Involving the Public in the Assessment of Community Real Estate Property

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The paper argues for the need to involve the public in decision-making on abandoned community real estate property in small communities with limited financial resources. This can be achieved by the giving the public the opportunity to express their opinion via a survey. For this purpose, a specific approach was developed which involves conducting a survey and evaluating the results. A particular weighting factor is given for each chosen rank of indicator. A system of 50 indicators for five different groups (interior, exterior, environment, historical and cultural value, and finance) is proposed. The indicators are divided into 38 incentives and 12 disincentives, in accordance with their impact on the final real estate property assessment. An example of an assessment

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is given and it is proposed that the survey results be categorised and analysed based on the age of the respondents.

Keywords: assessment, survey, community, public opinion, real estate management

1. Introduction

Ukraine's integration into the European Union requires a certain degree of economic, social, and institutional development.[2] A new quality of life in Ukraine begins with the smallest territorial unit – a united territorial community. It is a place where young people can discover what education to get and obtain their first professional experience in state power and local self-government. After all, a developed community is one of comfortable living, quality medicine and education, small and medium-sized businesses that run effectively, and members who have achieved the necessary level of responsibility for one's own life and well-being.

In 2015, local self-government reform was launched in Ukraine, which later became known as the decentralisation reform. Its essence lay in the transfer of power to resolve local affairs at the community's primary level of self-government. Authority, resources, and responsibility for decision-making efficiency were simultaneously transferred to minor local self-government subjects. For all communities to be financially, professionally, and institutionally capable of performing their functions and tasks, they needed to have particular demographic, territorial, and industrial potential. Therefore, in 2015–2019, there was a voluntary unification of small settlements around a more robust centre, and thus the united territorial community was created (Dmytryshyn et al., 2021).

The Constitution of Ukraine, as its basic fundamental law, defines the term territorial community as "the inhabitants of a village (or the voluntary association in a rural community of the inhabitants of several villages), settlements, and cities". Therefore, the smallest territorial unit of compact human habitation is a territorial community. At the beginning of the decentralisation reform, in 2015, the Ukrainian Parliament – the *Verkhovna Rada* of Ukraine – adopted the Law of Ukraine No. 157-VIII on Voluntary As-

[1] The results were obtained as part of the research carried out within the project *The role of construction projects in regional development* 0120U104086.

sociation of Territorial Communities. This normative legal act determined the procedure for uniting adjacent territorial communities of villages, settlements, and cities. This led to appearance of the first united territorial communities, which were consolidated entities consisting of several settlements. In 2020, the process of such voluntary unification was completed; the Government of Ukraine approved the administrative centres of 1,470 united territorial communities according to the Law of Ukraine No. 562-IX on Amendments to Certain Laws of Ukraine Concerning the Definition of Territories and Administrative Centres of Territorial Communities.

The creation of united territorial communities opened up new opportunities for the inhabitants of specific territories. Not only do they have greater financial potential, broader powers, and a new name, they also have the ability to make crucial decisions independently. When the average citizen is convinced that their opinion is worthless, that the decision will be determined centrally, this does not stimulate activity but instead fosters indifference. In fact, in an ongoing crisis, against the background of hostilities on state territory, increasing the activity of the population is essential. After all, caring, proactive, and responsible inhabitants can carry out local government tasks more effectively, control the government, and develop their locality, region, and state. Public involvement in decision-making and the ability to express one's opinion are thus essential manifestations of democracy and ways to raise national consciousness.

Communities frequently experience the issue of abandoned, unnecessary real estate property that is not currently in use. Such places can spoil the appearance of territories, become centres of crime, and carry the risk of disasters. However, putting such real estate in order requires considerable resources or may even seem unaffordable with only community resources. Just appraising the property is an expense, but the community can come to the rescue (Danyliuk & Dmytryshyn, 2021). At first glance, a nearly ruined building that disfigures the landscape may seem completely redundant. Nevertheless, it may be associated with particular local traditions or historical events. It may have architectural, classic, or cultural value. The sale, demolition, or reconstruction of such a facility can lead to local discontent or public protests and riots. Ukrainians may react sharply to the potential betrayal of their memory and interests. In fact, such a reaction is very likely against the background of total distrust of the government's actions for decades. Hence, in order to avoid the trap of misinterpreting the significance a particular piece of real estate holds for the community, we propose that residents conduct an expert assessment of the property in question.

The subject of this study is municipal real estate property management. This paper aims to develop a way of investigating local community opinion when it comes to decision-making regarding abandoned municipal real estate property in the cheapest and easiest manner, suitable even for small villages. Simultaneously, this will increase the reliability of the assessment as support in decision-making, and its implementation could involve more people in community life and increase their interest in general. Methodologically, the research is based on questionnaires and the comparative method as well as an analytical and systematic approach. The novelty of this paper lies in the substantiation of an approach to conducting a community opinion detection survey on the future use of local real estate property and evaluating its results. The results may be of interest to other researchers, community leaders, local activists, and municipal project managers.

