

# Evaluation of the Efficiency of the Housing and Utilities Sector and Management of its Investment Framework in Conditions of Authorities Decentralization

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Received 15 September 2021; Revised 12 November 2021; Accepted 21 December 2021

## Abstract

The paper suggests the methodological approaches to evaluation of the efficiency of the housing and utilities sector's (HUS) functional domain for a region (territory, consolidated territorial community) that can be used to make adjusting decisions in the management of the HUS investment framework. The existing slight imbalances of the HUS development efficiency in urban settlements among Ukrainian regions are revealed. The paper proves the fact that the suggested methodological approaches can be used to carry out the comparative evaluation of the functioning efficiency of the housing and utilities sector for certain agglomerations and consolidated territorial communities in order to define main vectors of the investment policy of agglomerations and territorial communities and priority directions of infrastructure development and services range optimization. Based on the ABC analysis, the investment sources of the HUS development are allocated. The ranging of projects and directions for securing the modernization of HUS in urban agglomerations according to the ABC analysis principle is suggested. Based on foreign experience in utility management, the paper generalizes that most countries vastly attract private business to management and investment in certain HUS areas, thus contributing to the release of local budgets' investment resources to implement larger projects in the sector. The paper recommends introducing and improving a set of alternative forms of funding successfully used in the countries with the developed economy to attract investment to the development of the HUS areas (including the local territorial projects) and modernization of their infrastructure, namely leasing, corporatization, project funding, forfeiting, debt financing, concessional investment, mixed funding, etc.

**Keywords:** Decentralization; Housing and Utilities Sector; Efficiency Evaluation; Investment Framework; Management.

## 1. Introduction

Gradual implementation of the decentralization reform is one of the decisive directions for the transformation of the system of national economy management in Ukraine. It stipulates the redistribution of competences, financial flows, and resources between the management levels, reformatting the administrative structure of territories, and shifting responsibility for their development to local governments. The strategic goal of the reform is to generate the optimal organization-administrative structure of the management of territories based on the duality of authorities and democracy that would boost their advanced economic development and infrastructure modernization, promote the improvement of living standards, and contribute to the efficient solution of communities' problems.

The creation of urban agglomerations is one of the strategic trends in reforming the administrative-territorial structure and, therefore, the management systems. They

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allow combining the advantages of urban and peripheral areas and creating on this basis the conditions for financial-economic development, self-sufficiency of territories, and improvement of living standards through reduction of imbalances in rural and urban residents' access to quality social services.

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The Government has approved 23 perspective plans of forming the communities' territories in oblasts and is discussing the projects regarding the enlargement of administrative districts in the oblasts around the cities of the oblast significance. It creates certain preconditions for the forming of urban agglomerations. Yet, the process of forming the territorial communities with the cities of oblast significance as the administrative centers is very slow. In particular, as of 31 December 2019, there were 47 territorial communities with administrative centers in the cities of oblast significance, and 12 cities of oblast significance started the consolidation procedure.

The processes of decentralization and reforming of the

housing and utilities sector are closely related to each other because they stipulate the redistribution of competences and responsibilities, as well as resources necessary for the socio-economic development of territories and communities and securing the safe and comfortable living conditions for the population. Currently, there are the ongoing processes of development of the legal framework for the final designing of the country's administrative-territorial structure and forming of respective authorities.

Nowadays, there aren't any distinct legal foundations for forming and maintaining the functioning of urban agglomerations and clearly defined liabilities regarding the management of the housing and utilities sector's development in prospectively adjoining consolidated territorial communities (CTCs). Most issues related to the maintenance of efficient management of housing and utilities sector are subject to discussion at various levels of governance. However, taking into account the processes of reforms implementation in the sector, the search for optimal mechanisms of the sector management and securing the complete set of necessary services for the population regardless of the territory of residence are the urgent current tasks.

The development of new tools to evaluate the HUS functioning efficiency with the view to determine the misbalances of the HUS condition and development in the CTCs remains to be an important issue at current transformation stage of communities' and territories' development in Ukraine under the decentralization reform. It will provide an opportunity to secure the sustainable socio-economic development of the country and to detect the need for additional financial-economic support for the sector.

The selection of methodological approaches that contribute to the evaluation of the HUS functioning efficiency based on the analysis of phenomena and processes related to the housing and utilities sector is an important stage of elaboration of investment policy and programs of territorial and HUS development. It substantially expands the opportunities to carry out monitoring and make managerial decisions at the level of certain territorial communities in the context of securing the quality housing and utility services and raising the living standards.

