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# IMPROVING THE QUALITY OF SERVICES OF HOUSING AND COMMUNAL SERVICES MANAGEMENT COMPANIES IN UKRAINE BASED ON THE APPLICATION OF COGNITIVE MODELING METHODOLOGY

## ABSTRACT

The problematic situation that has developed in the housing and communal sector in Ukraine is well known. It is largely related to the conflict of goals and interests of interested parties. Thus, the owners of residential premises are concerned about the reduction of the quality of housing and communal services against the growth of tariffs. Resource supplying and contracting (servicing) organizations are dissatisfied with untimely and incomplete payment for the provided resources and services, while the state is worried about the lower availability of housing and utility services for most of the population. In their turn, the management companies (MCs) believe that their interests are infringed on both by the state and local self-government bodies.

Dissatisfaction is experienced by managing organizations, which fulfill contractual obligations to resource suppliers, contractors, and owners of apartments, but, nevertheless, are a constant object of criticism. In modern conditions, the state cannot remove itself from the activities to reform the sphere of housing and communal services.

Its policy should be focused on the realization of economic interests of all economic entities of the housing and utilities sector through the creation of mutually beneficial economic conditions at all levels of interaction between them, namely in the provision, distribution, exchange, and consumption of all types of housing and utility services to meet the ever-increasing demands of the population.

**Keywords:** game-theoretic approach, cognitive modeling, housing and communal services reform, quality of services, management company, apartment building management

**JEL Classification:** A10, L30, L31, L97, C10

## INTRODUCTION

The crisis phenomena that have resulted from ill-considered policies for reforms, including in the housing and communal services, primarily necessitate Ukraine's transition to a model of sustainable development. The theory of sustainable development is based on the harmonization of social, economic, and environmental subsystems of the socio-economic system, and aims to find ways to transition the system to a model of sustainable development that will provide a steady growth rate of opportunities [1, p. 353-360].

Thus, the concept of sustainable development is based on the obligatory coherence of economic, environmental, and human development so that the quality and safety of human life does not decrease from generation to generation, the state of the environment does not deteriorate, and social progress does not take place. One of the basic principles of state policy of sustainable development is the principle of defining the vital forces of man, family, society, nation, state, as the highest civilized value. Implementation of this principle in practice is quite difficult.

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The change of worldview, which has been established over the centuries, cannot be quick and should take place with the active participation of the state — from the emphasis on education of children and youth and educational work of the older generation to special economic programs. Applying this principle in practice means moving away from the behavior of a passive recipient and «going down in history». The transition from passive to active behavior begins in consciousness. The process of human and community development begins with the individual, the relationship between people, family, community, or nation [2, p. 415-421].

The sphere of housing and communal services rightfully takes one of the leading places in the economy of Ukraine. Its economic actors provide the most important set of housing and communal services (HCS) to almost the entire population of the country, thereby forming the qualitative characteristics of its living conditions.

Reforming the system of relations between institutional economic entities of housing and communal services (state, local government, utilities, investors and business structures, management companies, owners, and tenants, etc.) involves a fundamental change in their functions and organizational and economic mechanisms of interaction between them in accordance with the need to maximize the economic and other interests of each participant of this dynamic system [3, p. 36-47].

For this reason, the study of the activities of institutional economic actors in the housing and utilities sector, the search for effective tools and methods of modeling their interaction, the justification of its improvement directions at the stage of modernization of the housing and utilities sector is a very relevant task, urgently requiring its solution in the foreseeable future.

## LITERATURE REVIEW

Several issues are arising in the process of interaction of all economic stakeholders in the sphere of housing and communal services, which cannot be solved within the framework of quantitative models. In search of approaches that allow using not only quantitative but also qualitative variables, the authors chose the methodology of cognitive modeling (cognitive approach), which is based on presenting the problem situation in the form of a cognitive map — a set of factors (variables) whose mutual influence is expressed through cause-effect relationships.

Analyzing the publications of domestic and foreign authors it should be noted that the term «cognitive maps» first appeared in the works of the outstanding American scientist Edward Chace Tolman. He suggested that cognitive maps could determine the behavior of both animals and humans and called for «extending» cognitive maps as a means of combating excessive aggression — the only way, in his opinion, to teach people to adequately navigate the problems of life. Thus, a cognitive map can be understood as a schematic, simplified description of an individual's world picture, or rather its fragment relating to a given problem situation [5].