2. Literature Review

Real estate property valuation has long been an important topic among scientists all over the world. Fundamental changes in technology, economy, and society have impacted the real estate and construction industry in many countries. Pfnür and Wagner (2020) have made an effort to explore how these changes exert pressure on existing business models to adapt, whilst also offering opportunities for further development in Germany. The authors discuss a model that attributes the transformation of the real estate industry to megatrends and tests it empirically by conducting a survey. To achieve better understanding and interpretation of real estate dynamics, which is a valuable tool for orienting and supporting urban planning strategies, de Toro and colleagues (2020) analysed in detail the real estate dynamics in the city of Naples: the integration of a multi-criteria decision analysis (MCDA) method and a geographical information system (GIS). The authors explore how analysing real estate dynamics can be helpful in decision-making due to the tasks of real estate management and appraising the territory around the property.

Because there has been immense interest over the past decades in the theory and practice of real estate valuation, Farkas and Porumb (2020) have developed a new valuation method as a combination of multi-objective optimisation (MOO) and multi-criteria decision analysis (MCDA) for a real estate sale comparison approach. The proposed model enables

the appraiser to evaluate the characteristics of a property on those scales of measurement to which they de facto belong. Trachenko and colleagues (2020) have developed a decision-making system in quality management systems; the authors indicated effective methods, measures, methodology, and other quality management tools in the example of quality management. Their results help researchers to find the best practical tools suitable for the field of study. Crosby, Devaney, and Wyatt (2020) have investigated market practices regarding performance metrics and return expectations both for residential and commercial real estate development in the UK, exploring what is considered to be appropriate return and how this varies according to the type and duration of the scheme and the method of appraisal used. The authors underline the uncertainty and financial risks associated with development as an activity. At the same time, DeLisle, Never, and Grissom (2020) demonstrate how big data can support inductive reasoning which can lead to enhanced real estate decisions; the researchers illustrate how the use of data can improve decision-making.

Mantogiannis and Katsigiannis (2020) claim that any investment decisions in private real estate require the consideration of several qualitative and quantitative criteria. Furthermore, they underline the possibility of different or even conflicting interests among the participating stakeholders. Because of this, the authors propose a few groups of selection criteria be used. McAllister (2020) provides an initial analysis and insights into operational management models for real estate investment portfolios in the contemporary real estate investment management landscape. He distinguishes between critical tasks in real estate operational management categorised by investment managers. Finally, Geltner, Kumar, and Van de Minne (2020) emphasize that investments in real estate development are riskier than investments in stabilised property assets. It is thus better to consider as many factors as possible to efficiently decide on a real estate property.

Basic-level local communities take part in Ukrainian socio-economic development and the rise of democratic principles. After the decentralisation reform took place, local communities gained a chance to improve their property management due to broader powers, resources, and responsibility. The more effective management in the community is, the higher its potential for development and opportunities. In this context, Babosov and Zelenkov (2020) analyse the decentralisation reform in Ukraine and its role in the sustainable development of regions and newly created united territorial communities. To develop this idea, Slozanska, Horishna, and Romanovska (2020) emphasize that the reorganisation of social welfare

due to the Ukrainian decentralisation reform calls for the development and implementation of new practice models of service delivery for community social work. Gavkalova and colleagues (2020) study organisational support for the development of territorial communities and identify specific principles and factors for community success. Lastly, Halhash and colleagues (2020) show that with the beginning of the reform in Ukraine, the processes involved citizen participation in managing the sustainable development of regions. The authors emphasize that recently citizen participation has become more active, so society has grown more caring.

The main changes for the better in local communities depend primarily on their residents. The population of a territory is both the object and the subject of any reform, as the people themselves are both the engines of change and the reason changes are needed. That is why the opinion of the community was often sought and investigated in further scientific research. Ellery and colleagues (2018) use community members to collect observational data; the authors show how to prepare community members for participation in research. Li and colleagues (2019) detect the opinion of the community and its leader based on text information and network topology in a cloud environment; the authors underline the social context, referring to the public. Researchers emphasize that in the current conditions social networks have become the most prominent information portals. In this context, Danyliuk, Dmaytryshyn, and Goran (2021) have investigated the current realities of informatisation in Ukraine regarding the pace at which information and communication services are being disseminated, the number of households with internet access, and salaries in the industry.

Đurman (2021) discusses participant e-consultations in Croatia. As citizens' preferences grow more diverse, public authorities and administrative organisations must become more attentive to public opinion. Other researchers have investigated community opinion on specific questions, like water service provision (Sugiyono & Dewancker, 2020), land use (Brown & Eckold, 2020), and even the future of a country as a whole (Chambers et al., 2019).

3. Evaluation

Public real estate assessment has many benefits in addition to those mentioned above. It does not imply high financial costs because it is not nec-

essary to pay qualified experts, nor does it require much time or effort on part of the local authority. Moreover, it allows similar properties to be compared and facilitates community support in a specific decision.

Ordinary residents of the community are offered as direct experts, whose conclusion cannot be claimed to be completely objective and rational, as they are not professional appraisers. However, the primary purpose of the assessment will be to determine public opinion, which does not have to be professional.

The essence of the proposed assessment lies in the task of the respondent-expert, which is to take two actions for each of the proposed indicators:

1. Rank indicators according to the degree of their significance in the assessment of the property.
2. Assess the current state of the indicator on a scale of 1 to 10.

The respondent-expert opens a questionnaire with a list of indicators arranged in five groups. First, they are asked to rank each indicator appropriately, according to its role in the overall assessment. If the respondent-expert sees an indicator as the most important, it will be assigned a rank of 1; however, if they see an indicator as less than vital, it will be assigned a rank of 2, and so on. On the other hand, if the respondent believes that the indicators are equally important, several can be assigned the same rank.