The problems of HUS reforming, modernization, and development in Ukraine are addressed by many researchers. Ie. Balatskyi, V. Lavryk (2019) in their study analyze the financial links of housing and utility companies with budgets of various levels, including local budget, public target funds, monetary institutions, and insurance companies, which is the prerogative of the decentralization reform. Z. Siryk et al. (2020) examine this issue from two perspectives, namely in terms of decentralization and administrative-territorial reform. It helped the authors to detect the main problems in this domain in conditions of the establishment of territorial communities. The research of K. Patytska et al. (2021) is also considered from this perspective. It is focused on determining the financial aspects of the sector

development under authorities' decentralization and establishment of territorial communities. O. Pavlova et al. (2020, 2021) analyze socio-economic processes of the development of Ukraine and Poland and emphasize the absence of problems in the housing and utility sector in Poland because it was reformed and has acquired a completely new form. K. Pavlov considers the housing and utility sector when examining the development of the construction sector because these two sectors are interdependent (2018, 2019). The author also addresses the issue of housing and utility sector development in urban agglomerations in conditions of authorities' decentralization and determines the main priorities of investment attraction in the sector. The investment and logistic frameworks of the sector are the focus of studies of S. Minakova (2015), I. Kramarenko et al. (2020) and I. Kinash et al. (2019). The paper of Y. Mahortov and N. Telichko (2011) is important research as they address the problems of housing and utility sector operation and funding considering the directions of public social protection policy. The authors determine the ways of the sector development and reforming in conditions of social tension in the country and growing payments for housing and utility services.

A quite high level of interregional and interterritorial misbalances constitutes a gap in the functioning of the housing and utilities sector that is poorly researched and is not addressed by any of the mentioned authors. Securing equal access of the population of the agglomeration center and adjoining peripheral areas to qualitative housing and utility services, development of the single tariffs for the population of the entire territorial agglomeration, and elimination of misbalances in terms of the comfort of living are among the important effects of creating spatial territorial agglomerations. Taking this into account, it is quite essential to create the qualitative information framework and a set of methodological tools in terms of the conditions and functioning efficiency of all HUS domains at these territories.

The lack of the system of territories (regions) ranking by the coverage of the the population with the HUS services is another under-researched gap, in particular, such features as availability of water supply system, hot water supply, sewerage, centralized heating system, and gas supply in residential and non-residential premises.

Despite significant scientific and practical achievements, the financial condition of the companies of the housing and utility sector is unsatisfactory, limiting their opportunities for modernization, recovery, and construction of the housing and utility facilities and deteriorating the quality of services provided to the population.

Therefore, the paper aims to research the processes of housing and utility sector development, in particular the impact of the authorities' decentralization reform and the emergence of new opportunities for efficient operation.

## **2. Materials and Methods**

In order to detect the misbalances of the HUS condition

and development in the CTCs consolidated into urban agglomerations, the authors suggest the methodological approach that is based on the integral ranking of territories by the level of the HUS functioning efficiency and provision of the population at the territories of consolidated communities with services across the major functional areas: housing estate and its development, road infrastructure and municipal transport, housing and utility services, funeral services, etc. The ranking process is based on the additive approach to defining the level of correspondence of selected indicators of the condition of certain functional components to the reference (normative) value. It consists of the following stages:

1) Estimation of the correspondence of the system of indicators by a separate functional component (accessibility, quality of services, energy efficiency of infrastructure and equipment, availability of municipal transport, safety, etc.) to their reference value, including among the regions or in comparison with the cities of oblast significance in points by the formula:

- for the stimulants of the HUS development:

$$B_{I_p} = \left( I_p / I_{max} \right) \times 10 \quad (1)$$

- for the destimulants of the HUS development:

$$B_{I_p} = \left( I_{min} / I_p \right) \times 10 \quad (2)$$

where,  $B_{I_p}$  - the points of correspondence of the HUS indicator in a region (CTC) to the reference value ( $B_{I_p} \geq 10$ );

$I_p$  - indicator of the efficiency of the HUS functioning in the region (CTC);

$I_{min(max)}$  – minimum (maximum) or normative value of the indicator

2) The complex parameter of the efficiency of the HUS functional domain in a region (territory, CTC) is calculated as an average weighted total of its components:

$$K_p = \frac{1}{n} \sum_{i=1}^n B_{I_p} \quad (3)$$

where,  $K_p$  – the complex parameter of the condition of the HUS functional domain in a region;

$n$  – number of indicators included in the parameter.