According to Max Wertheimer, cognitive maps can be a useful tool for forming and refining a hypothesis about the functioning of the object under study, considered as a complex system. To understand and analyze the behavior of a complex system, it is advisable to construct a structural scheme of cause-and-effect relationships [6].

David Hays' monograph [7] on causal analysis emphasizes that few interesting phenomena in the social sciences depend on a single cause alone. Social phenomena usually involve many different events, trends, determined by several factors, each in turn affecting several other factors. Networks of causal relations are formed, i.e. causality is systemic in nature. Causality produces a model of social phenomena, and the study of models provides a deeper understanding of the causal relationships that produced them.

By analyzing one's own and others' cognitive maps, a researcher can quickly deepen understanding of a problem and improve the quality and validity of decisions. In addition, a cognitive map is a handy tool for changing established stereotypes and facilitates the generation of new points of view. For example, M. Maruyama [8, p. 93-102] gives an example of the erroneous belief (cognitive cliché) that trade between two countries is a zero-sum game. If one partner wins, the other loses as much.

English scientist C. Eden suggested using cognitive maps for collective decision-making [9, p. 1-13]. He got the impetus for this theory from reading G. Kelly's famous work on the psychology of personal constructs [10, p. 127-137]. The scientist C. Eden emphasizes the importance of G. Kelly's statements that the effectiveness of interaction in a group of decision makers significantly depends on how much each participant understands the ways of interpreting situations by other group members. The important role in obtaining a consensus is played by the achievement of unity by the members of the group

in the way of constructing future events, the processes of «strengthening understanding», «changing symbols» and the identification of new points of view.

The given approach allows to get rid of several circumstances interfering with adoption of effective decisions (narrowing of a sight at the reality under the influence of habitual experience, ritual nature of planning, inefficiency of organizational structures, influence of stereotypes, ambitions).

The development of the cognitive direction in economics and management led to the emergence of two versions of economic cognitivism, European and American [11; 12]. The American school is characterized by an individual bias, while the European tradition emphasizes the analysis of collective social representations. The study of social representations in the European psychological tradition is opposed to the mechanistic and antisocialism characteristic of American scholars.

Publications of domestic and foreign authors: B. Walliser [13], Yu. F. Simionov [14],

S. A. Evseeva [15]. The analysis of the scientific literature showed that the problem of cognitive modeling is considered only in separate works and requires further study. Several issues related to this problem remain open. It concerns the issues arising in the process of interaction of all economic entities concerned in the sphere of housing and communal services, which cannot be solved within the framework of quantitative models. In search of approaches that allow using not only quantitative, but also qualitative variables, the authors chose the methodology of cognitive modeling (cognitive approach), which is based on presenting the problem situation as a cognitive map — a set of factors (variables), whose mutual influence is expressed through cause-effect relationships. An important advantage of using the methodology of cognitive modeling in Ukraine is the possibility to consider different points of view on the situation, as well as resolving various conflicts between the economic actors concerned in the sphere of housing and communal services.

## AIMS AND OBJECTIVES

The management company which is engaged in the management of an apartment house (MHA) and focused on the coordination of interests of all economic subjects of housing and communal services sphere. Studying the possibility of improving the quality of professional activities of the management company for the management of apartment buildings (MAB), considering the interests of all economic subjects of the sphere of housing and communal services.

## METHODS

Using the game-theoretical approach and cognitive modeling, the authors identified the composition of economic stakeholders in the sphere of housing and communal services. They include: owners of premises in apartment buildings, contracting (service) organizations, the staff of the managing organization, local, municipal and regional authorities, in the coordination of the interests of which the MC is directly involved [4, p. 343-347].

## RESULTS

In the consciousness of the inhabitants of Ukraine the economic development of the housing and utilities sector and its fruits are directly related to the affiliation with the authorities, while people themselves do not believe in the possibility of self-realization in the economic sphere, that is, individual energy, efforts of self-realization almost «do not work» for economic development, are not demanded in modern Ukrainian economic and social life. The study showed that the cultural peculiarities of Ukraine more contribute to the collective (national) model of economic development.