To improve the quality of the study, it is advisable to carry out explanatory work on the tasks, the content of the survey, and the meaning of the indicators at first.

A simple and effective way of conducting a survey of this type is to use Google Forms, as this tool allows the respondents to answer the questions in convenient electronic form. The form can be posted on a local government website and sent by email to local activists. The respondent-expert will remain anonymous, but it is possible to learn additional information about the person who filled out the questionnaire, for instance:

1. the age of the respondent: (youth under 25, working population aged 26 to 60, retirees over 60)
2. field of work (student, employee, retiree, scientist, entrepreneur, and the like)
3. area of residence.

Another advantage of Google Forms is that the respondent-expert may skip questions they cannot or do not want to answer (or are hesitant about). Then the desire to fill out the questionnaire will encourage the person to do some research, which will provide an acceptable answer and simultaneously

enrich their intellectual capital. This idea may also be successful because it appeals to people's natural curiosity regarding tests and questionnaires, which makes it an effective rather than intrusive way of polling.

4. Methodology and Results

The idea is to ask a community resident to assess the abandoned real estate property across five groups of indicators: interior, exterior, environment, historical and cultural value, and finance (Table 1, Appendix 1).

The first group of indicators under the general term *interior* describe the internal condition of the building:

1. Area is the amount of free space inside the building
2. Sanitary condition is the presence or absence of fungi, mould, or other harmful substances
3. Moral wear is the interior inconsistency of the building with modern technology and needs
4. Physical wear is the state of repair
5. Reconstruction possibility is the presence or absence of load-bearing walls and partitions, their location inside the building, and ease of redevelopment
6. Uniqueness is the degree of uniqueness of the interior
7. Energy saving is the ability to retain heat or cold
8. Daylight access is the illumination of the rooms and the number and size of the windows
9. Functionality is the ability to exploit the building for various useful purposes
10. Accessibility is the ability of the building to be used by children and people with special needs.

Two indicators in this group, physical wear (A_3) and moral wear (A_4), have a negative impact; if the value of this indicator is increased in the dynamics, they will act as disincentives. On the other hand, the other indicators are directly proportional to the complex assessment; therefore, they positively impact the real estate value and act as incentives in the dynamics.

The group of interior indicators also has a specific feature. Often abandoned buildings can be closed to visitors and not everyone can assess the interior, i.e., the state of repairs and communications. Therefore, it is

advisable to present additional photos and videos along with the questionnaire, which will help respondents draw the proper conclusion.

The second group of indicators, referred to as exterior, describe the external condition of the building:

1. Storeys is the height of the building and the number of floors
2. Physical wear is the state of outside repair
3. Moral wear is compliance with the requirements of modernity from the outside
4. Reconstruction possibility is the potential change of height, the number of windows, and other capital repairs
5. Seismic resilience is the ability to withstand earthquakes or other natural disasters
6. External attractiveness is the subjective perception of the attractiveness of the building
7. Utility is the ability to exploit the building for a practical purpose
8. Reliability is the state of the building's monolithic frame, foundation, and roof
9. Architecture and design is the originality of construction and decor
10. Possibility of division is the potential deconstruction of the building, including the possibility of partial demolition.

Some indicators in the second group such as physical wear (B_2), moral wear (B_3), and reconstruction possibility (B_4) are similar to the indicators in group A, but in this case they are related to the appearance of the building. Similarly, indicators of physical and moral wear have a negative impact on the overall final assessment.

The third group of indicators, environment, are devoted to the study of the area around the building:

1. Landscape is the scenery nearby, the geographical environment
2. Land area is the size of the territory on which the building is located
3. Distance from communications is the distance from the road, water supply, electricity, and the like
4. Analogue availability is the presence in the community of another similar or identical building
5. Risk of destruction is the probability of damage under the influence of natural factors
6. Soil quality is the composition of the soil and its suitability for agriculture

7. Climatic conditions refer to the climate of the territory, humidity, windiness, and temperature range.
8. Urbanisation is the population density
9. Noise level is the placement of high noise objects next to the building
10. Harmony of location describes to what extent the building is complementary to nearby properties.

Five indicators in this group have a negative impact on the final assessment: distance from communications (C_3), analogue availability (C_4), risk of destruction (C_5), soil quality (C_6), and noise level (C_9). It should be noted that most of the indicators in this group have an indirect impact on the value of the real estate but affect its overall perception and understanding of value.

The fourth group, historical and cultural value, represent the role of the property in terms of history and culture:

1. Historical value is the historical importance of the building
2. Cultural value is the cultural importance of the building
3. Traditions is the existence of national customs associated with the building
4. Related negative events is a set of crimes, accidents, or negative aspects associated with the building
5. Recognition is the prominence of the building or its silhouette
6. Uniqueness in the region is the lack of similar buildings in the region
7. Photo and video attractiveness is the likelihood the building will be the object of a photo or video shoot
8. Period of construction is the importance of the historical time of construction
9. Public opinion is the general attitude of the community (according to the respondent-expert).
10. Cultural development is the potential contribution of the building to cultural development.

There is only one indicator that does not have a positive impact in this group: related negative events (D_4).

