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SOCIO-ECONOMIC FACTORS OF UZBEKISTAN IN THE CONDITIONS OF PATHOLOGICAL CHALLENGES AND DIGITALIZATION

Formulation of the problem. Formulation of the problem. In the context of an increased level of uncertainty and variability of the organizational and economic environment, the significance and influence of various kinds of pathologies of a social nature (for example, the COVID-19 pandemic, all kinds of color revolutions, etc.), which have significant negative consequences for the functioning of society and its most important structures, has increased. *The purpose of the article* is to characterize the set of socio-economic factors in Uzbekistan in the context of pathological challenges and digitalization. *The object of the research* is the socio-economic processes of the development of the economy of Uzbekistan in the context of pathological challenges and digitalization. *The methods used* in the research are logical, comparative, analytical, scientific and methodological. *The research hypothesis* is based on the assumption that there is a dependence of the cost of restoring the ecological balance on the volume of national non-financial production assets. *Presentation of the main material.* The use of the latest achievements of scientific and technological progress, such as comprehensive digitalization and modeling of the most important factors and trends of social development, can resist the impact of modern negative challenges. The article analyzes and simulates some of the most important parameters of the functioning of the Uzbek economy, the results of which can be used in developing a strategy of actions in priority areas of development of the Republic of Uzbekistan. *The originality and practical significance of the study* lies in the fact that the author substantiates the relationship between the diseases of a modern person and unfavorable environmental conditions arising from his own fault. *Conclusions of the study.* Thus, as a result of the studies, it became obvious that the factors of social development and the socio-economic trends arising as a result of their action can be divided into two large groups: the first should include factors and trends of a negative nature associated with the action of all kinds of social pathologies; the second group, on the contrary, includes positive factors and trends, primarily associated with the progressive influence of scientific and technological progress, including with such an important modern direction as the all-round digitalization of society.

Key words:

pathological challenges, digitalization of society, modeling of socio-economic processes, factors, trends.

СОЦІАЛЬНО-ЕКОНОМІЧНІ ФАКТОРИ УЗБЕКИСТАНУ В УМОВАХ ПАТОЛОГІЧНИХ ВИКЛИКІВ І ЦИФРОВІЗАЦІЇ

Постановка проблеми. В умовах збільшеного рівня невизначеності і мінливості організаційно-економічного середовища посилилося значення і вплив різного роду патологій громадського характеру (наприклад, пандемії COVID-19, всіляких кольорових революцій і т.п.), що мають суттєві негативні наслідки для функціонування соціуму і його найважливіших структур. *Мета статті* – охарактеризувати набір соціально-економічних чинників Узбекистану в умовах патологічних викликів і цифровізації. *Об'єкт дослідження* – соціально-економічні процеси розвитку економіки Узбекистану

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в умовах патологічних викликів і цифровізації. *Методи, використані в дослідженні – логичких, порівняльний, аналітичний, науково-методологічний. Гіпотеза дослідження* полягає в припущенні наявності залежності розміру витрат на відновлення екологічного балансу від обсягу національних нефінансових виробничих активів. *Виклад основного матеріалу.* Протистояти впливу сучасних негативних викликів може використання новітніх досягнень НТП, таких, як всебічна цифровізація і моделювання найважливіших факторів і тенденцій суспільного розвитку. У статті здійснюється аналіз та моделювання деяких найважливіших параметрів функціонування узбецької економіки, результати якого можуть бути використані при розробці стратегії дій щодо пріоритетних напрямів розвитку Республіки Узбекистан. *Оригінальність і практичне значення дослідження* полягає в тому, що автор обґрунтовує взаємозв'язок захворювань сучасної людини з несприятливими умовами навколишнього середовища, що виникають з його ж вини. *Висновки дослідження.* Таким чином, в результаті проведених досліджень стало очевидним, що фактори суспільного розвитку та виникають внаслідок їх дії соціально-економічні тенденції можна розбити на дві великі групи: до першої слід віднести чинники і тенденції негативного характеру, пов'язані з дією всіляких громадських патологій; до другої групи, навпаки, можна віднести позитивні фактори і тенденції, перш за все пов'язані з прогресивним впливом НТП, в тому числі, з таким важливим сучасним напрямком, як всебічна цифровизация суспільства.

