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PECULIARITIES OF SYSTEM APPROACH USE TO COGNITION OF ECONOMIC PHENOMENA

Abstract. Essence of system approach through the synthesis of the categories «system» and «approach» was defined within the article. As well as advantages of system approach use were identified. Performed analysis of the mechanism of system approach use through its principles identification (integration, structural ability, hierarchy ability, interrelation, prevailing the whole over the parts), purpose, functions (cognitive, descriptive, enriching, prognostic, system creative), methods (observation, grouping, abstracting, comparing, system analysis, system synthesis) and components (system-component; system-structural; system-purpose; system-functional; system-resource; system-historical, system-integrative; system-communicative were identified.

Keywords: scientific approach; system; system approach; method; principle; function; component.

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ОСОБЛИВОСТІ ЗАСТОСУВАННЯ СИСТЕМНОГО ПІДХОДУ ДО ПІЗНАННЯ ЕКОНОМІЧНИХ ЯВИЩ

Анотація. Визначено сутність системного підходу через синтез категорій «система» та «підхід». Також визначено переваги використання системного підходу. Проведено аналіз механізму застосування системного підходу через ідентифікацію його принципів (цілісності, структурності, ієрархічності, взаємодії, превалювання цілого над частинами), мети, функцій (пізнавальна, описова, збагачувальна, прогностична, системоформуюча), методів (спостереження, групування, абстрагування, порівняння, системний аналіз, системний синтез) та компонентів (системно-компонентний; системно-структурний; системно-цільовий; системно-функціональний; системно-ресурсний; системно-історичний; системно-інтеграційний; системно-комунікаційний).

Ключові слова: науковий підхід; система; системний підхід; метод; принцип; функція; компонент.

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ОСОБЕННОСТИ ПРИМЕНЕНИЯ СИСТЕМНОГО ПОДХОДА К ПОЗНАНИЮ ЭКОНОМИЧЕСКИХ ЯВЛЕНИЙ

Аннотация. Определена сущность системного подхода через синтез категорий «система» и «подход». Также определены преимущества использования системного подхода. Проведен анализ механизма применения системного подхода через идентификацию его принципов (целостности, структурности, иерархичности, взаимодействия, превалирование целого над частным), цели, функций (познавательная, описательная, обогатительная, прогностическая, системообразующая), методов (наблюдение, группирование, абстрагирование, сравнение, системный анализ, системный синтез) и компонентов (системно-компонентный; системно-структурный системно-целевой, системно-функциональный, си-

стемно-ресурсный, системно-исторический, системно-интеграционный, системно-коммуникационный).

Ключевые слова: научный подход; система; системный подход; метод; принцип; функция: компонент.

Target setting. Science as an objective phenomenon of human activity that currently exist in our society and plays a significant role in its development, it is a combination of cognition phenomena and objects of nature, society and thinking and the results obtained by scientists in the implementation of various research. In fact, cognition always happens through the use of a certain set of methods. Sometimes consciously, and sometimes without realizing the depth of the scientific method, but primarily the result of knowledge is always a consequence of the use of a particular approach to the study of reception. That is why the research questions of scientific approaches are important because they allow scientists to understand the laws of nature, identify some mutually puzzles between different components of society, to describe the inner world of a human being.

Today in the branch of exploration of different objects, processes and phenomena, scientists have formed many different by nature, scientific approaches, which are an important component of modern scientific knowledge. There are some usable specific, common research approaches for each separate science. In modern terms scientifically significant number of different approaches to the nature of knowledge, in particular economic phenomena are formed and proved. In economics they includes following: genetic; evolutionary; historical; system; structural; functional; synergy, integration, cyber, resource and various derivatives of these approaches and their synthesis (systematic and structural, systematic and synergetic etc.). The existence of large number of different approaches, due to the complexity of economic objects, requires the use of a wide range of tools to its cognition. The issue of scientific approaches, their systematization and classification of the corresponding scientific methods are quite controversial and not fully understood.