The fifth and last group relates to money, income, and expenses:

1. Investment attractiveness is the measure of investor interest
2. Potential payback is the ability to recoup invested resources

3. Potential profitability is the ability to obtain income from a productive use of the building
4. Financial infusion needs is the urgent necessity to invest financial resources in the building
5. Financial capacity of the community is the ability of the territory to meet their needs with their income
6. Maintenance costs refers to the resources necessary to maintain the building in its current state
7. Demand for real estate in the region is the popularity of real estate in the local market
8. Compliance with strategic goals is the functioning and role of the building in achieving long-term goals
9. Possibility of partial usage is the rational divisibility of the building
10. Grant potential is the ability to attract donor resources to the facility.

Two indicators have a negative impact on the value of the real estate in the fifth group: financial infusion needs (E_4) and maintenance costs (E_6). This group is also characterised by indicators describing the community in which the building is located as a whole.

As has been noted above, all the proposed indicators are divided into incentives (those that positively affect the final assessment) and disincentives (indicators that negatively impact the final assessment of the building).

The level of influence which incentive and disincentive indicators have on the total value of the building is given in Table 2 and Table 3 respectively. (Appendix 2). Survey results are evaluated in Appendix 3. Here is an example of the results of the expert assessment (Table 1). Google Forms allow survey results to be analysed and organised quickly and easily. In addition, the calculation of intermediate results and average values of individual indicators will allow "bottlenecks" to be identified in the survey results.

In general, the final assessment results can be summed up by arithmetically adding up the values of the score of the components (indicators with a negative impact will be subtracted). However, given the possibility of a situation in which a critical number of respondents will not indicate their response for each indicator, the total number of points will not be objectively informative. Thus, a preliminary calculation of the average value of each indicator in the group seems logical. Estimates that do not include a response for a specific indicator will impact the final result for only some

of the responses. Furthermore, calculating the average value will minimise extreme responses (when the respondent assigns the maximum or minimum value to all indicators).

Table 1: *An example of expert assessment results*

Number	Type									
	A		*B*		*C*		*D*		*E*	
	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value
1	0.7	7	0.8	6	0.2	4	1	1	1	7
2	0.5	3	0.4	5	0.6	2	0.9	2	0.8	5
3	0.2	4	0.4	6	0.5	2	0.6	2	0.8	5
4	0.6	7	0.7	2	0.8	1	0.5	5	0.7	8
5	0.4	10	0.6	8	0.4	1	0.8	3	0.2	5
6	1	4	0.5	9	1	–	0.4	2	0.9	3
7	0.8	6	0.3	4	0.3	4	0.3	4	0.6	8
8	0.3	1	1	6	0.9	8	0.1	5	0.5	–
9	0.3	2	0.9	3	0.7	8	0.2	4	0.3	1
10	0.9	3	0.2	1	1	8	0.7	7	0.4	4
Total	3.12		3.66		1.96		2.2		2.53	
	13.47									

Source: Authors, based on calculations using Formulas (1)–(2) (Appendix 3).

The scores for disincentive indicators receive a minus sign.

Based on the chosen method of evaluating the survey results, let us determine the border values of potential results.

The minimum and maximum values of *FF* are –50 and 50 respectively. Next, the whole range is divided into five categories that reflect the corresponding levels of value of the building (Table 2):

1. Low
2. Below average
3. Average
4. Above average
5. High

Marginal results will probably be rare in the assessments because the respondent must maximally assess only incentives or disincentives to obtain

them. Because 12 disincentives and 38 incentives were identified, a positive value of at least relatively modest estimates can be assumed. However, if the average rating of a group of respondents is consistently negative, local authorities should consider demolition of the property. In this case, it may be more rational to consider an alternative use for the land once the building has been demolished. It may also be interesting to sell the property, in which case the buyer will meet the expenses associated with the demolition of the building.

Table 2: *The scale*

Number	1	2	3	4	5
Interval	[–50;0]	[0;10]	[10;20]	[20;30]	[30;50]

Source: Authors.

On the other hand, a significantly high value of the assessment (Category 5) will mean that the building is in excellent condition. Furthermore, it will reflect the individual opinions of respondents and signal the high value of the real estate for local people. If the number of questionnaires that record this result is significant (more than 10% of the respondents' answers), the property should be kept in the community.

Because the property is not in use at the valuation stage, it a priori cannot be in a suitable condition. After all, this would have logically led to its practical use in the past.

Most assessments are expected to be in groups 2–4, i.e. the range of numerical values [0;30], leading to an uneven distribution of assessment values and increased attention to these categories.

Category 2 – below average score. This category will include rather worn-out real estate, which will most often have no value. If it has no particular investment attractiveness (here, one can look more closely at the groups of indicators), then demolition may be a rational solution. It would also be logical to consider using the facility without significant investment (in its current state).

Category 3 – average score. If an object receives a rating that falls into this category on average, this indicates that it needs to be preserved. However, the cost of restoration or reconstruction can be quite high, in which case it is best to find a partner or investor willing to finance the real estate improvement. Examples of what may work are public–private partnerships, social investment, or grant funding.

Category 4 – above average. The inclusion of the abandoned property in this category will indicate a need for small investments in order to ensure the efficient operation of the building. However, at the same time, this property is essential and exciting to residents, who may even want to participate in co-financing the repair or invest their work in the building voluntarily. Furthermore, it is possible to sell buildings in this category profitably for social purposes.

