

DOI: [10.55643/fcapter.2.61.2025.4752](https://doi.org/10.55643/fcapter.2.61.2025.4752)

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Received: 0/03/2025

Accepted: 10/04/2025

Published: 30/04/2025

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FINANCIAL PLANNING FOR SUSTAINABLE COMMUNITY DEVELOPMENT IN THE SYSTEM OF ADAPTIVE STATE POLICY AND INNOVATIVE ADMINISTRATION OF CHANGE

ABSTRACT

The study is devoted to the analysis and forecasting of financial planning for the sustainable development of territorial communities in the context of adaptive state policy and innovative administration of changes. Using the example of communities in the central region of Ukraine, a comprehensive analysis of financial indicators for the last five years was conducted, covering the dynamics of income, expenses, subventions and population. The use of methods of economic and mathematical modelling, multivariate linear regression analysis and desirability function made it possible to determine the relationship between key financial parameters and demographic indicators, as well as to forecast the development of these indicators for the coming years. The results obtained indicate the heterogeneity of the financial sustainability of the studied communities, revealing both growth trends of individual budget items and changing ratios between the revenue and expenditure parts of the budgets. The use of an integrated approach contributes to the well-founded adoption of management decisions regarding the modernization of local self-government, ensuring socio-economic development and effective administration of changes at the local level.

Keywords: financial planning, sustainable community development, adaptive public policy, revenues, expenditures, innovative administration, strategies, budget

JEL Classification: H81, H83, R53, C53

INTRODUCTION

Financial planning for sustainable community development is an important area of modern economic policy that ensures effective management of local resources, increases the level of financial independence and creates conditions for stable economic growth. In the context of decentralization and changes in the public administration system, communities face challenges in ensuring the appropriate level of income, optimizing expenditures and attracting additional financial resources for the implementation of socio-economic programs. In this context, the use of innovative approaches to the administration of changes becomes important, allowing to ensure the adaptability of public policy to the specific conditions of each community. Modern communities operate in a dynamic environment, where financial planning should be based on a deep analysis of income and expenditure, effective allocation of budget funds and forecasting demographic and social trends. Financial planning for sustainable community development acquires particular importance in the context of economic, social and political transformations. Changes in public administration, decentralization processes and the need to adapt to new challenges require effective mechanisms for planning financial resources. The balance between state regulation and community autonomy is becoming important, which determines their ability to ensure sustainable development.

The dynamics of the economic environment and changes in the structure of income and expenditure require new approaches to budget management, forecasting financial indicators and attracting investments. The instability of the socio-economic situation affects the ability of communities to provide the necessary conditions for improving the stand-

ard of living of the population, which necessitates the development of adaptive strategies. Modern challenges associated with demographic changes, economic instability and the need for efficient use of resources create the need to introduce innovative methods of administration. The importance of strategic financial planning is determined not only by the need for a prompt response to external factors but also by the formation of long-term approaches to managing community development. The introduction of innovative methods of administration, strategic planning and adaptive state policy will help reduce disparities in development and create conditions for the financial independence of communities.

LITERATURE REVIEW

Yang and Solangi (2024) examined the relationship between natural resource management, environmental protection, and agricultural economics to ensure sustainable development, which creates a basis for analyzing economic factors in community financial planning. Pastukh (2022) examines the theoretical and organizational aspects of public management and administration, which are critical for ensuring the sustainable development of territories. Markina et al. (2022) demonstrate how the introduction of resource-saving and energy-saving technologies contributes to the restructuring of agricultural enterprises, which is directly related to the optimization of financial management at the local level. Reed et al. (2006) propose an adaptive learning process for the development of sustainability indicators with the participation of local communities, which opens up opportunities for assessing the effectiveness of management decisions in the public sector. Gutorova (2024) in her monograph reveals the foundations of public management and administration, which is a methodological basis for further research on financial planning. Antipenko et al. (2022) model regional financial security management strategies in the context of digitalization and migration risks, which complements modern approaches to financial management in the context of global challenges.

Roseland (2000) emphasizes the integration of environmental, economic, and social goals in the process of sustainable community development. Balanovska et al. (2022) examine the specifics of the development of agrarian entrepreneurship in Ukraine, which determines the economic basis for the financial planning of local communities. Cui et al. (2024) analyze the issue of creating "cooled cities" through the development of infrastructure for managing the urban thermal environment, which expands the conceptual understanding of the adaptation of infrastructure systems.