Evaluation of the functioning efficiency of the housing and utilities sector should be combined with or rather continued with the determination of sources of investment framework and their efficient distribution between certain projects on the HUS modernization. Therefore, the synergy effect of methodological approaches suggested by us will be displayed in the forming of the management processes in the investment framework of the housing and utilities sector based on the preliminary evaluation of its functioning efficiency.

The solution to the problems related to the development of new tools to evaluate the HUS functioning efficiency requires the expansion of the scientific research area in current conditions of transformation of communities' and territories' development in Ukraine.

However, the lack of unified criteria to carry out the complex evaluation of the HUS functioning efficiency reduces the level of controllability of the decentralization reform implementation and updates the scientific research

in this direction.

*The hypothesis of our research* is that application of suggested methodological approaches contributes to the analysis of the efficiency of the HUS functional domain in a region (territory, consolidated territorial community) that can be used to make adjusting decisions in the management of the HUS investment framework.

Ranking the territories (regions) by their coverage with the HUS services contributes to determining the territories (regions) with the highest level of the complex parameter of coverage with the HUS services and examining their best practices and opportunities to implement them at other territories. Availability of qualitative information framework contributes to outlining the strengths and weaknesses of the HUS in settlements, determining the level it corresponds to rates achieved in the cities of the oblast significance or project indicators provided in certain programs, defining the priority directions and volumes of necessary investment, and developing the optimal funding schemes.

The novelty of mathematical formulations lies in the fact that the research combines the additive properties of the integral complex indicator of the HUS functional domain condition in a region (territory) with the opportunities to evaluate the correspondence of the indicators by a separate functional component to their reference values based on the division of indicators into stimulants (positively impacting the HUS condition) and destimulants (negatively impacting the HUS condition).

### 3. Results and Discussion

Determining the sources of the investment framework and their efficient distribution between the projects on the HUS modernization is an important direction of investment framework of the housing and utilities sector's development in conditions of decentralization. These issues become especially relevant in conditions of the limited financial resources, namely the budget funds. Based on the conducted analysis and generalization of the results of domestic and foreign scientists' research on the financial and investment framework of the HUS functioning and development, we have systematized the main sources and directions of investment resource distribution on the principle of ABC analysis.

According to Vahovska M.Y., "the need to research the features and application area of the ABC analysis and to adapt its application opportunities to current conditions in Ukraine is obvious because this perspective methodology has a simple mathematical apparatus and extended opportunities of practical use" (2007). ABC analysis is extensively used in business and logistics. It allows to:

- determine the criteria to evaluate each group of objects;
- group the analyzed objects by the level of the highest economic or social efficiency;
- determine the efficiency of the same object of analysis in the context of various management tasks.

According to the classical theory of the ABC analysis, all objects under research are classified by the criteria of

impact on the final result. In particular, it is argued that 15% of analyzed objects or processes define 65% of the result, 20% impact the 20% of the result, while the rest 65% of less important objects or tasks lead to only 15% of the final result.

The use of the presented formulas will contribute to determining the level of correspondence of the HUS facilities condition or efficiency of some areas in the regions by the 10-point scale. Based on the results of conducted evaluations, the regions can be ranked by the indicators or complex parameters of the condition of the HUS functional domains. Moreover, the priorities of investment policy in the sector and efficiency of

modernization processes can be determined.

Improving the dwelling comfort is an important direction of housing policy and HUS reform that in current understanding stipulates the availability of minimum basic conveniences – hot water, water pipe, and toilet inside the house, regular heat supply, and gas. Certainly, these conditions in large cities are provided almost completely, while in small towns and settlements, averagely 60-70% of houses have conveniences. Table 1 shows the parameters of municipal houses' equipment with basic conveniences and coverage with the HUS services across Ukrainian regions.

