

Research and Analysis of Modern Methods of Estimation of Influence of Social and Economic System on Transformation Processes

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Abstract: *The state is an integral and integrating structure of modern society, which concentrates the highest powers, concentrates management mechanisms and carries out activities aimed at regulating social relations. The main task of the state is to ensure the effective functioning of power in the society, as well as the optimal management of social processes, the definition of promising development strategies, the solution of current pressing problems that arise in front of people, taking into account their interests, on the one hand, and available potential resources, on the other. In applied sociological research, mathematical and statistical methods, such as correlation theory, cybernetic modeling, game theory, etc., are mainly used to analyze the actions of the laws of functioning and the development of social systems in the implementation of the labor process. However, these methods only perform the functions of the toolkit in the analysis. Reliable knowledge in the scientific or practical field is always preceded by rational comprehension and evaluation of the factual material delivered by observation.*

Keywords: analysis, evaluation, socio-economic systems potential, methods, transformation, processes, state.

The head of state repeatedly noted the priority of schools with a natural-mathematical bias and computer science. Today, 20 intellectual schools have been created in Kazakhstan. Similar kinds of schools open all over the world. It is generally known that the 21st century will be a century of competition of ideas and new technologies. It is these students in the future will determine the level of development of the country and its economic success. For example, in China in all provinces there are very strong specialized schools. This is the concern of the state about the development of its intellectual nation [1].

Socio-economic processes are changes in society that are reflected in its welfare, political and economic stability, security conditions, etc. The functioning of these processes determines the complex nature of social changes, in the structure of which the social and economic properties of processes are supplemented by political ones. If the basis of socio-economic processes is the cycle of "innovation-investment", then the political – opposition "challenge-reaction." The main elements of the socio-economic process are: participants, the subject (initiator) of the process, the reasons and the observer, who is a member of the scientific community. Among the participants in the process are all active and passive members of society whose interests affect the changes taking place in society. By the number of participants in the process, one can judge its nature, scope and level of coverage. The subject (initiator) of the process is one of its participants, which has considerable resources, which allow maintaining the dynamics and direction of social changes for a long time. The initiator of the process is able to seriously influence the course of such changes by reproducing favorable conditions aimed at achieving the expected result. The initiator's influence on the process may not be conscious, causing certain changes contrary to the will and interests of the initiator. Being the manager of funds, resources, exercising the right of legislative initiative, the subject of the process establishes

the rules of the game for all its participants, setting the desired vector of direction to the process [2].

In the applied sociological study, three kinds of tests are used:

- Projective, allowing to reveal the presence of certain socio-psychological properties of the person;
- Assessments that allow for relative measurements of ability, level of development, etc.;
- Professionalism, which allows to reveal the degree of readiness for a certain activity.

According to the subject of the study, there are general tests that fix some integrity of the personality's psychic properties, personal tests – special tests designed to diagnose one or another trait, characteristics, properties of the subject (for example, mental development, professional and creative abilities, level of shared responsibility, self-control and others), and group, designed to diagnose group psychic processes – the level of cohesion of groups and collectives, the characteristics of group social-psychic climate, interpersonal perception, and so on. [3]

Particularly widely used in sociological research are group tests, which include sociometry, which is a kind of psychological test on the survey and is a kind of method for diagnosing, quantifying and analyzing the relationships of small, fully formed social groups.

Studying the nature of the relationship of members of the work collective is one of the most urgent tasks of the sociology of labor. Sociology makes it possible to measure the degree of unity (disunity) of a group; identify "sociometric positions", that is, the relative authority of the members of the group on the grounds of sympathy (antipathy); Identify intragroup cohesion, leaders, etc.

The results of the sociometric study can be interpreted graphically and quantitatively (sociometric indices,

statistical analysis). Being easy-to-use, sociometry is widely used by sociologists-practitioners to diagnose group cohesion, to identify leaders. At the same time, the limitation of this procedure was proved, because with its help surface, not deep relationships are fixed. To develop measures to manage the development of relationships in the surveyed groups, it is necessary to resort to other methods of research that allow us to identify the specificity of groups, their value-normative unity, and the motivation of sociometric elections [4-6].

In the practice of sociological research, the method of studying the products of activity is frequently used-the collection of information in the analysis of materialized results of labor activity. At the same time, the object of research is not people or their relations, but the products of their previous labor activity.

This mental activity is accompanied by the construction of various kinds of conjectures and presumptive explanations of the observed phenomena. In the beginning, explanations are problematic. Further study amends these explanations. As a result, science and practice overcome numerous deviations, errors and contradictions and achieve objectively true results.

The decisive link in the cognitive chain that provides the formation of new knowledge is the hypothesis. The most important among those noted in the definition will be the following characteristic features of the hypothesis.