Ovcharenko et al. (2022) propose modelling the spatial organization of governance through the functioning of eco clusters, which is important for the formation of innovative community development strategies, while Blagun (2013) forms a cognitive model of the development of the banking system, which can be adapted for the analysis of financial processes in local government. Cheremisina et al. (2024) highlight the transformation of consumer demand in conditions of military operations, which creates an additional context for financial planning in crisis situations.

Saavedra and Budd (2009) emphasize the importance of building the capacity of local communities to adapt to climate change, which is relevant for the development of sustainable urban strategies, and Dankevych et al. (2020) consider the administrative aspect of strategic planning for the sustainable development of states, revealing methodological approaches to the development of financial models of community management.

Gertler and Wolfe (2004) investigate local social knowledge management and a multi-level governance system that contributes to the formation of innovative approaches to regional forecasting. Mazur et al. (2021) pay attention to improving control in the financial management of enterprises, which is important for the development of effective budgeting systems in local government. Phonthanukithaworn et al. (2024) compare policies of environmental innovations in the field of waste management, which helps to form a comprehensive picture of the environmental sustainability of communities. Dankevych et al. (2023) analyze the impact of European integration on the effectiveness of quality control systems, which can be adapted to the conditions of Ukrainian communities, and Stolyarov et al. (2022) optimize the material and technical support of enterprises, which creates the basis for the analysis of logistical aspects of financial management. Busayo et al. (2022) propose an ecosystem adaptation approach to flood risk management that expands the understanding of resilience in the face of natural disasters.

Johnson et al. (2004) develops a sustainability planning model that emphasizes the importance of capacity building for the implementation of prevention innovations, while Furman et al. (2023) explore the motivational and incentive factors for employees, which are key to optimizing internal management processes. Vasylychak et al. (2022) analyze state regulation of the labour market in the context of innovative development, which promotes the integration of social and economic aspects into the financial planning of communities.

Ali et al. (2021) considers the implementation of a green economy in Ghana as a model for sustainable development, while Klerkx et al. (2010) emphasize the importance of adaptive management in agricultural innovation systems, which provides

an opportunity to develop dynamic management models. Kopishynska et al. (2024) propose an integrated approach to managing the productivity of agroecosystems through the use of specialized information systems, which are relevant for agricultural communities.

Gryshchenko et al. (2021) analyze the competitive advantages of educational innovation clusters, which opens up prospects for integrating university resources into regional development, and Mumtaz (2024) argues that green infrastructure can become a key tool for climate adaptation of cities. Wamsler et al. (2014) consider an ecosystem approach to implementing changes in municipal planning, which provides the basis for the transition to sustainable governance models.

Zhyvko et al. (2022) highlight aspects of digitalization in accounting and financial management at the macro level, which is important for modernizing the financial management of communities, while Kubitskyi et al. (2023) analyze modern approaches to higher education management that can be adapted for the development of public governance systems. Silvestre and Țircă (2019) discuss innovation as a means of transition to a sustainable future, contributing to the formation of new management practices, and Bick (2025) demonstrates the experience of a local sustainable development initiative in the USA, which can serve as an example for other countries.

Khodakivska et al. (2022) model the economic security management of innovative entrepreneurship, which allows assessing risks and ensuring financial stability, while Kubitskyi et al. (2024) assess the impact of innovative technologies on global competitiveness, integrating technological solutions into the financial management system. Yang et al. (2021) emphasize the need for local adaptation of smart infrastructure to ensure sustainable economic management, and Mamonova et al. (2023) analyze the resilience of the global food system through the Ukrainian experience, which is important for determining development strategies in the face of external shocks.

Kalinichenko (2021) provides methodological guidelines for laboratory work on economic and mathematical methods and models, which contributes to the training of specialists, and Nakonechny et al. (2006) in a textbook on econometrics form a methodological basis for modelling financial processes in public structures. Finally, Harrington (1965) introduces the concept of the desirability function, which is still used to assess the effectiveness of management decisions and can be integrated into modern financial analysis systems.

Thus, all of the above works make a significant contribution to the understanding and development of the concept of financial planning for sustainable community development in the system of adaptive state policy and innovative change administration, providing a theoretical and practical basis for further research and the implementation of innovative management decisions.