Table 1  
Share of equipped apartments in residential houses and non-residential buildings in urban areas in Ukrainian regions

Oblasts	Water pipe		Hot water supply		Sewerage		Central heating		Natural gas	
	2016	2019	2016	2019	2016	2019	2016	2019	2016	2019
Vinnyska	72.1	72.6	46.4	46.9	71.3	71.7	60.7	59.4	87.4	87.7
Volynska	78.0	78.5	58.1	59.7	77.0	77.4	64.7	64.1	81.3	81.7
Dnipropetrovska	76.4	75.8	55.8	55.4	75.1	74.5	76.7	76.5	90.0	89.9
Donetska	74.7	74.8	54.7	53.4	74.3	74.4	69.9	69.7	66.5	68.5
Zhytomyrska	62.8	62.7	49.6	49.6	62.3	62.2	57.1	56.8	85.2	85.0
Zakarpatska	79.0	79.2	50.5	50.6	79.0	79.2	63.0	61.8	86.0	86.6
Zaporizka	77.7	77.7	72.1	72.1	76.5	76.5	74.7	74.7	87.6	87.6
Ivano-Frankivska	73.7	74.4	62.7	63.3	73.7	74.4	59.0	56.8	93.3	93.1
Kyivska	82.1	82.0	64.2	60.3	80.8	80.7	76.5	76.0	89.3	87.4
Kirovohradska	66.8	67.2	48.2	48.1	66.6	66.7	62.3	61.6	96.5	96.7
Luhanska	68.9	69.1	45.8	45.8	68.6	68.8	59.3	58.6	71.1	70.6
Lvivska	89.1	90.5	76.6	82.9	89.0	90.5	56.7	57.2	92.2	94.0
Mykolayivska	71.5	71.1	66.2	65.8	71.3	71.0	73.7	73.4	89.1	88.6
Odeska	80.9	82.2	58.8	55.0	78.0	79.0	69.8	71.2	85.5	83.5
Poltavska	65.7	65.9	59.9	59.6	65.3	65.4	68.4	67.7	89.7	89.3
Rivnenska	74.5	74.3	51.2	49.5	74.4	74.2	71.1	69.5	68.7	68.7
Sumska	66.0	66.2	49.2	48.6	64.5	64.8	75.4	75.6	95.0	94.9
Ternopil'ska	82.5	82.3	70.9	68.2	81.8	81.6	69.9	68.1	97.1	95.0
Harkivska	79.4	79.3	72.0	71.7	79.0	78.9	90.8	90.2	90.0	89.7
Hersonska	80.9	80.8	54.4	49.3	73.5	73.6	64.3	63.3	90.4	89.1
Hmelnytska	72.8	75.5	58.6	58.3	70.9	73.8	65.3	66.1	93.8	94.0
Cherkaska	61.8	61.4	49.5	49.5	61.7	61.4	65.3	64.9	97.4	97.3
Chernivetska	59.7	60.3	47.8	47.7	59.6	60.0	53.6	52.4	94.8	94.2
Chernihivska	60.5	63.1	52.0	54.8	57.7	60.5	63.1	65.0	91.7	89.4
Kyiv	98.8	98.9	97.4	97.1	98.7	98.9	98.9	99.1	70.7	70.6

Source: calculated by the authors.

To determine the level of comfort of the housing stock and progress in this direction in the regions, we have conducted the comparative analysis and ranked the oblasts according to these conditions. Table 2 shows the results of the calculation of the HUS services accessibility level in Ukrainian regions across main services by Formula 1.

The analysis shows significant interregional asymmetries of the road transport sector development in Ukraine. In particular, the distance between the maximum and minimum rates across regions is over 90%. Kirovohradska oblast is among the leaders by the productivity level of the road transport enterprises (38.2 thous.t per road transport

enterprise). However, the rate is caused in the first place by the fewer enterprises in the sector compared to the other regions. Luhanska oblast has the lowest profitability and cargo turnover rates due to in the first place the occupation of a part of its territory and, on the other hand, the disruption of intersectoral and trade relations with Russia.

The analysis for 2016-2019 shows that residential houses in many regions replace centralized heating with domestic heating appliances. Lvivska, Ternopil'ska, Zakarpatska, and Kyivska oblasts are the leaders in the process.

Table 2

Comparative indicators of equipment of the housing stock in Ukrainian regions in 2016 and 2019, points