However, the unclaimed personal energy and self-realization significantly hinders the accelerated economic development and is a powerful barrier to the innovative development of the economy of Ukraine. Hence the need for such a development of socio-economic institutions in Ukraine so that people could overcome cultural and psychological barriers and take risks and responsibility for their own economic well-being.

Cognitive modeling is designed to structure, analyze, and make management decisions in complex and uncertain situations in the absence of quantitative or statistical information about the processes in such situations. Cognitive modeling contributes to a better understanding of the problem situation, identifying contradictions, and qualitative analysis of the system.

The purpose of modeling is to form and clarify a hypothesis about the functioning of the object under study, considered as a complex system, which consists of separate, but still interrelated elements and subsystems. To understand and

analyze the behavior of a complex system, a structural scheme of cause-and-effect relationships of system elements is constructed. Analysis of these relationships is necessary to implement various process controls in the system.

Cognitive modeling allows in express mode, in a short time at a qualitative level:

- assess the situation and analyze the mutual influence of the acting factors determining the possible scenarios of the situation development;
- to reveal the tendencies of development of situations and the real intentions of the participants;
- determine possible mechanisms for interaction between participants in the situation to achieve its purposeful development in the interests of the housing and communal services in Ukraine;
- develop and justify the direction of management of the situation in the interests of actors in the housing and communal services sector;
- identify possible options for the development of the situation, considering the consequences of major decisions and comparing them.

The application of cognitive modeling technology allows you to be proactive and not to bring potentially dangerous situations into conflict, and if they occur, to make rational decisions in the interests of subjects of housing and communal services in Ukraine.

For the tasks associated with organizational systems, the problem of uncertainty in describing and modeling the functions of the participants is not a methodological one but is inherent in the very subject of research. Different formulations of the problem of situation management are possible, depending on the completeness of information available to the participants about the situation and about other participants, to find resonance and synergy effects, when the improvement of the situation when several participants affect it simultaneously is greater than the «pooling» of positive effects from each of the participants separately.

One common cognitive model is the cognitive map. It is used in the cognitive modeling of complex situations. A cognitive map (cognition map) is a type of mathematical model represented in the form of a graph, which allows describing the subjective perception of a person or group of people of a complex object, problem, or system functioning [16, p. 2-15].

It is designed to reveal the structure of causal relationships between elements of a system, a complex object, constituting problems and assess the consequences occurring under the influence of the impact on these elements or change the nature of relationships.

The cognitive map displays only the fact of the presence of influences of factors on each other. It does not reflect the detailed nature of these influences, nor the dynamics of changes in the influences, depending on changes in the situation, nor the temporal changes of the factors themselves. The consideration of all these circumstances requires a transition to the next level of information structuring, that is, the cognitive model of the information situation [17, p. 84].

During the research, the authors determined the following main task, which can be solved through the formation and further practical application of cognitive maps in the sphere of housing and communal services. The task of the research is to identify permissible managerial impacts on the situation by the MC, aimed at achieving its own interests and the interests of all economic entities of the sphere of housing and communal services.

Simultaneously with the solution of the main task of the study, in the process of its implementation, methods were identified to solve a set of problems associated with the practical application of cognitive modeling methodology in the activities of economic entities of the housing and utilities sector.