Ключові слова:
патологічні виклики, цифровизация суспільства, моделювання соціально-економічних процесів, фактори, тенденції.

СОЦИАЛЬНО-ЭКОНОМИЧЕСКИЕ ФАКТОРЫ УЗБЕКИСТАНА В УСЛОВИЯХ ПАТОЛОГИЧЕСКИХ ВЫЗОВОВ И ЦИФРОВИЗАЦИИ

Постановка проблемы. В условиях возросшего уровня неопределенности и изменчивости организационно-экономической среды усилилось значение и влияние различного рода патологий общественного характера (например, пандемии COVID-19, всевозможных цветных революций и т.п.), имеющих существенные негативные последствия для функционирования социума и его важнейших структур. *Цель статьи* – охарактеризовать набор социально-экономических факторов Узбекистана в условиях патологических вызовов и цифровизации. *Объект исследования* – социально-экономическе процессы развития экономики Узбекистана в условиях патологических вызовов и цифровизации. *Методы, использованные в исследовании* – логичекий, сравнительный, аналитический, научно-методологический. *Гипотеза исследования* состоит в предположении наличия зависимости размера затрат на востановление экологического баланса от объема национальных нефинансовых производственных активов. *Изложение основного материала.* Противостоять воздействию современных негативных вызовов может использование новейших достижений НТП, таких, как всесторонняя цифровизация и моделирование важнейших факторов и тенденций общественного развития. В статье осуществляется анализ и моделирование некоторых важнейших параметров функционирования узбекской экономики, результаты которого могут быть использованы при разработке стратегии действий по приоритетным направлениям развития Республики Узбекистан. *Оригинальность и практическое значение исследования* состоит в том, что автор обосновывает взаимосвязь заболеваний современного человека с неблагоприятными условиями окружающей среды, возникающими по его же вине. *Выводы исследования.* Таким образом, в результате проведенных исследований стало очевидным, что факторы общественного развития и возникающие вследствие их действия социально-экономические тенденции можно разбить на две большие группы: к первой следует отнести факторы и тенденции негативного характера, связанные с действием всевозможных общественных патологий; ко второй группе, наоборот, можно отнести позитивные факторы и тенденции, прежде всего связанные с прогрессивным влиянием НТП, в том числе, с таким важным современным направлением, как всемерная цифровизация общества.

Ключевые слова:
патологические вызовы, цифровизация общества, моделирование социально-экономических процессов, факторы, тенденции.

Problem statement. Recently, the level of uncertainty and variability of the organizational, economic and ecological environment has significantly increased. This became especially evident in the context of the COVID-19 pandemic, when even in developed countries the level of GDP decreased by 7-8%, social tension in society increased, and at the same time the likelihood of the emergence of the so-called color revolutions with all the ensuing negative consequences

increased. All these negatives, often called the challenges of the modern world, can be summarized as pathologies of a socio-economic and environmental nature (this term is derived from the Greek "pathos", which means disease). The impact of the COVID-19 pandemic on the functioning of the socio-economic system of almost all countries of the world has personally shown how serious the influence of pathogenic factors on the system of social reproduction can be, has shown how seriously the functioning of the so-called normal socio-economic and ecological system can change until the emergence of social patterns of the pathological type.