Oblasts	Water pipe, W		Hot water supply, H		Sewerage, S		Central heating, C		Natural gas, G	
	2016	2019	2016	2019	2016	2019	2016	2019	2016	2019
Vinnyska	7	7	5	5	7	7	6	6	9	9
Volynska	8	8	6	6	8	8	7	6	8	8
Dnipropetrovska	8	8	6	6	8	8	8	8	9	9
Donetska	8	8	6	5	8	8	7	7	7	7
Zhytomyrska	6	6	5	5	6	6	6	6	9	9
Zakarpatska	8	8	5	5	8	8	6	6	9	9
Zaporizka	8	8	7	7	8	8	8	8	9	9
Ivano-Frankivska	7	8	6	7	7	8	6	6	10	10
Kyivska	8	8	7	6	8	8	8	8	9	9
Kirovohradska	7	7	5	5	7	7	6	6	10	10
Luhanska	7	7	5	5	7	7	6	6	7	7
Lvivska	9	9	8	9	9	9	6	6	9	10
Mykolayivska	7	7	7	7	7	7	7	7	9	9
Odeska	8	8	6	6	8	8	7	7	9	9
Poltavska	7	7	6	6	7	7	7	7	9	9
Rivnenska	8	8	5	5	8	8	7	7	7	7
Sumska	7	7	5	5	7	7	8	8	10	10
Ternopil'ska	8	8	7	7	8	8	7	7	10	10
Harkivska	8	8	7	7	8	8	9	9	9	9
Herson'ska	8	8	6	5	7	7	7	6	9	9
Hmelnytska	7	8	6	6	7	7	7	7	10	10
Cherkaska	6	6	5	5	6	6	7	7	10	10
Chernivetska	6	6	5	5	6	6	5	5	10	10
Chernihiv'ska	6	6	5	6	6	6	6	7	9	9
Kyiv	10	10	10	10	10	10	10	10	7	7

Source: calculated by the authors.

Based on the data from Table 1, the complex parameter of city residents' accessibility to the entire package of HUS services in the regions can be calculated. It is measured in points using the modified formula 2:

$$K = 0,2W + 0,2H + 0,2S + 0,2C + 0,2G \quad (4)$$

where  $K$  - complex parameter of provision with HUS services;

W – provision of residential and non-residential buildings with water pipe;

H – provision with hot water;

S – equipment of the housing stock with sewerage;

C – provision with centralized heating;

G – gas provision to residents.

According to the calculations, Ukrainian regions are ranked by the complex parameter of city residents' accessibility to the HUS services in 2016 and 2019 (Table 3).

Obviously, Kyiv and the regions where the large industrial centers are located are the leaders. They are Harkiv'ska, Lviv'ska, Kyiv'ska, Zaporizka, Ternopil'ska oblasts, etc. However, it is worth mentioning that the gap between the level the residents are provided with the HUS services by the complex parameter in the cities is rather small and constitutes 3.1 points. In 2016-2019, the rankings didn't change much (Table 3)

The analysis shows that there aren't substantial imbalances in the efficiency of HUS development in urban settlements among Ukrainian regions. Therefore, it is more reasonable to use the suggested methodological approaches to compare the functioning efficiency of the housing and utilities sector in agglomerations or consolidated territorial communities. In such a way, the main vectors of the investment policy of agglomerations and territorial communities and the priority directions of infrastructure development and services range optimization can be determined.

Considering the HUS specifics, namely the fact that implementation of separate projects is not efficient and is directed at securing, in the first place, the social effect and the distant economic effect (improvement of investment climate, boosting the processes of natural resources reproduction, raising the business activity in the regions), the state should be the main source of investment in these industries and their infrastructure. Based on ABC analysis, the sources of investment in the HUS development should be distributed by the following criteria:

1) The scales of impact on the regions' socio-economic development and maintaining their economic security. According to these criteria, the modernization projects can have:

- regional (interregional) effect: development of transport and logistic infrastructure; modernization of energy, heat, water supply system, and sewerage, etc.;
- territorial effect: development of municipal and suburban transport, waste management; landscaping; repairs and modernization of streets and roads in the cities and other settlements;
- local effect: introduction of energy-saving technology in a residential estate, maintenance of outdoor territories,

provision of the HUS services, etc.

2) The economic effect that can be defined in economic categories like profits, efficiency, payback period, dividends, etc.

Based on these criteria, the ranking of projects and directions of investment framework of the HUS modernization in urban agglomerations according to ABC analysis is suggested (Fig. 1).