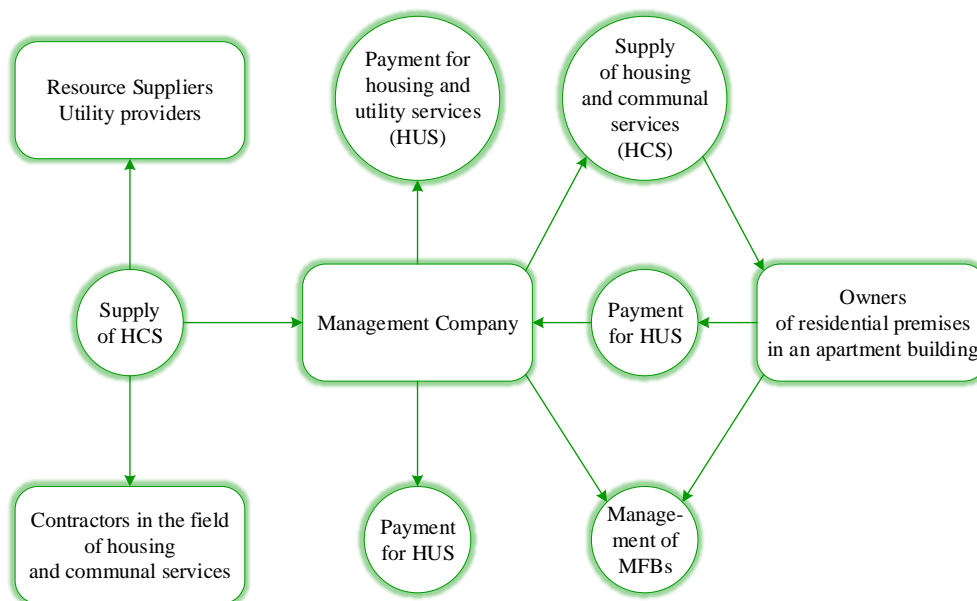
An attempt was made to select a methodology adequate to the conditions of the housing and communal services sphere to form and apply cognitive maps to solve the main tasks of management and maintenance of the existing housing stock. In addition, the possibility of developing the techniques for training the MC's staff to techniques of qualitative analysis of management situations based on cognitive maps was analyzed.

MFB management should provide favorable and safe living conditions for citizens, proper maintenance of the common property in an apartment building, solve the issues of using the specified property, as well as provide utility services to the citizens living in such a building [18, p. 1997-2002].

One of the ways to manage an apartment building is to transfer the rights to manage it to a management company by the owners of the residential premises of a particular house. When realizing the goals of management of the apartment building it interacts with many economic entities functioning in the sphere of housing and communal services.

However, in practice, the MC is very difficult to coordinate their interests and actions to meet them with the interests of all economic entities in the sphere of housing and communal services, taking part in the operation of the housing stock, its maintenance, and supply of all types of resources necessary for the normal life of the population. That is why the authors have chosen only those interested participants of economic activity in the sphere of housing and communal services with which MC can build mutually beneficial relations based on partnership. For MCs such priority interested participants of economic activity in the sphere of housing and communal services include owners of premises in apartment houses, contracting (servicing), and resource-saving organizations.

Local and regional authorities should be added to this group of priority interested participants, as they are the sources of institutional restrictions. The scheme of interaction between the management company and business entities in the sphere of housing and communal services is shown in Fig. 1.



**Figure 1. Interaction of a management company with economic entities in the sphere of housing and communal services in Ukraine.**

As follows from the scheme shown in Fig. 1, the owners of premises in MFBs are consumers of services provided by the management company. Management companies carry out their activities on the management of apartment buildings based on the management contract, which defines the procedure of providing housing, utilities, and other services and the procedure of payment by the users.

For the rendered services, the owners of premises in MFBs are obliged to pay in time and in full. The peculiarity of the MC's activity in the sphere of housing and communal services is that they render housing and communal services not by their own efforts, but with the involvement of different organizations. While providing housing and communal services, the Managing Company concludes contracts on the purchase of resources (water, gas, heat, electricity, etc.) with the corresponding resource supplying organizations, while acting as the consumer of resources.

Subsequent transfer of services to premises owners in MFBs is also carried out based on management contracts, but in this case, the MC already acts as a supplier of corresponding resources for premises owners of MFBs.

To perform works (services) on maintenance and repair of the common property of the owners of the premises in MFBs, i.e., housing services, the MC uses subcontracting contracts with the attraction of various contractors (service providers).

The management company calculates and collects payments for housing and communal services. Only after the collection of funds for payment for consumed services and resources, the MC can make settlements with the relevant resource supplying and contracting (servicing) organizations.

The situation becomes problematic due to the inconsistency of goals and interests of interested economic entities and respective opportunities used by them to achieve their goals.

The main reason for arising conflict situations in the MFB management market is a lack of coordination of interests between economic entities. They include the owners of premises in MFBs, resource-supplying and contracting organizations, local, regional, and federal management bodies, as well as MCs personnel. As a rule, conflict situations arise:

- at the stage of development and adoption of regulatory and legal acts, which define unequal rights of economic entities, due to the imbalance of responsibility, authority, and interaction of subjects of housing and communal services;
- at the formation of the tariff policy on the services of management and maintenance of the housing stock;
- in the adoption of management decisions by the management of MCs, due to the inefficient management system, established in the pre-reform period and still operating at the present time [19, p. 39-43].