The systems approach is usually referred to interdisciplinary knowledge assets because it is the inherent high versatility in application to the study of phenomena and objects of different nature. In economics this approach took its important place in the study of certain macroeconomic and microeconomic systems. However, the very significant differentiations between economic entities also affects the features of system approach to their cognition that requires some grounding of methodology of this approach, singling out its main components and nature of the cognitive method.

Analysis of recent research and publications. In general methodology of application the system approach is reflected in numerous scientific works of many scientists. In particular, the theoretical features of the application of this approach can be found in works of L. Antoshkina, O. A. Arapov, S. V. Mochernyi, O. M. Novikov, O. Rokytska, K. O. Soroka, Y. P. Surmin, V. N. Chernyshov, O. D. Sharapov and others.

Applied aspects using a systematic approach from the perspective of its application to specific scientific research facilities devoted to the work of I. O. Grygoruk, P. A. Drozdov, I. I. Dyakonova, A. V. Katrenko, R. Kubanov, S. I. Prysuhin, I. O. Revak, L. Y. Filobokova, N. V. Fomitska, M. V. Charayev, O. S. Shumilo and others.

Uninvestigated parts of general matters defining. However, despite numerous achievements in the field of system approach, cognition of its nature, there are various concepts for the use of the methodology of this method, which did not always contain all the necessary elements for its use or not fully disclose its contents, particularly in terms of the use of methods of scientific approach. This is what determines the feasibility of organizing and summarizing the essence of a systematic approach and its cognition by identifying key components of this approach.

The purpose of the article. The article is the identification and description of the features of systematic approach for cognition of economic phenomena.

The statement of the basic material. Let's start with a review of a systematic approach to determine its nature. Considering content of the category "approach", that ,as a philosophical category, is seen as a way of studying the method of any events. In economic terms, this dictionary as a set of the ways, receptions considering of anything, any impact on anything, the attitude to something [5, c. 231].

R. Kubanov notes that under the approach should be understood as a view of the object and the special procedure for constructing the entire research cycle. In a broader sense, the author notes, the approach - a combination of organic theory (or conceptual views) with a set of techniques that together give a reflection of reality [7, p. 13-14].

A. Novikov identifies two aspects in the process of identifying the essence of the approach. The scientist said that in the first meaning approach is considering as a efficient principle, starting position, guideline or belief. The second meaning research approach is considered as a study of the subject of a research. [10, p. 41].

Within this article approach is considering as somehow defined algorithm of cognition of any phenomenon, process. Accordingly, scientific approach - the algorithm study scientific processes in general and certain objects that are learned by scholars, based on theoretical concept formulated its own use.

According to the set up target of this article we have discussed only one of the varieties of scientific approaches widely used in economic studies - systematic approach. To identify the nature of the given approach it is important to understand the essence of the category of "system", which is often used in the process of understanding the nature of different objects. Today significant number of interpretations of this category is formed, as reflected in the preparation of numerous scientific papers in the field of systems theory, cybernetics and systems analysis.

S. V. Mochernyi in his work, dedicated methodologies economic study, proposes to consider the system as a set of elements, among which there are firm relations and communications, and therefore the interaction that results in quality and there are new properties not inherent individual elements. The system is a combination of certain subsystems and components and relationships between them, which are inherent attributes of integrity, organization, integrative properties and availability features self-movement and general purpose [9, p. 14]. Such compositional approach is the most popular among scientists. This approach is taken to the study of the nature of the system consider it as a collection of objects, elements, phenomena, processes, tools and more. In fact in the scientific literature, it is a classic approach to the treatment system as a separate category. This interpretation is also A.V. Katrenko: a system – is a set of objects with relationships between objects and between their attributes (properties) [6, p. 37];

A. A. Arapov: a system – is a finite set of functional elements and relationships between them, which singled out from environment for a specific purpose within a specified time interval [2, p. 6]; V. M. Lazebnyk: a system – is a set of elements, combined to a single unit to perform a specific function [8]; I. M. Pistunov: a system is a collection of objects and processes, called components or elements interconnected and those that interact with each other, forming a single entity, one that has properties not characteristic of its constituent components, taken separately [11, p. 12]; Y. P. Surmin: a system – is a set of elements in mutual relations and relations with the environment and create a single unit integrity[16, p. 345]; K. O. Soroka: a system – is a set of elements, that has new properties are missing in each of element [15]; V. Chernyshev: a system – is a set of elements that make up the unity of their relationships and interactions with each other and the environment, creating a characteristic of the system integrity, quality and certainty of purpose [17];