The information sources for statistical economic and financial analysis were official sources [41-45]. In accordance with the research topic, it is necessary to deepen the understanding of the application of modern economic and mathematical models and statistical methods for predicting financial indicators of communities, which will allow a more accurate reflection of the impact of external economic and social factors. At the same time, a more detailed analysis of the mechanisms of influence of adaptive state policy and innovative management practices on the sustainability of local government is required, which will help clarify the relationships between financial flows and the development of territorial communities. It is also important to expand research on ways to integrate digital technologies into financial management, as this will contribute to increasing the efficiency of management decision-making. In addition, it is necessary to combine quantitative and qualitative indicators in the overall analysis, which will allow the creation of a more balanced system for assessing socio-economic development, as well as comparing the results obtained with international experience for adapting best practices to national conditions.

AIMS AND OBJECTIVES

The purpose of the article is to study the financial planning and adaptation of territorial communities to changes in the system of innovative administration taking into account sustainable development.

The objectives of the article are:

1. Analysis of financial indicators of the activities of territorial communities from the central region of Ukraine.
2. Assessment of the impact of the main financial factors on the performance indicators of communities.
3. Forecasting financial indicators for future years to determine development trends.
4. Assessment of the effectiveness of management strategies and policies in communities using desirability function and rating methods.

5. Development of recommendations for optimizing financial activities and increasing the adaptability of communities to changes.

METHODS

In the study devoted to the issues of financial planning for sustainable development of communities in the system of adaptive state policy and innovative administration of changes, various methods were applied, which allowed to provide a deep and substantiated analysis. The main approach to analyzing the relationships between financial factors was statistical methodology, in particular, the use of correlation coefficients. This method made it possible to identify the degree of relationship between such factors as local budget revenues, budget expenditures and the volume of subventions with the population of the community. With the help of correlation coefficients, the level of influence of each of these indicators on the effectiveness of financial management in communities was determined, which helped to accurately assess the financial capacity and adaptability of these communities to changes. Another important stage of the study was the forecasting of the main financial indicators of the community. For this, extrapolation methods were used, which allowed us to calculate the projected values for revenues, budget expenditures and population for future periods based on available data. The extrapolation method is based on the analysis of trends and dynamics of past indicators to determine likely changes in the future, which helped to make realistic forecasts for the three communities in the period from 2025 to 2027, which is important for strategic planning and adaptation to economic changes.

The desirability function was used to assess the effectiveness of management measures and the effectiveness of financial activities. It made it possible to assess how close the actual indicators of income, expenditure and other financial aspects approach the optimal values that meet the needs and development goals of territorial communities. The assessment was carried out on the basis of certain standards and thresholds, which allowed classifying the results as "good", "satisfactory" or "bad", which contributed to a detailed analysis of the effectiveness of financial management in the context of sustainable community development.

An important stage was also the use of the rating method to compare financial indicators among territorial communities. This method allowed us to build a clear picture, which reflected the strengths and weaknesses of each community in the financial aspect. With the help of a rating assessment, leaders among communities were identified, which made it possible to highlight the most effective practices and strategies that could be applied by other communities to improve their financial activities.

To assess the adaptability of financial policy in the face of external changes, a dynamic analysis of financial indicators was carried out. This approach made it possible to identify trends and patterns in changes in budget revenues, expenditures and other financial components of communities at different stages of development, which became the basis for developing recommendations for optimizing financial policy and making effective management decisions that ensure sustainable development of communities in the face of adaptive state policy.

In general, the combination of statistical methods, forecasting, desirability functions and ratings made it possible to comprehensively assess the financial sustainability and efficiency of management of territorial communities, as well as develop practical recommendations for improving financial policy.

RESULTS

By studying in depth, the financial planning of sustainable development of communities in the system of adaptive state policy and innovative administration of changes, a practical study of the effectiveness and efficiency of the functioning of the management system is proposed using the example of settlement territorial communities of the central region of Ukraine, namely Poltava region, Kyiv and Vinnytsia regions. Let us characterize these communities.

Tereshkiv territorial community is an administrative-territorial formation with an area of 208.40 km², created in August 2018 and located in Poltava district. It unites 20 settlements (with the central centre of the village of Tereshki), which have common local self-government and common interests in development. The community with a population of 12,126 people deals with issues of local infrastructure, education, culture and social security, striving to ensure a comfortable life for its residents. Due to its location, it has close ties with Poltava, which contributes to the economic and social development of the region.