In the modern conditions of management to prevent the appearance of conflict situations between the interested parties, MC can use only its own internal mechanisms of management, as it has no opportunity to change the legislative framework, which by its inconsistency creates this conflict of interest. Emerging conflicts of interests and opportunities in the cognitive map are displayed in the form of factors (variables), on which the conflicting influences.

Formation of the methodology of building a cognitive map of quality management of housing and utility services in the activities of MCs, considering the priority interests of business entities, was carried out considering the latest achievements in the field of cognitive analysis and the specifics of the tasks to be solved.

The authors have determined the following priorities:

- the choice between weighted cognitive maps (in which the strength of the causal influence of one factor on another is set by the weight of influence) and sign cognitive maps (in which only the sign of influence is set) was made in favor of sign maps. This is due to the lack of acceptable reliability of the knowledge required to determine the weight coefficients of influence of factors;
- the traditional default approach to constructing cognitive maps assumes that the analyst only needs to know what a cognitive map is and have knowledge of the problem domain to construct a map of the problem situation, i.e., to highlight the significant factors and the cause-effect relationships between them.

In contrast to the traditional approach, the authors proposed to include in the process of forming a cognitive map the procedure of expert verification.

Numerous studies [15; 18] support this proposal, pointing to the existence of several typical risks, which have a significant influence on the reliability of the results of solving applied problems, and the emergence of direct errors due to the human factor when compiling maps.

Simply put, cognitive maps, which are created without verification by the known criteria of absence of risks and direct errors, do not provide the necessary reliability in solving practically significant problems. There are two types of expert verification in cognitive mapping practice:

- verification of the cognitive map by known verification criteria protecting against the risks of unreliability, in the course of map development and, if required, correction of the map (the so-called verification debugging);
- examination of the cognitive map by specialists and representatives of other interested managing subjects in the sphere of housing and communal services [20; 13].

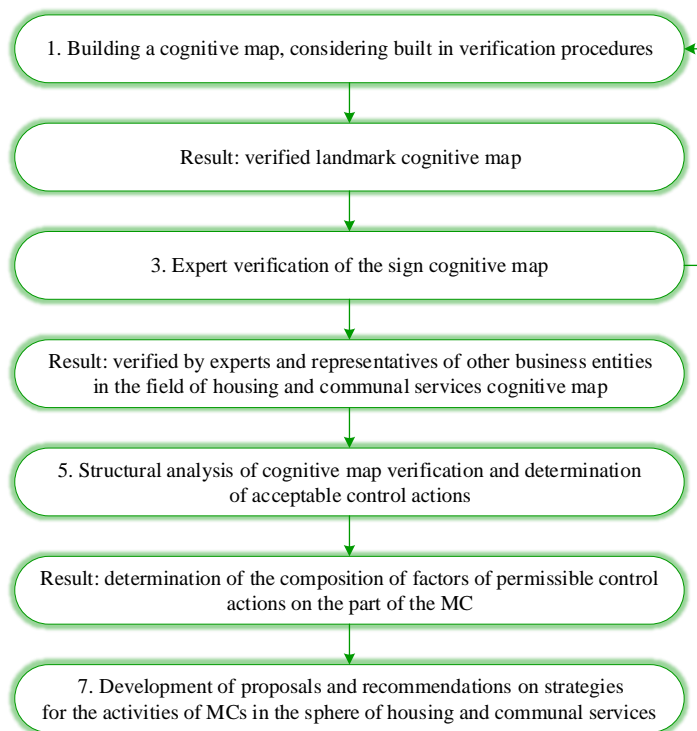
Verification of the first kind requires certain skills in working with cognitive maps, understanding the dynamic processes described by the map, and prescribed criteria for its evaluation.

The simplest is the criterion of (commensal) completeness of direct influences on a factor, which is often ignored. The second type of verification, i.e., examination, unlike the first, requires mainly expert knowledge in the subject area of housing and communal services.

The main criteria here are plausibility and the presence of explanatory possibilities. To do this, a cognitive map must clearly reflect the presence of existing problems or conflicts of interest of economic agents in the housing and communal sphere.

The sequence of building and using a cognitive map for managing the quality of housing and utility services according to the suggested methodology is presented in Fig. 2.