As the number of experts interviewed increases, the assessment will become more complicated. After all, experts of different ages or occupations can give radically different assessments, which will be almost identical within the group. For instance, the elderly may associate fond memories of their youth with a building and their assessment will be higher because they will intuitively want to keep this positive. However, the same building may not have any elementary value for young people, if it looks very outdated and dilapidated. The calculation of the final score using the usual arithmetic mean formula will cause minor distortions of vision of the accurate result. Under these conditions, a weighted average must be used. To simplify the analysis, it seems rational to generalise not the direct results of the assessment themselves but to place the building into one of the five categories (low grade, grade below average, average grade, grade above average, and high grade).

It should be noted that the proposed approach allows respondents of different ages or professions to take part in the survey. Therefore, the researcher conducting the study may divide the responses into groups and examine the results for each group separately. At the same time, democratic principles of equality and non-discrimination do not allow us to differentiate between the weight of these results.

The results of a group of respondents-experts evaluating real estate community property are shown in Table 3.

Table 3: *Example of the calculation of the final score*

	1	2	3	4	5	Total
l_i	1	17	23	0	0	41
m_i	0	10	12	3	0	25
n_i	0	0	8	12	1	21
Total	1	27	43	15	1	87

Source: Authors.

Dividing respondents by age is not mandatory; rather, based on the community's current demographic and socio-economic situation, respondents can also form groups by occupation, place of residence, or other criteria.

Due to the calculation obtained by using formula 3 (Appendix 4), we can see that the final score of the evaluation lies in Category 2 – below average (see also Table 2). Considering the results, we can conclude that the building is probably worn-out, as it has received the minimum score in Category 2. However, the third group – the environmental indicators – gave the principal value to the total, so it would be helpful to analyse alternative ways of land use and consider demolishing the building. Until then, the building can be used in another way that does not need additional investments but can generate income or social benefit.

Google Forms allows the survey results to be analysed both in terms of indicators and in general. In addition, a detailed evaluation analysis will identify "bottlenecks" and issues relevant to the site. After all, no building can be unquestionably positive or, conversely, continuously harmful. If the appraised property is in a majorly dilapidated condition, harms the environment, or has a negative reputation among the locals, the appraisal result may be negative. However, as has been noted above, it is possible for the respondents to provide a comprehensive set of all minimum values' positive impact indicators and the maximum negative impact. In addition, it is advisable to pay attention to indicators that have a disincentive effect on the criterion of soil quality. If these are predominantly high and are combined with low incentive values, it would be advisable to consider demolishing the property. Clearing the territory will open up new opportunities to use the land for agricultural production. Moreover, in view of the growing global demand for food, such a decision may positively affect the community.

The result of a one-time assessment cannot be considered absolute. The effect of the scale will be substantial here. If several buildings are being examined with a view to plans for their future use, we can compare them and make the best decision. Given limited financial and human resources, it can be overly complicated for communities to take action on many sites at once. Assessments that are not currently prioritised can be re-evaluated after a while. This will allow dynamics of the perceived value to be analysed.In addition, very interesting results can be obtained by comparing the respondents' assessments based on their age or occupation. Retirees, for instance, may appreciate some buildings, while young people will have completely different priorities.

5. Discussion

The use of public opinion fixing, monitoring, and analysis has been a topic of studies since the mid-twentieth century. We can underline some works which significantly impact the area, such as Gallup (1944), Rokeach (1968), Page and Shapiro (1983), Marsh (1985), Price (1992), Welch (2002), Burstein (2003), Lippmann and Curtis (2017), and others. The authors investigate the essence of public opinion polls, their role, differences, and effects on public policy. Gallup (1944) created a complete guide to public opinion polls, widely used as a "white book" for modern polls. The impacts and effects of polls have been given much attention by Rokeach (1968), Page and Shapiro (1983), Burstein (2003), and Marsh (1985). As a result, public opinion polls have become a popular way to investigate public opinion on a range of topics in all spheres of life and science: Drews, Antal and Bergh (2018) have looked into economic growth; Drinkwater, Robbinson and Hart (2019) into ecology; and D'Andrea and colleagues (2019) into medicine and vaccination. Authors have investigated how the results of polls are reported in mass media (Welch, 2002), to evaluate poll trends (Nisbet & Myers, 2007), to model opinion polarisation (Chen et al. 2021), and to measure social media impact (Dong & Lian, 2021). Nevertheless, investigating public opinion has played a crucial role in public policy and administration as the closest to civil society.

Effective municipal property management is an essential task of local authorities around the world. After all, available property is a valuable resource that must be preserved and it is desirable to increase and develop its value. Moreover, in times of crisis, with the introduction of quarantine restrictions, curtailment of business activities, reduction of purchasing power and income, as well as limited tourist flows and local budget revenue, the use of available resources also represents a significant means of increasing financial capacity and community efficiency in general. In addition, real estate investments are often quite expensive, as are professional appraisals, which can prove a daunting task for poor and small communities. Instead, human resources are the key to the development of any territory. Moreover, all development is caused by the people and is done for the people.

One of the harrowing consequences of life in a post-communist state is paternalistic population sentiments, which can take decades to discard. People accustomed to over-regulation of the economy and social life expect the state to solve every problem they have. This reduces initiative, commitment to implementing new ideas, aspirations to change, and faith in progress.