However, along with negative factors, progressive factors, especially those associated with advanced technologies and other areas of modern scientific and technological progress, have a great influence on the functioning of social systems. Thus, the balanced functioning of society largely depends on the ratio (one might even say - on the opposition) of these two groups of factors - the pathological challenges of the modern world and the factors associated with scientific and technological progress. In this regard, it should be added that the most important areas of modern scientific and technological progress include the processes of digitalization of society at different levels of the management hierarchy, therefore, the second most important research aspect in this work is currently the factors and prospects of digitalization of the reproductive system in different states of the post-Soviet period.

Analysis of recent research and publications. Taking into account that in recent decades at different levels of the social hierarchy all kinds of crises have become more frequent, which are very painfully experienced by the population, it seems that the development of various kinds of patho sciences is very relevant. And here we are talking not only about the well-known traditional sciences of a medico-biological nature (pathoanatomy, pathopsychology, pathophysiology, etc.), but also about new scientific and educational disciplines of a public profile. Since the 90s of the twentieth century, the author in a number of scientific works has already expressed the idea of the advisability of the emergence and development of this kind of pathology [1, p. 14], which was proposed to be called pathoeconomics [2, p. 136], pathoecology [3, p. .94], etc.

The purpose of the article is the analysis and modeling of economic processes in the Re-

public of Uzbekistan in the context of new pathological challenges and digitalization processes.

Presentation of the main material. A distinctive feature of modern society is its constant modernization and diversification, and the ongoing changes are of an ambivalent nature: some improve, others decline. Therefore, there is a need to analyze the socio-economic aspects of society's life, one of the tools of which is modeling various aspects of social development, such as environmental, demographic, industrial, etc. five priority directions of development of the Republic of Uzbekistan in 2017-2021, which set the task of "reducing the role of the state in regulating the socio-economic development of the country, decentralization and democratization of the public administration system" [4].

The relevance of modeling the socio-economic aspects of the life of the population is associated with the transitional processes of economic transformation in the context of globalization, when an incorrectly chosen strategic decision threatens the development of society, the prevention of which requires the use of an econometric modeling tool. It is especially important to model the processes of social development in a crisis, when the level of uncertainty of the socio-economic environment increases, the degree of its variability increases, and the importance of various pathoeconomic factors also increases [2, p. 247]. Econometric modeling of socio-economic systems is a controversial process. However, its rational use is one of the factors in increasing the competitiveness of economic systems, taking into account the possibilities of modern information technologies for making decisions for the future.

The use of models in the study of socio-economic aspects and factors is aimed at performing a number of functions: to deepen knowledge of the operating systems; identify the way to improve them; make a comparative analysis of a real object and its mathematical model, which will determine the features and qualitative characteristics of this object. Heuristic modeling functions are to identify negative trends and to choose positive ways to solve problems.

Simulation has its own goals: to find out the state of the problem at the moment; identify "critical" moments of contradictions; identify development trends and factors that correct the undesirable development of the modeling object; to search for the best options for resolving issues to promote the revitalization of government and public organizations The fact that the model cannot reflect the whole picture of the process, but reflects only its individual essential aspects, is an integral prop-

erty of the model. On the one hand, this property of the method makes it difficult to analyze the process as a whole, taking into account all the various interrelationships of factors. At the same time, the effectiveness of the model depends not only on how well the process is theoretically studied, but also on how successfully the modeling techniques can be applied in each specific case.

On the other hand, the property under consideration provides a valuable opportunity to identify and simulate the most significant conditions and factors in the model and, on this basis, to study their action and interrelationships with other essential factors and the process as a whole. Here lies the possibilities for using the modeling method for prognostic purposes: based on knowledge about the functioning of the most important factors that determine the dynamics of the process, it is possible to predict its further development. The use of the strengths of the modeling method and knowledge of its weaknesses, the combination of this method with others, quantitative analysis with a qualitative one gives the basis in the process of its application to obtain reliable results.