The existence of feedbacks implies that the cognitive map will be returned for correction in case problems or conflicts of interest are discovered. The correction may require diagnostics of reasons of inconsistency and a complex search of the decision to eliminate the revealed problems or conflicts of interests. The proposed methodology in terms of map construction and structural analysis is supported by a set of technological techniques to support visualization and formal map analysis.



**Figure 2. Scheme of solving research problems by applying the cognitive map.**

This complex includes tools that greatly facilitate the visual understanding of the model of a complex situation and the identification of significant properties of the model behavior by increasing clarity and reducing the cognitive load when working with the map [21, p. 839—844].

Among them, the following should be highlighted:

- visual map restructuring tools (without changing the structure of causal influences in the map);
- means of structural convolution, allowing to abstract from such details, as intermediate blocks in the map, insignificant from the point of view of identification of controlling influences of CC and other interested parties.

The main, from the point of view of solving applied tasks, elements of the cognitive map are target and control factors. In this study, the target factors of MCs activity are the factors reflecting the set of interests of all economic subjects of the sphere of housing and communal services, with which MC interacts in the process of its activity.

Based on the study of the set of interests of all economic actors of the housing and communal sphere, the authors identified the following factors as target ones:

- the quality of housing services provided by contracting (service) organizations;
- quality of communal resources provided by resource supplying organizations;
- quality of services on the management of MFBs;
- profit of the MC;
- timeliness and completeness of payment for communal resources to the resource supplying organization;
- timeliness and completeness of payment for housing services to contractors (service providers);
- the amount of wages of the MCs personnel;
- quality of work of the MCs personnel;
- quality of the communal services, provided by the MC to the apartment house owners;
- tariffs for apartment house management, set by the apartment house owners;
- tariffs on the maintenance and repair of the common property in MFBs (i.e. housing services), established by the owners of premises in MFBs.

No less important is the allocation of managing factors of the management company because the change in the state of the target factors is carried out by purposeful influence on the managing factors, as well as factors of influence of economic entities interested in the sphere of housing and communal services on the target factors that represent common interests for them. Along with controlling factors, it is necessary to consider the uncontrollable factors that directly or indirectly affect the target factors, as their consideration can play a significant role in assessing the attainability of objectives. The initial analysis of the state of the target factors and justification of control and uncontrollable factors was carried out based on the analysis of the normative-legal base, regulating the activities of MC, official statistical data, MC experience, published in specialized printed publications, and opinions of MC specialists. During verification by the above-mentioned criterion of (commensurate with) completeness of direct influences on each dependent factor, the composition of controlling factors and significant uncontrollable factors was expanded while constructing the map and returns for its correction. Construction of structure of cause-and-effect relations of factors of the situation, i.e., determination of cause-and-effect relations between factors with the assignment of signs of influences, was conducted based on expert knowledge of a problem situation the apartment building management company is in today.

To improve the quality of situation management in accordance with the declared goal it is necessary to know significant structural properties of this situation, and first — presence and sign of the influence of the so-called «conditionally independent» factors (controlled or uncontrolled by the management company) on the target factors.

Structural analysis of the cognitive map using the described technique can be used for structural verification tasks. For example, the structural analysis of the constructed cognitive map will help to single out conditionally independent factors for each target factor. Such analysis can show that the quality of housing services rendered by contractors (service) organizations depends on the following factors: the level of competition in the market of housing services, the level of competition in the market of MFB management services, the effectiveness of MC management system, the effectiveness of the quality control system of services by MFB premises owners [22, p. 172-176]. The first two of the given factors are uncontrollable, however, for the rest of the mentioned factors, MC can develop a complex of control actions and thereby improve or provide the required level of quality of housing and communal services, rendered by contracting (service) organizations. The presented material shows that the construction of the cognitive map and improvement of MC activity on many target factors depends on the actions of local, regional, and state management bodies. Besides the justification of the choice of controlling factors, the structural analysis of the cognitive map allows us to single out into a separate group the factors connected with the policy carried out at the state level in relation to the activities of MCs in the sphere of housing and communal services.