Assessing existing community real estate is a way to achieve two crucial goals:

1. To evaluate the facility with limited funding
2. To increase the local population's interest in the life of the community.

An additional consequence of community site assessment is the ability to draw attention to the buildings in question because in order to complete the questionnaire responsibly, it is necessary to have at least a general idea of the building. This can encourage locals to do problem-solving work. If the internet does not provide the necessary answers, in small communities, contacts with the older generation, who may have some insider information about the building, will work effectively. The most persistent respondents will often find answers at the local library or archive, which will increase people's interest in the life of their community as well as their awareness.

Even if the survey does not lead to tough decisions, the population will still be more confident why real estate in their community is not currently being used. However, the property in question has specific characteristics, advantages and disadvantages, opportunities, and risks. At this stage, locals can provide unexpected ideas about the facility's usefulness or may even want to start a business themselves using the property under study. Moreover, this will contribute to the development of the settlement: from the growth of budget revenues and creation of new jobs to the promise of future opportunities. Even if a solution is not found immediately, if the community is informed about the situation, there are greater chances of finding a potential buyer or tenant from the locals' pools of contacts. As a result, the civic and socially responsible position of the locals, their intellectual capital, as well as participation in community affairs will be strengthened.

Decentralisation reform in Ukraine has opened up new opportunities for self-government and development of even small depressed territories. Having been awarded the requisite authority and funding, local people and opinion leaders have also taken responsibility for the future of their community, with many results beginning to depend directly on initiative, efforts, new ideas, and implementation.

Periodic economic crises, significant emigration rates, low standards of living, and citizen incomes have all repeatedly caused processes in the local economy to stagnate. Moreover, the curtailment of entrepreneurial activity and reduction of local budget revenues have contributed to the

neglect of many community facilities. Abandoned buildings reduce tourist attractiveness, can be dangerous for children, or be a hub for illegal activities. At the very least, such real estate represents an untapped opportunity and unrealised potential.

A small community does not always have enough resources to pay for the services of a professional real estate appraiser, to repair an abandoned building, or even to simply preserve and maintain its condition. This article proposes an affordable approach that can help local authorities make a balanced and effective decision about the future of a property whose situation is unclear. The article also establishes a need to involve the public in assessing the condition and prospects of the property in question. The advantage of this method is its low cost, relative ease of implementation, and the ability to increase the initiative and activity of the local population. Interested people will invest more effort and energy in their community, even regarding minor issues such as preserving existing property, sorting garbage, lobbying for their ideas to develop the territory, and others.

6. Conclusion

The study has allowed us to draw several conclusions. Many united territorial communities have faced the problem of maintaining and optimising abandoned real estate in the community. In order to decide on further action regarding such real estate, it is necessary to appraise it. However, for small communities with a shortage of financial resources, the services of a professional appraiser may be too expensive.

An alternative way to evaluate real estate in the community may be to involve the local population. Public participation in resolving community affairs is crucial when it comes to increasing the interest of residents in the life of their territory in particular and the effective development of civil society in general. At the initial stage citizens may engage in one-time participation; however, in the future a critical mass of caring locals will be formed who can bring forward new ideas and offer innovative solutions. Although most residents do not have the appropriate specialised education, they can see problems from the inside. Their practical experience will reveal what invited external experts cannot notice, or complex programmes and formulas cannot calculate.

Using Google Forms is a simple, inexpensive, and effective way of conducting local surveys. Seeking public opinion does not impose an obliga-

tion on decision makers, but it can help reach balanced decisions. Looking at the average score of many respondents in a particular category will add arguments to the final decision.

Comparing assessment results for similar buildings or carrying out assessments in consecutive periods may open up additional opportunities for analysis. Buildings may in some cases receive a negative assessment result, which we believe is a strong signal to demolish the building. Further research may investigate and assess the competence of experts.

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INVOLVING THE PUBLIC IN THE ASSESSMENT OF COMMUNITY REAL ESTATE PROPERTY

Summary

The paper argues for the need to involve the public in decision-making on abandoned community real estate property in small communities with limited financial resources. This can be achieved by giving the public the opportunity to express their opinion via a survey. For this purpose, a specific approach was developed which involves conducting a survey and evaluating the results. A particular weighting factor is given for each chosen rank of indicator. A system of 50 indicators for five different groups (interior, exterior, environment, historical and cultural value, and finance) is proposed. The indicators are divided into 38 incentives and 12 disincentives, in accordance with their impact on the final assessment of the real estate property. An example of an assessment is given and it is proposed that the survey results be categorised and analysed based on the age of respondents. The aim of this paper is to develop a way of investigating the opinion of the local community regarding abandoned municipal real estate property in the cheapest and easiest way, applicable even in small villages. Not only will this ensure the assessment is carried out, it will also involve more people in community life and increase their interest. Public participation in solving community affairs is crucial when it comes to increasing the interest of residents in the life of the territory in particular and the effective development of civil

society in general. At the initial stage citizens may only engage in one-time participation; however, in the future a critical mass of caring locals will be formed who can bring forward new ideas and offer innovative solutions.