O. D. Sharapov: a system – is a set of interrelated, interdependent elements of any nature which are connected by some system creative signs, form a single unite and are subject to certain common goal [18]; I. O. Revak: the system in the narrow sense - is the order, due to purposeful placement of all components in a hierarchy or logical subordination, and expanded - a dynamic, self-organizing, multifunctional structure, all the components of which interact and determine the synergistic effect to achieve the a positive result [13, p. 55].

Within this article we consider the system as an object of study, which is specifically pointed out by the researcher during the process of scientific cognition of the reality, which is a separately identifiable purpose of the operation, consisting of components and their relationships, interaction with other objects of reality that make up collectively environment on the object of knowledge.

Considering motioned above, in Fig. 1 is shown the essence of the concept of identification system approach as a universal scientific category.



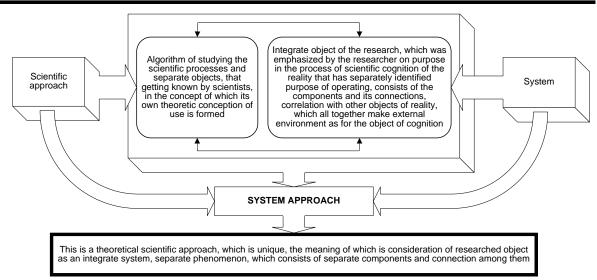


Fig. 1. Identification of systemic approach nature

Source: compiled by the authors, based on [1; 2; 5; 7; 9; 14; 15; 16].

Analyzing the nature of systemic approach as a means of knowledge, should fully support the position of L. I. Antoshkina, which says that a systematic approach is inextricably linked to the fundamental ideas of dialectics and dialectical approach. He has his nature and singled out a methodological approach [1, p. 105]. The positive sides of this approach in the knowledge of economic research objects should include the following.

- 1. The formalization of the cognitive process using a systematic approach and applying its algorithm, the process of studying the phenomena and objects is more logical and understandable especially for a scientist that is an important aspect of this study and obtaining concrete and logical results.
- 2. Increase of the level of reasonableness of the research object nature any object of knowledge can be considered as a system to identify the boundaries of the object and fix everything that will be explored; Decomposition of awareness enables its very essence and simplifies the light of this learning process. Absolutely agree with I. O. Grygoruk that a systematic approach provides an opportunity to further explore the problem in the functioning of the system, because even the most advanced elements between which there are no relevant relationships would not work effectively to achieve a common goal [3, p. 24].
- 3. Completeness of research while applying a systematic approach and object decomposition into separate components, identifying links between them provided the opportunity to maximize coverage of all aspects of the phenomenon that is studied, which increases the fullness of science-research-term.

According to O. S. Shumilo, systematic approach creates a new way to research that has the ability to maximize establish a typology, structure and logic elements object relationships that contribute to the integrity of its operations [19, p. 651].

- 4. Increased flexibility of scientific research a systematic approach to the process, allows considering the object of study as a separate integrated systems, while structuring its focus on more important from the standpoint role in the development of the system components, which is also due to carrying out such analysis. Accordingly, the scientist in this situation has a certain selection algorithm and its actions in the process of learning object.
- 5. The growth of cognition potential of the object of study an opportunity on the basis of the results obtained in the course of a systematic approach to use other scientific approaches to deepen the theoretical and methodological component of the functioning of the phenomenon. Especially this combination is advisable to use while studying additional aspects of the systems under consideration. A good is an analysis of some of (the essence of which was grounded in the theoretical plane using the

system approach) using a synergistic approach (exploring self-development of such systems and their operation in an unstable environment), functional approach (emphasizing basic functions of the system, its usefulness from the perspective role in the development of society), and so on. In many cases, the use of certain scientific methods to the knowledge of phenomena, processes and objects is accompanied by an initial consideration of how certain systems (sometimes not consciously).