Table 3  
Regions ranked by the level of urban residents' provision with the HUS services

Oblasts	2016	2019
Vinnitska	6.9	6.9
Volynska	7.3	7.4
Dnipropetrovska	7.6	7.6
Donetska	6.9	6.9
Zhytomyrska	6.5	6.4
Zakarpatska	7.3	7.3
Zaporizka	7.9	7.9
Ivano-Frankivska	7.4	7.4
Kyivska	8.0	7.9
Kirovohradska	6.9	6.9
Luhanska	6.4	6.4
Lvivska	8.2	8.5
Mykolayivska	7.6	7.5
Odeska	7.6	7.5
Poltavska	7.1	7.1
Rivnenska	6.9	6.8
Sumska	7.1	7.1
Ternopil'ska	8.2	8.0
Harkivska	8.4	8.3
Hersonska	7.4	7.2
Hmelnytska	7.4	7.5
Cherkaska	6.8	6.8
Chernivetska	6.4	6.4
Chernihivska	6.6	6.8
Kyiv	9.5	9.5

Current HUS reforming is directed at securing the self-sufficiency of most entities of services provision with an opportunity to earn profits from their functioning that can be reinvested in the modernization of subordinate HUS objects. Thus, the projects of category B account for 20% of all projects and can be both profit-making and non-profit for investors. Therefore, some share of projects should be funded from regional budgets and budgets of territorial communities and grants of international organizations. Mixed funding is also possible. In turn, the projects that can bring profits in the future can involve the funds of domestic and foreign investors based on public-private partnership, leasing, or corporatization. Division by the ABC categories and percent in terms of project implementation is conditional, yet in general, it corresponds to the peculiarities of funding of the housing and utilities sector in European countries.

Examining the foreign experience in utilities management generates the conclusion that most countries vastly attract private business to management and investment in certain HUS areas, thus contributing to the release of local

budgets' investment resources to implement larger projects in the sector. Namely, Chanhli V. S. outlines the following areas of private business involved in the management of housing and utilities sector in the developed countries:

- organization and exploitation of the housing stock (Austria, Belgium, Great Britain, the Netherlands, the USA, Sweden, the Czech Republic);
- landscaping, cleaning (Austria, Belgium, Great Britain, Canada, Germany, the USA);
- household services: repair services, arrangement of outdoor territories, collection, disposal, and processing of household wastes (Austria, Great Britain, Canada, Germany, the USA, France, Sweden, the Czech Republic);
- road repairs and maintenance (Austria, Belgium, Great Britain, Italy, the USA, France, countries of Latin America);
- transport services (Austria, Great Britain, the USA, France, Sweden)” (Chanhli, 2016).

We share the point of view of the authors of the



Directions of Improvement of the Mechanism of the Housing and Utilities Sector Funding in Ukraine that the role of municipal-private partnership grows in conditions of decentralization, contributing to balancing the state, local, and private interests in the HUS funding area: “in this case, the municipalities cooperate with business entities and receive the opportunity to attract private investment by expanding the boundaries of co-funding the projects on modernization of municipal facilities. Both rental of municipal property at disposal of municipalities

and seasonal renting of business entities’ property (tractors, winter service vehicles) that is possible only in case of the respective legal framework can be the main forms of municipal-private partnership. Participation of business structures in the equity of the HUS companies based on their corporatization is another form of municipal-private partnership that creates conditions for the development of competition in the sector and leads to improvement of the quality of utility services” (Parubets et al., 2017).