Keywords: *assessment, survey, community, public opinion, real estate management*

UKLJUČIVANJE JAVNOSTI U PROCJENU VRIJEDNOSTI NEKRETNINA LOKALNE ZAJEDNICE

Sažetak

Rad upozorava na potrebu uključivanja javnosti u proces donošenja odluka u pitanju napuštenih nekretnina u malenim zajednicama s ograničenim javnim resursima. To se može postići davanjem prigode javnosti da iznese svoje mišljenje u anketi. S tom je svrhom razvijen pristup provođenja ankete i evaluacije njezinih rezultata. Predložen je sustav od 50 indikatora raspoređenih u pet skupina (interijer, eksterijer, okoliš, povijesna i kulturna vrijednost, financije). Ti su indikatori podijeljeni u 38 pozitivnih i 12 negativnih indikatora, s obzirom na njihov utjecaj na konačnu procjenu. Za svaki je skup indikatora odabran specifičan ponder. Konačni se rezultati ankete potom trebaju analizirati s obzirom na dob ispitanika. Ovaj rad razvija način na koji se može istražiti stavove javnosti u lokalnoj zajednici radi odlučivanja o napuštenim nekretninama u općinskom vlasništvu na najjeftiniji i najjednostavniji način koji bi bio primjenjiv i u najmanjem selu. U isto vrijeme, uz osiguranje potrebne procjene, taj će proces osigurati uključivanje većeg broja ljudi u život zajednice i time povećati njihov interes za javno dobro. Sudjelovanje javnosti u rješavanju problema u zajednici ključan je čimbenik povećana zanimanja stanovnika za život u zajednici kao i efektivna razvitka civilnog društva. Dok u početku možemo očekivati samo jednokratno sudjelovanje građana, u budućnosti će, zasigurno, stvoriti kritičnu masu stanovnika kojima je stalo do lokalne zajednice i koji mogu donijeti nove ideje i ponuditi inovativna rješenja u svojem okružju.

Ključne riječi: *procjena, anketa, lokalna zajednica, javno mnijenje, upravljanje nekretninama*

Appendix 1

Table 1: *Valuation of abandoned real estate property*

Group number	Group name	Indicator number	Indicator name
A	Interior	A_1	Area
		A_2	Sanitary condition
		A_3	*Moral wear*
		A_4	*Physical wear*
		A_5	Reconstruction possibility
		A_6	Uniqueness
		A_7	Energy saving
		A_8	Daylight access
		A_9	Functionality
		A_{10}	Accessibility
B	Exterior	B_1	Storeys
		B_2	*Physical wear*
		B_3	*Moral wear*
		B_4	Reconstruction possibility
		B_5	Seismic resilience
		B_6	External attractiveness
		B_7	Utility
		B_8	Reliability
		B_9	Architecture and design
		B_{10}	Possibility of division
C	Environment	C_1	Landscape
		C_2	Land area
		C_3	*Distance from communications*
		C_4	*Analogue availability*
		C_5	*Risk of destruction*
		C_6	*Soil quality*
		C_7	Climatic conditions
		C_8	Urbanization
		C_9	*Noise level*
		C_{10}	Harmony of location

D	Historical and cultural value	D_1	Historical value
		D_2	Cultural value
		D_3	Traditions
		D_4	*Related negative events*
		D_5	Recognition
		D_6	Uniqueness in the region
		D_7	Photo and video appeal
		D_8	Construction period
		D_9	Public opinion
		D_{10}	Cultural development
E	Finance	E_1	Investment attractiveness
		E_2	Potential payback
		E_3	Potential profitability
		E_4	*Financial infusion needs*
		E_5	Financial capacity of the community
		E_6	*Maintenance costs*
		E_7	Demand for real estate in the region
		E_8	Compliance with strategic goals
		E_9	Possibility of partial usage
		E_{10}	Grant potential

Source: Authors.

Note: Disincentives are marked in italics.

Appendix 2

Table 2: *Incentive indicator influence*

Incentive indicator	Influence
Area	The larger the area, the higher value of the building
Sanitary condition	Better sanitation means the building is safer and less financial investment is needed
Reconstruction possibility	The more opportunities there are for an alternative use of the building, the higher its value
Uniqueness	The more unique a building is, the higher its value
Energy saving	The higher the building's ability to store energy is, the more valuable it is
Daylight access	The more daylight enters the building, the less energy it needs for lighting, and the more resistant it is to the formation of fungi and spread of disease

Functionality	The more functional a building is, the more alternatives for its use there are
Accessibility	The more accessible the building is to children and people with special needs, the more valuable it is
Storeys	The taller a building is, the more resources were invested in it, which means a larger area and more opportunities
Reconstruction possibility	The more flexible a building is in the context of redevelopment, the more alternative uses it has
Seismic resilience	Buildings which are more resistant to earthquakes or other natural disaster are safer and less likely to collapse
External attractiveness	A more attractive building costs more
Utility	The more opportunities and alternatives there are to the current use of the building, the higher its value
Reliability	The better the quality of the building, the calmer it will be for living
Architecture and design	The more original the external architectural and design elements of the building are, the greater its attractiveness is
Possibility of division	The more opportunities there are to use various parts of the building separately (instead of using the building in its entirety), the more alternative uses it has
Landscape	The more interesting and convenient the landscape of the nearby area is, the more valuable the building and its location are
Land area	The larger the area under and next to the building is, the wider the range of alternative uses of the building
Climatic conditions	The more favourable the climatic conditions are, the higher the demand for the building
Urbanization	The more urbanised a region is, the more contractors may be interested in the building for different purposes
Harmony of location	The more harmoniously located the building is, the more arguments there are to preserve it
Historical value	The higher the historical value of the building is, the higher its overall assessment is
Cultural value	The higher the cultural value of the building is, the higher its overall assessment is
Traditions	The more customs and traditions there are associated with the building, the more arguments there are to preserve it
Recognition	The higher the recognition of the building is, the more opportunities there are to use it for brand development of the territory
Uniqueness in the region	The fewer similar buildings there are in the region, the higher its value
Photo and video appeal	The higher the photo and video appeal of the building is, the more opportunities there are to use it for cultural or tourist purposes
Construction period	The more interesting or unique the construction period of the building is, the more valuable the building