Today, the scientific works of local and foreign scientists theoretical, methodical and methodological aspects of systematic approach worked so that its use in the economy will allow a deep knowledge of the object without using other methods of cognition. However, the existence of a significant number of different concepts of system approach requires constant refinement of their use within this approach to the knowledge of a particular object of study. Due to this purpose, the article analyzes in detail the mechanism of a systematic approach to the identification of its main components is considered "system approach as a separate system".

Absolutely agree with the position of I. I. Dyakonova, the most significant signs of identification system are the following characteristics: a set of components or elements, function, purpose, environment (internal and external), the availability and effectiveness of the links mechanism, input and output the possibility of interim results at the outputs of the system. A key role in the identification systems plays goal and function [4, p. 9]. This position was taken into account when describing the mechanism of a systematic approach that is shown in Fig. 2.

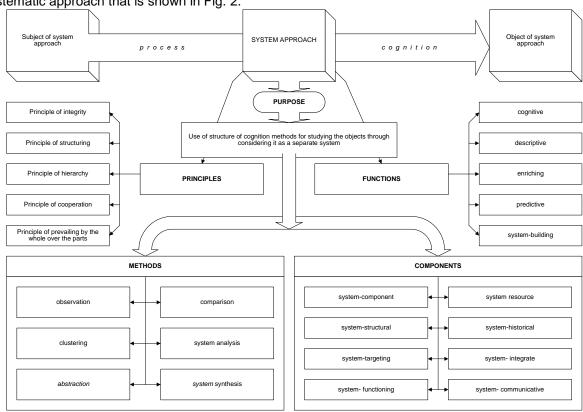


Fig. 2. Mechanism of systematic approach Source: compiled by the authors based on [16, p. 468; 22]

Thus, within the mechanism of the system approach, in our opinion, is to focus on those of its constituents:

1) the object of a systematic approach - is a phenomenon, a process that we want to know through review it as a system;

- 2) the subject of a systematic approach a scientist who wants to use this approach to study the object of systematic approach;
- 3) the purpose of the system approach the use of cognitive methods to study the subject through its consideration as a separate system;
- 4) principles of the system approach mechanism the basic rules to pitch when implementing a systematic approach to a particular object under study; the existence of such rules gives a qualitative and correct information about the object; these principles in its content form the basis of the concept of this approach and distinguish it from other research approaches. The basic principles of this approach should include the following:
- The principle of integrity using a systematic approach scholar should consider an identified set of elements as a holistic education that will enable further grounding of it as a separate system, using system building sign that will be the basis for the subsequent formation of the system as a integrate, separate research facility;
- The principle of Structuring as a result of a systematic approach, received set of elements forms a structure of elements that need to be linked, absents of ability to combine them does not allow to consider such a system as a set and define the relationships between its components, that provide for identification of the structure;
- The principle of hierarchy some elements of the system received as a result of research must be connected to each other on the basis of important components and less important elements. Thus forming a hierarchical system and determine its structure, internal architecture. Unlike structuring principle, requires hierarchical distribution of all objects together in terms of importance and role into the future system;
- The principle of interaction a systematic approach requires a clear understanding of the relationships between the various elements of the future system, which in the future will be part of it, which makes the search and description of the various interdependencies between individual system components;
- The principle of a prevalence by the whole over the parts when using system approach should be clearly understood the main system building factor that can identify and create a system of different objects together, hence the need for constant awareness of the importance of purpose and ways of development of the system as a whole over its parts individual components;
- 5) The functions of system approach a set of the work that has to perform by a systematic approach as a means of cognition in the study process of a particular subject. In our opinion, the main functions of the system approach are the following:
- cognitive that is the main function of systematic approach, due to which this approach allows us to investigate certain phenomena, processes, any objects that the researcher wants to study using this method;
- narrative a systematic approach enables scientist using text to describe the results of the process of cognition a particular subject; in general, this approach is mainly in theory by its nature and the result of its application is some text information about the phenomenon;
- *enrichment* the systemic approach as a way of cognition for scientists makes it possible to enrich the theory of science new discoveries and results in the implementation of research;
- predictive system approach enables fully describe exhaustively studied objects and phenomena from the perspective of their consideration as separate systems, provides an opportunity for scientists based on the existing information to build different scenarios of such system developement in the future, specific to the future behavior of individual components, and it generally as a single object of cognition;
- system-building a systematic approach as a unique way enables knowledge through the application of its methodology to systematize its use of the theory of science in general and the development of society. This allows to avoid the chaos and all the phenomena and processes of our objective reality, interacting in the plane of a certain system. It allows scientists to consider the whole world as one global system. In many cases, scientists do not consciously apply a systematic approach to the implementation process of structuring, distribution, hierarchy and regulation;