When modeling social processes, a variety of goals are set and a variety of tasks are solved. With the help of modeling, the optimal sizes are determined, the behavior of the system is predicted, the factors are analyzed, as a result of which a different standard of living is justified [5]. The standard of living of the population is one of the most important indicators of the economic development of any country. For a comprehensive analysis of the standard of living of the population, the following indicators are used: the level of per capita income of the population, the degree of differentiation of the population by income and consumption, the size of the subsistence minimum, the level of poverty of the population, as well as the standard of living, that is, the minimum volume of consumer goods, which is guaranteed by the state.

The standard of living is characterized by different indicators, the possibilities of their implementation are calculated during modeling, one of which is the GDP per capita indicator, the dynamics and trend of which is shown in Figure 1.
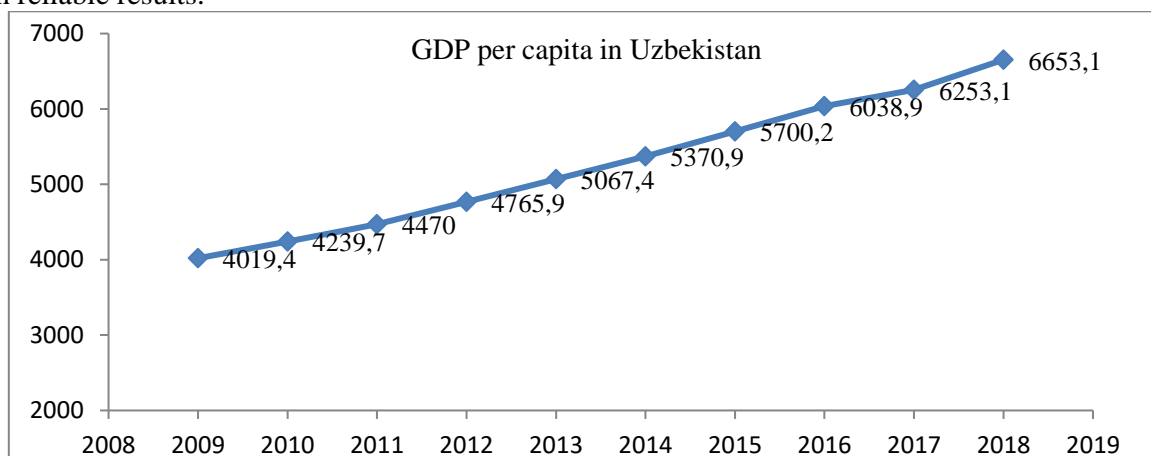

Figure 1 – Dynamics of the GDP per capita indicator in Uzbekistan for the period from 2009 to 2018
Source: developed by the authors based on [6]

The indicators of the standard of living of the population, in turn, are studied using a whole system of techniques and methods, in particular, methods of statistical and econometric modeling. The issues of regulation and management of socio-economic processes, including the standard of living of the population, imply the construction and development of econometric models. The particular difficulty of modeling socio-economic processes is that it requires theoretical comprehension in accordance with the existing social reality.

The relevance of modeling socio-economic processes in a market economy is primarily due to the fact that the modeling process is an integral part of forecasting, which determines the effectiveness of socio-economic management. -mathematical methods, a special place is occupied by econometric models, which make it possible to identify and measure quantitative relationships between the studied indicators and the factors influencing them.

Econometric models in the study of the standard of living of the population are used depending on the goals and directions of the

analysis, as well as on the availability of information. In this regard, a model of the dependence of GDP per capita in Uzbekistan on inflation and unemployment rates for the period from 2009 to 2019 was built and interpreted.

Based on the analysis of the matrix of pair correlation coefficients, the absence of the phenomenon of multicollinearity of factors was revealed, in connection with which all of the above factors were included in the model. As a result of multiple correlation-regression analysis, the following model with a full set of factors was obtained (1):

$$Y = 25180,8 - 2456,83X_1 - 103,01X_2 \ (1)$$

where Y - GDP per capita, million soums;
X_1 – unemployment rate, %
X_2 – inflation rate, %

In mathematical modeling, it is necessary to assess the adequacy of the constructed model, that is, the correspondence of the model to the real process, while not just its adequacy, but its compliance with those properties that are considered essential for the study. Checking the adequacy of econometric models is a serious problem, since without such a check, the application of modeling results in management decisions may be impossible.

