going through a period of economic and technological development. The increase in the number of economies and automated systems leads to transparency in every area as a result of time, financial and paperwork for the population, the organization and the state. In addition to the above statistical analysis, we will consider other factors as the basis of our opinions. Open data of the State Statistics Committee of the Republic of Uzbekistan Let's consider the analysis of statistical data from the Department of Digital Economy[11].

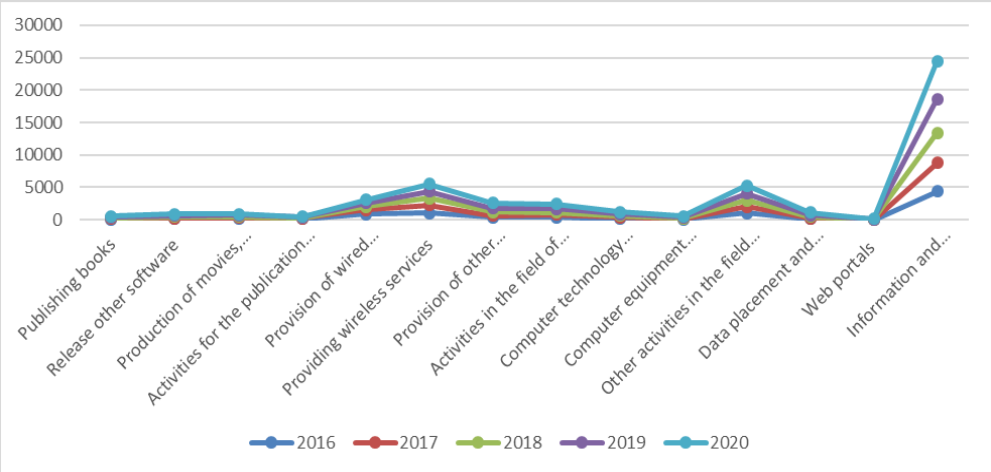

Figure 2. Number of enterprises and organizations operating in the field of «Information and Communication» by type of economic activity (As of January 1, in units,stat.uz)

Source: *Author's work based on data of State Committee of the Republic of Uzbekistan on Statistics*

Table 2.

Information on the availability of personal computers (except servers) in enterprises and organizations (end of year, pcs)

	2015	2016	2017	2018	2019
Republic of Uzbekistan	**734 569**	**800 767**	**853 825**	**929 900**	**1 012 726**
The Republic of Karakalpakstan	32 266	36 322	41 125	45 483	50 945
regions:					
Andijon	40 545	43 211	46 409	48 895	54 530
Bukhara	36 642	39 506	41 003	45 294	51 280
Jizzax	21 682	23 457	25 854	26 976	28 867
Qashqadaryo	48 070	55 820	59 141	64 395	67 670
Navoi	30 709	33 951	35 646	40 031	44 562
Namangan	35 504	39 880	42 643	47 299	52 800
Samarkand	58 169	63 415	69 606	79 084	87 599
Surxondaryo	34 623	35 976	38 829	41 879	40 781
Sirdaryo	17 331	18 737	20 254	21 660	23 669
Tashkent	53 402	57 984	60 492	68 944	78 495
Fergana	49 112	52 846	55 249	62 401	66 245
Khorezm	30 640	33 601	36 675	40 212	45 094
Tashkent	245 874	266 061	280 899	297 347	320 189

Source: *Author's work based on data of State Committee of the Republic of Uzbekistan on Statistics*

It is clear that the development of the digital economy and the automation of the economy, of course, depends on the integral implementation of technical software development. If we analyze the data of the Department of Digital Economy on the availability of personal computers (except servers) in enterprises and organizations from the statistics of recent years, (Table 2) we can see that the growth rate of the Republic by regions by years is increasing. At the same time, we can conclude that the development of the digital economy in our country is in the interests of the population and organizations, and all this is transparent and beneficial for the state. Although we can generalize on the scale of the republic (diagram 2), we see a clear increase in our diagram.