Hypothesis is a universal and necessary for any cognitive process form of development of knowledge. Where there is a search for new ideas or facts, regular connections or causal dependencies, there is always a hypothesis. It acts as a link between previously achieved knowledge and new truths and, at the same time, a cognitive tool that regulates the logical transition from the former incomplete and inexact knowledge to a new, fuller and more accurate one.

Thus, the development inherent in the process of cognition predetermines the functioning of the hypothesis in thinking as a necessary and universal form of such development.

The construction of the hypothesis is always accompanied by the hypothesis about the nature of the phenomena being investigated, which is the logical core of the hypothesis and is formulated as a separate judgment or system of interrelated judgments. It always has a weakened epistemic modality: it is a problematic judgment in which inaccurate knowledge is expressed.

To become a reliable knowledge, the hypothesis is subject to scientific and practical verification. Running with the use of various logical methods, operations and forms of output, the process of testing the hypothesis leads to a refutation or confirmation and further proof of it.

The hypothesis arising during the construction of the hypothesis is born from the analysis of the actual material, on the basis of the generalization of numerous observations. An important role in the emergence of a fruitful hypothesis is played by intuition, creativity and imagination of the

researcher. However, the scientific hypothesis is not just a guess, a fantasy or an assumption, but a rationally based, based on concrete materials, rather than an intuitively and unconsciously accepted assumption.

These features enable us to more clearly define the essential features of the hypothesis. Any hypothesis has initial data, or bases, and the final result is an assumption. It also includes the logical processing of the input data and the transition to the assumption. The final stage of cognition is the hypothesis testing, which turns the assumption into reliable knowledge or refutes it.

A common technique for predicting certain processes and phenomena is modeling. Modeling is considered a sufficiently effective means of predicting the possible occurrence of new or future technical means and solutions. For the first time for forecasting purposes, the construction of operating models was undertaken in the economy. The model is designed by the subject of the study so that the operations reflect the characteristics of the object, essential for the purpose of the study. Therefore, the question of the quality of such a mapping – the adequacy of the model to the object – is lawful to solve only for a certain purpose. The construction of the model based on preliminary study and identification of its essential characteristics, experimental and theoretical analysis of the model, comparison of the results with the data of the object, correction of the model, constitute the content of the modeling method [7].

One of the methods of modeling is the method of mathematical modeling. The economic-mathematical model is understood as the method of bringing to a complete description of the process of obtaining, processing the initial information and evaluating the solution of the problem in question in a fairly broad class of cases. The use of a mathematical apparatus for describing models (including algorithms and their actions) is associated with the advantages of a mathematical approach to multi-stage information processing, the use of identical means of problem formation, the search for a method for solving them, fixing these methods and converting them into programs designed for the use of computer facilities.

The application of mathematical methods is a prerequisite for the development and use of forecasting methods that provide high requirements for the validity, effectiveness and timing of forecasts.

An important applied value in forecasting belongs to methods of regression analysis. Regression analysis is used to study coupling forms that establish qualitative relationships between the random variables of the random process being studied. In other words, the connection between random and nonrandom variables is called regression, and the method of analyzing such relationships is called regression analysis. The advantage of the regression method should be considered its universality, a wide range of functional dependencies, the possibility of inclusion in the statistical model as an independent variable of the time factor.

A specific forecasting method is the scenario forecast – it is a kind of method for describing a logically sequential process, events based on the current situation. The scenarios are described taking into account time estimates. The main purpose of the scenario is to determine the general goal of the development of the projected object, the phenomena and the formulation of criteria for assessing the upper levels of the "target tree". Scenarios are usually developed on the basis of preliminary forecast data and initial materials on the development of the forecasted object. The initial materials should include technical and economic characteristics and indicators of the main processes of the production and scientific base for the solution of the stated goal.

The scenario is a picture that shows a consistent detailed solution of the problem, identification of possible obstacles, detection of serious shortcomings, in order to prejudge the issue of the possible termination of ongoing work on the projected facility. The scenario by which a forecast for the development of an object or processes should be drawn up should contain questions of the development not only of science and technology, but also of the economy, foreign and domestic policy. Therefore, scenarios should be developed by highly qualified specialists of the appropriate profile of the projected facility. The script, by its descriptiveness, is the accumulator of the initial information, on the basis of which all the work on the development of the predicted object must be built. Therefore, the script in its final form should be carefully analyzed [8].

Consequently, in the process of systematized scientifically based forecasting of the development of socio-economic processes, the methodology of forecasting, as a set of methods, methods and methods of thinking, was developed, which allows analyzing the retrospective data, exogenous and endogenous links of the forecasting object, as well as their measurements within the framework of the phenomenon under consideration or the process of deducing judgments of certain certainty as to its future development.

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