On the one hand, the state acts as a guarantor of the rights of citizens to ensure safe and comfortable conditions for their residence, and on the other hand, it imposes serious restrictions on the activities of management companies. For example, the exactingness of the legislation to non-payers of housing and communal services is the factor influencing the possibility of improvement of such target factor, as a percentage of payment of housing and communal services by owners of premises in the MFB. The choice of this factor relates to the fact that under the current legislation there are situations when citizens may not pay for services provided to them practically with impunity for years.

The use of cognitive models qualitatively improves the validity of management decisions in a complex and rapidly changing situation, saves the expert from «intuitive wandering», saves time on comprehension and interpretation of events occurring in the system. The essence of cognitive control is to help the expert develop the most effective control strategy based on his experience and, most importantly, on the ordered and verified knowledge about the control object. The scope of cognitive management is constantly expanding and will soon be able to find its application in the sphere of housing and communal services.

## CONCLUSIONS

The practice of the formation of cognitive maps and structural analysis of MCs activity in the sphere of housing and communal services shows that the use of the proposed approach can significantly simplify the overall structure of interaction of significant factors. Besides, it allows forming rather easily a possible spectrum of administrative decisions on increase of quality of works and coordination of interests of all subjects of management (or to be convinced in the impossibility of it) in relation to any developed problem situation. However, the formation and expert verification of the cognitive map of performance quality improvement of the AC is still a rather complicated procedure, which in case of revealing the problems or conflicts of interests of economic subjects should provide their diagnostics (i.e., identifying the causes of their occurrence) and, if necessary, return the cognitive map for correction.

Difficulties of formation and structural analysis of cognitive maps are also connected with many factors, which are considered by the manager of MC, the presence of different aspects of the real situation (for example, economic and psychological), considering different points of view of all interested economic subjects. In these (and several other cases) the diagnosis of problems or conflicts of interest of all economic subjects, found while debugging the cognitive map, and the search for solutions for its correction can be quite difficult. A typical example is dubious looping in the chain: «impact on the quality of housing and utility services (for instance, increased control by the owners of the premises), which entails an increase in the quality of housing and utility services, increased profit of the MC, impact on the quality of housing and utility services (by the MC) and, ultimately, a real improvement in the quality of housing and utility services». To solve such situations, it is necessary to further develop the methodology of forming cognitive maps, including in the housing and utility sector, to consider the interests of the economic actors functioning in it.

Also, of undoubted interest will be the systematization of the results of research on the practical application of cognitive maps to resolve conflicts between all economic actors in various problematic situations arising in the process of MC activities in the housing and utilities sector.

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### **ПІДВИЩЕННЯ ЯКОСТІ ПОСЛУГ КЕРУЮЧИХ КОМПАНІЙ ЖИТЛОВО-КОМУНАЛЬНОГО ГОСПОДАРСТВА УКРАЇНИ НА ОСНОВІ ЗАСТОСУВАННЯ МЕТОДОЛОГІЇ КОГНІТИВНОГО МОДЕЛЮВАННЯ**

Проблемна ситуація, яка склалася в житлово-комунальному господарстві України, добре відома. Вона значною мірою пов'язана з конфліктом цілей і зацікавлених сторін. Так, власники житлових помешкань переймаються зниженням якості житлово-комунальних послуг на фоні зростання тарифів. Постачальні та підрядні (обслуговуючі) організації незадовільні несучасним і неповним розрахунком за надання ресурсів і послуг, а держава стурбована зниженням доступності житлово-комунальних послуг (ЖКП) для населення України. У свою чергу, управляючі компанії (УК) вважають, що їхні інтереси ущемляються і державою, і органами місцевого самоврядування. Особливо незадоволеність відчують управляючі, які якісно виконують договірні зобов'язання перед постачальними, підрядними організаціями і власниками житлових приміщень, але, попри це, є постійним об'єктом критики.

У сучасних умовах держава не може ігнорувати реформування сфери ЖКХ. Державна політика повинна бути орієнтована на реалізацію економічних інтересів усіх економічних суб'єктів сфери ЖКГ за допомогою взаємовигідних економічних умов на всіх рівнях взаємодії між ними, а саме: у процесі надання, розподілу, обміну та споживання всіх видів ЖКП з метою задоволення постійно зростаючих запитів населення.

**Ключові слова:** теоретико-ігровий підхід, когнітивне моделювання, реформування ЖКГ, якість послуг, компанія, що управляє, управлінням багатоквартирним будинком

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