Public opinion	The better the reputation of the building in the community is, the higher its value in the area
Cultural development	The more opportunities there are overall to use the building in cultural development, the higher its final value
Investment attractiveness	The more attractive the building is to invest in, the more significant likelihood there is of attracting investment in the building and the community as a whole
Potential payback	The higher the potential payback of the building is, the lower the risk of investing in the building
Potential profitability	The higher the potential profitability of the building is, the higher the probability for investors and return on investment
Financial capacity of the community	The higher the financial capacity of the community is, the more opportunities there are for development
Demand for real estate in the region	The higher the demand for real estate in the region is, the higher the value of the building will be
Compliance with strategic goals	The clearer it is that the use of the building can meet the strategic goals of the community, the more opportunities there will be for the development of its products
Possibility of partial usage	The more comprehensive range of alternative uses of the building there is, the higher its value
Grant potential	The higher the probability of attracting a grant or project for the use of the building, the more excellent opportunities there are to attract financial resources to the community and the higher the value of the building is

Source: Authors.

Table 3: *Disincentive indicator influence*

Disincentive indicator	Influence
Moral wear (interior)	The worse the building has been adapted for modern operations, the lower its cost and functionality and the more financial resources are needed for reconstruction
Physical wear (interior)	The more worn-out the building is, the greater the need for repairs and hence financial injections
Moral wear (exterior)	The less the building is adapted to modern needs, the lower its value
Physical wear (exterior)	The more worn-out the building is, the less attractive it is to investors and the less valuable it is
Distance from communications	The farther the building is from roads, power grids, water supply, and the like, the more resources are needed to ensure its helpful use
Analogue availability	The greater the number of similar buildings, the less original it is and the lower its value and the demand for it
Risk of destruction	The higher the risk of destruction of the building, the more financial injections it needs

Soil quality	The higher the quality of the soil under the building, the more significant alternative uses for the land are and more arguments for the demolition of the building
Noise level	The higher the noise level near the building is, the fewer alternatives there are to its use or the more resources are required to ensure its comfort
Related negative events	The more negative findings there are associated with the building (crimes, accidents, beliefs), the worse the public attitude towards the building is and the fewer chances there are to find an investor
Financial infusion needs	The more money is needed to invest in the building, the lower its current value
Maintenance costs	The more money is needed for current maintenance of the building, the more arguments for its demolition or sale

Source: Authors.

Appendix 3

The public opinion survey on real estate comprises 50 indicators, including 38 indicators that affect the final assessment of the value of a particular abandoned real estate property positively, while 12 have a negative effect.

As mentioned above, the respondent must first assign a certain rank to each of the indicators. A higher rank means the indicator is more important to the expert in the context of real estate appraisal. For the convenience of calculations and displaying the weight influence of each indicator, we suggest assigning each defined rank a weighting factor (Table 4).

Table 4: *Weighting factor of each rank*

Rank	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Weight	1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1

Source: Authors.

In case a respondent did not understand a question, did not know how to evaluate it properly, or simply did not wish to answer it, the number of assessments for each indicator will be different. This necessitates determining the average value for each indicator, group, and the assessment as a whole.

Therefore, the value of each of the groups A, B, C, D, E is determined by the formula

$$X = \left(\sum_{i=1}^{k} \delta(X_i) X_i(R) X_i(P) - \sum_{i=k+1}^{10} \delta(X_i) X_i(R) X_i(P) \right) \Big/ \sum_{i=1}^{10} \delta(X_i) X_i(R), \quad (1)$$

where X is the group number;

k is the number of incentives;

$X_i(R)$ is the value of the rank of the i-th indicator;

$X_i(P)$ is the estimate of the i-th indicator;

if the indicator X_i is estimated, then $\delta(X_i)=1$;

if X_i is not estimated, then $\delta(X_i)=0$.

When the values of the groups are calculated, the final score is summed up.

The total value of F of the expert assessment is determined by the sum of points for all groups, by the formula

$$F = A + B + C + D + E. \quad (2)$$

Appendix 4

Let's say there are three age groups of experts: I – up to 25, II – from 26 to 60, III – 61 and over.

Let's say the number of members in these groups is equal to l, m, and n respectively. In the k-th category there are l_k, m_k, n_k members of groups I, II, and III respectively. The overall score of the experts is defined as the arithmetic weighted average

$$L = \sum_{i=1}^{5} \frac{i(l_i + m_i + n_i)}{l + m + n}. \quad (3)$$

Then, in the example, using formula (3) we obtain:

$$L = \frac{1 \times 1 + 2 \times 27 + 3 \times 43 + 4 \times 15 + 5 \times 1}{87} = 2.86,$$