The analysis of the constructed model revealed the following: the factors included in the model contribute to a decrease in the standard of living. In particular, an increase in the unemployment rate by 1% leads to a decrease in GDP per capita by 2,456.83 million soums, respectively, an increase in the inflation rate by 1% reduces the value of this indicator by 103.01 million soums, i.e. there is an inverse relationship between the ratio of GDP per capita to unemployment and inflation. At the same time, a comparative analysis of the influence of factors on the volume of GDP per capita indicates a stronger influence on it of the unemployment rate than the inflation rate, which can be a guideline for managing the process of socio-economic development of society in the future.

The multiple correlation coefficient equal to 0.8587 shows that the relationship between the level of GDP per capita and the factors included in the model is strong, and this confirms the correctness of the hypothesis about the relationship between the indicators included in the model. The multiple coefficient of determination, equal to 0.7377, shows that the change in the level of GDP per capita by 73.77% depends on the variation of the factors included in the model, which indicates the adequacy of the model. The evaluation of the significance of the regression equation as a whole was carried out using the Fisher's F-criterion, and since the condition Fcalc> Ftabl is satisfied, then with a probability of 95% a hypothesis is accepted about the statistical significance of the econometric model and the expediency of its use for decision-making or forecasting for the future.

Conclusions and prospects for further research. Thus, the approach proposed in the article for constructing econometric models on the analysis of socio-economic factors and aspects of the development of the Republic of Uzbekistan is currently very promising and can help to obtain useful information that will be in demand and used in the process of making effective management decisions. As a result of the research, it became obvious that the factors of social development and the socio-economic tendencies arising as a result of their action can, with a sufficient degree of convention, be divided into two large groups. The first group should include negative factors and trends associated with the action of all kinds of pathologies (economic, social, environmental, territorial, legal, etc.) that negatively affect the functioning of the reproductive system (for example, the impact on society of the COVID-19 pandemic, to the so-called modern challenges of a negative nature, etc.). The second group, on the contrary, includes positive factors and trends, primarily associated with the progressive influence of scientific and technological progress and effective organizational and managerial shifts and realities.

The confrontation between these two groups of factors and trends significantly affects the level of equilibrium and stability of social systems, and also determines the dynamics and prospects for the development of society in the foreseeable future. The state of the social structure will largely depend on which of these two groups of factors and tendencies prevails: whether it will degrade or, conversely, progress and develop. Obviously, the dynamics of the level and rates of GDP growth, the level and quality of life, inflation and many other parameters and indicators with which the daily life of the population as a whole and each of us is connected, largely depends on this.

Currently, many pessimistic specialists are inclined to implement a predominantly negative scenario of social development. This is under-

standable, the depletion of the natural resource base, the deterioration of the quality of the ecological environment, the growth of the world's population, not to mention the growth of the enormous nuclear potential - all this is unlikely to give power to the strengthening of optimistic sentiments. However, in our opinion, one should not despair and one should believe in the best. And the point here is not only the rational nature of mankind and the victory of good over evil, but above all in the hope for great opportunities for scientific and technological progress, and especially for technological and managerial progress.

Currently, the digitalization of society at all levels of the organizational and managerial hierarchy is the most important area of scientific and technological progress, in which the most advanced technologies, methods and forms of organizational and managerial thought are implemented. In this regard, it can be hoped that the implementation of positive processes associated with the introduction of advanced directions and methods of scientific and technological progress, including in the field of digitalization of society, will be able to smooth out the consequences of many negative pathological challenges in the modern world, as a result of which progressive trends in social development ultimately prevail over negative factors and trends.

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