6) components of the system approach - a systematic approach by its nature is also a complex system, that by using different scientific approaches can be learned. Thus, this is the very uniqueness and versatility of this method of cognition. Applying this method, it is difficult to carry out exhaustive scientists boundaries between it and other approaches in the implementation of scientific research. The majority of scholars engaged in the study features of a systematic approach to its basic components should include the following: system-component; systematic and structural; system-target; system-functional; system resource; systematic and historical; system-integration; system-communication.

We note that each of the above mentioned components, which are essentially separate processes of cognition of the object, meet certain research methods;

- 7) methods of system approach methods in this case are considered as some of the techniques used by scientists while using a systematic approach; we keep the position that any scientific approach consists of a set of individual methods of learning, although in scientific literature the concept of method and approach are regarded as synonymous often. In general, we believe, within a systematic approach scientists intuitively, consciously or not consciously used the following methods:
- Observation as a method of identification of the research which in the future will be considered as separate systems; in this case the observation is particularly widely used by scientists in studying real objects;
- Clustering a method of scientific researches, using which in the context of a systematic approach, allows to systematize certain identifiable elements, separate them by signs ,factors that provides the learning process with more logical character;
- Abstraction -imaginary isolation from the reality of a particular object, which in future will be regarded as a separate system; this method is useful in the study of mental systems that really do not function in nature. This method is effective in the initial stage of a systematic approach to the study of large abstract systems;
- comparison a method of scientific research, which is to show differences and identify of common features between the various elements of the system implemented to identify its important components and clarify their role in the general development of the system;
- systems analysis a method of systematic approach, which consists of the distribution of the existing system into separate parts, establishing relationships between them and their description;
- system synthesis a method of systematic approach, the meaning of which lies in the field, combining certain data in general system, especially the method often used in combination with the method of systems analysis to complete, to obtain information about the object.

Conclusions. In the article is defined the study of systematic approach through synthesis categories of "system" and "approach" that proposed to consider the following: a scientific approach - the algorithm of study the scientific processes in general and certain objects that are learned by scholars, based on theoretical concept formulated its own use; System - integrated facility of the research that is specifically pointed out by the researcher in the scientific knowledge of reality, which is a separately identifiable purpose of the operation, consisting of components and their relationships, interaction with other objects of reality, aggregating about the environment object of knowledge. It revealed that a systematic approach - a theoretical scientific approach, which is inherent versatility and the essence of which must be considered as an object of studying of an integrated system, of separate phenomena, consisting of individual components and the relationships between them.

The article also identified the benefits of using a systematic approach, such as: formalization of knowledge; enhance the validity of the nature of the research object; completeness of the study; increase of flexibility of scientific research; growth of potential of object cognition research.

The analysis of the mechanism of a systematic approach through identification of principles (integrity, structuring, hierarchy, interaction, prevalence of the whole over the parts), purpose, functions (cognitive, descriptive, enrichment, prognostic, system-building), methods (observation group, abstraction, comparison, system analysis, system synthesis) and components (system-component, system-structural, systemic and targeted, system function, system resource, system-historic, system-integration, system-communication).



Obtained data in the process of analysis allowed to generalize and deepen the theoretical basis of a systematic approach to cognition of different objects and phenomena, including the use of this method in economics.

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