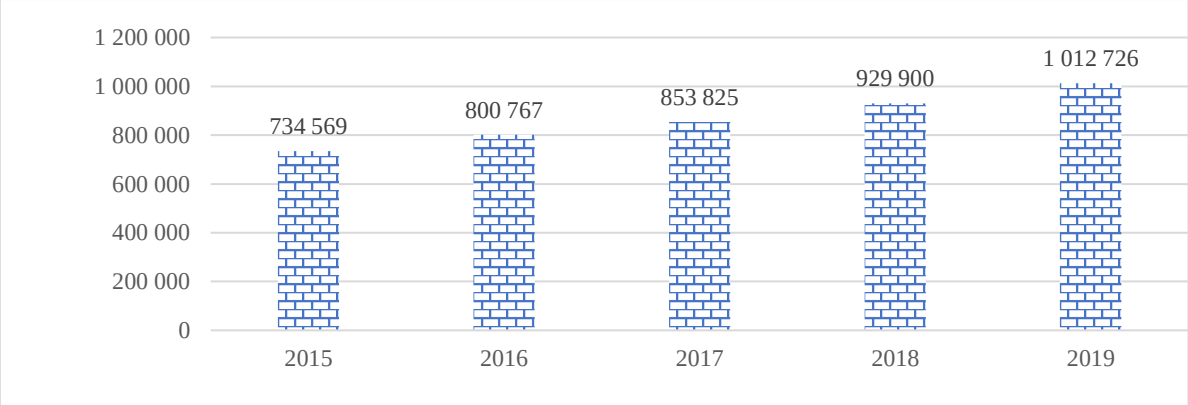

Figure 3. Information about the availability of personal computers (except servers) in enterprises and organizations (end of year, pcs)

Source: *Author's work based on data of State Committee of the Republic of Uzbekistan on Statistics.*

In addition, a rating method was developed to assess the state of the digital economy in the regions of the Republic of Uzbekistan, which includes indicators on the activity of digitalization entities in the regions (8 indicators) and the conditions of digitization in the region (18 indicators). developed.

Conclusion. Within the framework of this chapter, the researcher has developed proposals for the development of the digital economy in the regions of Uzbekistan at the following stages:

1) ensuring the participation of stakeholders;

2) development of local factors;

3) organization of research activities;

4) attraction of financial resources;

5) management of digitization projects;

6) to promote the establishment of close ties between the participants of the digital economy.

Currently, the development of the digital economy of Uzbekistan contributes to the economic growth of the city. This article selects instrumental variables for correlation. The results of the correlation are consistent, in line with the rapid development of the digital economy in various regions in recent years. Therefore, in the period of sustainable economic development, it is necessary to expand and strengthen the scale of the city's digital economy so that it can continuously give a new impetus to the city's economic growth. In addition, digital economic development in Uzbekistan is heterogeneous in terms of urban economic growth. According to the regional analysis, the scope and importance of promoting the development of the digital economy in different regions are inconsistent, and the order of the incentive impact: city, province, district and sector. Therefore, in developing the digital economy, Uzbekistan must take full account of the differences between cities in the development of the Internet, digital literacy and industrial efficiency, identify gaps in the development of the digital economy and strive to reduce long-distance disparities. digital division.

Here, Stakeholders:

a) local government officials responsible for the development of the digital economy;

b) representatives of the private sector operating in the field of ICT, ie entrepreneurs, startups and investors;

d) users of the digital economy, ie consumers (population).

At the same time, it was argued that local public authorities should develop local factors to develop the digital economy in the regions.

In particular, material factors (ICT infrastructure, logistics, tourist facilities, etc.), intangible factors (human resources, cultural facilities, libraries, etc.) and the regulatory framework. Besides, The establishment of research and development institutions in the field of digital economy in the regions, the improvement of the intellectual property system, technology transfer and commercialization is one of the most important tasks facing local governments.

The application of artificial intelligence and its application technologies in the areas of economic development and statistical analysis of development indicators, given in the Resolution of the President of the Republic of Uzbekistan No. PP-4996 dated 17.02.2021, also provides effective indicators. Statistical analysis shows that the use of information and communication technologies in all areas will increase productivity, improve the living standards of the population, the development of enterprises and organizations, resulting in the development of the state. We all know that today the population and businesses are becoming more and more comfortable with the digital economy and the use of automated systems. If we look at developed countries, the digital economy and e-government have become an integral part of the population. This is increasing the rate of further development of states. The use of artificial intelligence in such systems is the future of these industries.

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