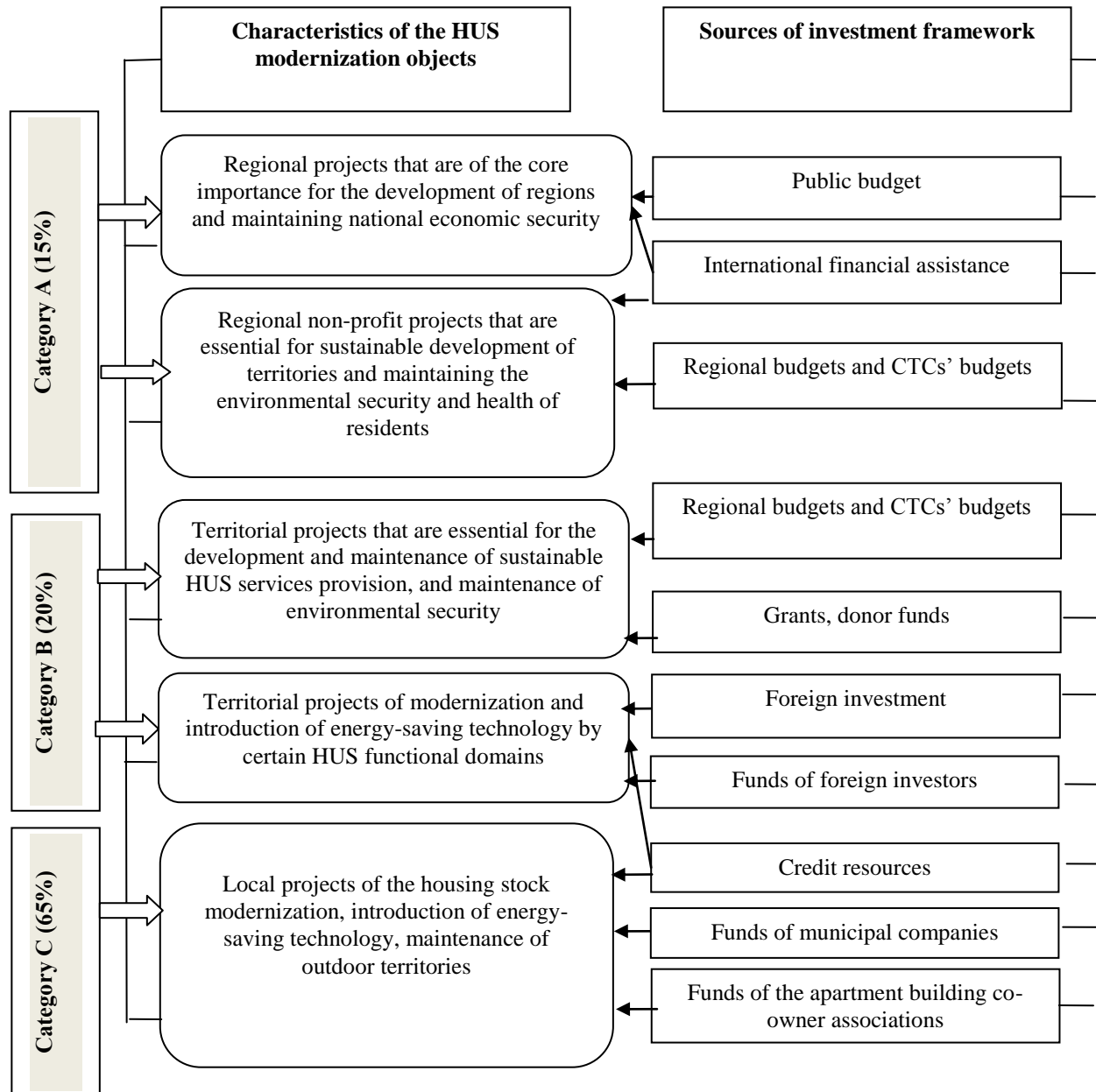


Fig. 1. Sources and directions of investment in the projects of the HUS modernization in urban agglomerations.

Three alternative models of municipal-private partnership successfully used in the practice of the developed countries can be used for further development of the housing and utilities sector within the territorial units of Ukraine:

1) corporatization of municipal enterprises with the partial sale of equities to the private sector while keeping the

controlling interest by municipal authorities. The model is peculiar to the companies in the energy and gas sector. It allows attracting private investment to the development and modernization of companies, on the one hand, and controlling the market of energy services to guarantee the cities’ energy safety, on the other hand.

2) full privatization of a corporatized municipal enterprise

based on the sale of all equities or controlling interest to a private investor. The model is used for the HUS companies that provide specialized services to the population, including household waste management, landscaping, cleaning, funeral services, certain routes of municipal transport, etc. The control over the quality of services is carried out based on making agreements and contracts between municipal authorities and joint-stock company's management bodies.

3) attracting the private investor to the management of fixed assets of municipal enterprises (including investment) based on concession agreements and lease on condition of keeping their municipal ownership.

It is worth mentioning that the HUS peculiarity is that it combines many functioning directions aimed at providing the population with basic services and comfort of residence, namely: construction, development and maintenance of the housing stock, roads condition and equipment in settlements, providing residents with water supply and sewerage services, heat supply, energy supply, maintenance of outdoor territories, organization of municipal transport, funeral services, etc. The level of provision of urban agglomerations with these services and their proper organization require a sufficient level of funding to support current conditions and investment resources for the modernization of municipal infrastructure facilities. To secure proper distribution of funds, the functioning efficiency of the housing and utilities sector in such agglomerations should be constantly monitored because most municipal companies are loss-making, preventing the accumulation of some share of profits and the investment in modernization projects at one's own expense. There is a need to diversify the sources of investment in HUS development and to search for optimal options of the transformation of management and ownership organizational forms and for mechanisms of innovation-oriented investment attraction to the sector using new opportunities emerging in the process of reforming a territory's administrative structure or the sector itself.

We agree with the opinion of Dubas A. O. and Novikova L.A. that due to the loss-making condition of the HUS companies, high level of fixed assets depreciation, and insufficient funding of projects on the sector modernization from public and regional budgets, "the traditional sources of funding to restore the financial-economic condition are not reasonable, while the use of investment capital is one of the possible options" (Dubas and Novikova, 2013). However, the diversification of sources of investment attraction for the HUS development at current stage faces the range of obstacles, including:

- transitional period of the process of administrative-territorial structure's transformation accompanied by undetermined management entities, competences, and subordinate territories;
- inadequate mechanisms of interregional cooperation in terms of implementation of joint investment projects;
- poor legal and organizational maintenance of public-private and municipal-private partnership in the HUS;
- delayed processes of denationalization, privatization,

and establishment of the apartment building co-owner associations.

All these factors create unstable and, to some extent, a turbulent environment that prevents efficient prognosis of project implementation and respective economic return.

Of course, in current conditions, the CTCs' income and funds transferred from the public budget in the form of special subsidies and grants are the main sources of funding of territorial communities' development. However, creation of special investment funds, introduction of changes in the tax policy to stimulate the participation of private sector in the investment projects and programs of the HUS development, forming of efficient and transparent tariff policy to secure the unsubsidized operation of companies, and optimization of mechanisms to subsidize and restructure the accounts payable are among main directions of reforming the mechanism of managing the process of investing in modernization of the housing and utilities services.

The need to form methodological approaches that would contribute to determining the HUS functioning efficiency in conditions of decentralization and revealing territorial misbalances of residents' provision with utilities at the moment of evaluation in order to efficiently distribute the HUS funding sources is obvious.

#### **4. Conclusion**

The problems of efficient introduction of reforms in the housing and utilities sector in conditions of transformation of the socio-economic domain in Ukraine remain to be among the most controversial ones and require a strategic approach to their solution. The HUS efficiency is determined by the condition and level of the use of available capacity, the balance of supply-demand for services and their quality, and correspondence of the sector development to main priorities of socio-economic transitions in the country.

To solve these problems and overcome the debating points, we suggest improvement of methodological approaches to evaluation of the HUS functioning efficiency as a tool to manage the investment framework of the housing and utilities sector's development based on the integrated ranking of territories by the level of residents' provision with utilities at the territories of consolidated communities across main functional areas: water pipe, hot water supply, sewerage, central heating, and natural gas (Fig.1 and Fig.2 show the ranking results). The analysis of the data represented in Tables 1-2 shows that, currently, there aren't substantial misbalances in access to the HUS services in urban settlements among Ukrainian regions. Yet, the suggested methodological approaches will be useful in the process of comparing the functional efficiency of the housing and utilities sector in the cities that are bound to be the centers of urban agglomerations and adjoining consolidated territorial communities. It will contribute to determining the main vectors of investment policy in agglomerations and priority directions of infrastructure development and service range optimization. Moreover, the suggested



methodological approaches can be used for a larger set of housing and utilities sector parameters.

In general, securing the self-sufficiency of most entities providing services with an opportunity to earn profits from their functioning that can be reinvested in the modernization of subordinate HUS objects is the main vector of the HUS reforming. To attract investment to HUS development (including the local territorial projects) and modernize infrastructure that can bring economic effect in the future, a set of alternative forms of funding that are successfully used in the countries with developed economy should be introduced and improved, namely leasing, corporatization, project funding, forfeiting, debt financing, concessional investment, and mixed funding. Therefore, the viability of the HUS modernization in urban agglomerations and territorial communities in the context of their gradual transition to the model of sustainable development requires, in the first place, the development of efficient organizational-managerial, administrative, and financial mechanisms of projects selection based on determining their significance for future socio-economic and environmental effects, scales of their impact on agglomerations' socio-economic development, and maintenance of national security.

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### This article can be cited:

Popadynets, N., Irtysheva, I., Stehnei, M., Levkovska, L., Topchiy, A. (2022). Evaluation of the Efficiency of the Housing and Utilities Sector and Management of its Investment Framework in Conditions of Authorities Decentralization. *Journal of Optimization in Industrial Engineering*, 15(1), 281-289.

[http://www.qjie.ir/article\\_687281.html](http://www.qjie.ir/article_687281.html)  
DOI: 10.22094/joie.2021.1945380.1911