Stavyschensk settlement territorial community is an administrative association of settlements located on an area of 674.31 km², which functions within the framework of local self-government in the Bila Tserkva district of the Kyiv region. It has

an administrative centre - the village of Stavyshche and ensures the development of infrastructure, education, culture and the social sphere, creating conditions for a comfortable life for residents. Due to its geographical location, the community has the potential for economic growth and improving the quality of life, while preserving local traditions and cultural heritage.

Kalynivka urban territorial community is an administrative association in the Khmilnytskyi district of the Vinnytsia region, which functions within the framework of local self-government with an administrative centre in Kalynivka and unites settlements (with an area of 88.49 km²) around the city of Kalynivka. It is aimed at improving the living conditions of residents, developing the economy, education, medicine and the cultural sphere. Due to its favourable location, the community has prospects for growth and modernization, while preserving the historical and cultural features of the region.

Based on public statistical and financial information available on the Internet, the dynamics of the main financial indicators of the activities of the previously defined territorial communities over the past five years were formed (report on financial results form No. 2-ds, report on cash flows form No. 3-ds and notes to the annual financial statements form No. 5-ds) (Table 1).

Table 1. Dynamics of the main financial indicators of the activities of three territorial communities of the central region of Ukraine, 2019-2023. (Source: summarized by the authors using official statistical data from the studied communities)					
Indicators	2019	2020	2021	2022	2023
Local budget revenues, UAH thousand					
Tereshkiv territorial community of Poltava district	1780325.30	1780359.00	1813292.40	1814477.30	1812359.80
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	2113144.33	20877902.67	2178741.00	1629669.00	4859147.00
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	4393216.74	4404619.98	4413216.74	4414616.67	4503592.43
Local budget expenditures, UAH thousand					
Tereshkiv territorial community of Poltava district	1862410.66	1861846.52	1893282.38	1895384.91	1908820.77
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	2002185.00	1948072.00	2161491.00	1639407.00	4895475.00
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	4446296.10	4468362.00	4470468.26	4415286.95	5015855.36
Subsidy amount, UAH thousand					
Tereshkiv territorial community of Poltava district	11109.20	13276.00	19665.80	22306.30	18209.30
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	1638000.00	1686062.00	1734124.00	152886.00	1662031.00
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	1225078.36	1223445.00	1288068.20	1252455.00	1298074.00
Number of community residents. people					
Tereshkiv territorial community of Poltava district	4975	12126	12433	12392	12402
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	21402	21 394	21386	21 238	21370
Kalyniv territorial community Vinnytsia region, Khmilnytsia district	20 175	20218	20 261	20204	20448

The financial indicators of the activities of three territorial communities of the central region of Ukraine during 2019-2023 demonstrate certain trends. The revenue part of local budgets has undergone changes, which has affected the financial sustainability of communities. Expenditures also had growth or fluctuation dynamics, reflecting the need for financing various areas of activity. The volume of subventions varied significantly between communities, playing an important role in ensuring their financial balance. The population was relatively stable, with minor changes during the analyzed period. An analysis of the dynamics of the financial indicators of three territorial communities of the central region of Ukraine in 2019-2023 indicates differences in income, expenses, volumes of subventions and population. The dynamics of the budget surplus or deficit of three territorial communities of the central region of Ukraine, 2019-2023 is shown in Table 2.

Table 2. Dynamics of budget surplus or deficit of three territorial communities of the central region of Ukraine, 2019-2023. (Source: summarized by the authors using official statistical data from the studied communities)

Territorial communities	Surplus/deficit, UAH thousand.					Absolute Deviation 2023 from 2019, +,-
	2019	2020	2021	2022	2023	
Tereshkiv territorial community, Poltava district	-82085.36	-81487.52	-79989.98	-80907.61	-96460.97	-14375.61
Stavyshchensk settlement territorial community, Bilotserkiv district, Kyiv region	110959.33	18929830.67	17250.00	-9738.00	-36328.00	-147287.33
Kalyniv territorial community, Vinnytsia region, Khmilnytsia district	-53079.36	-63742.02	-57251.52	-670.28	-512262.93	-459183.57

Analysis of the dynamics of the budget surplus and deficit of three territorial communities of the central region of Ukraine in 2019-2023 shows different trends in financial sustainability. In the Tereshkivska community, the budget deficit increased from UAH 82,085.36 thousand in 2019 to UAH 96,460.97 thousand in 2023. The absolute deviation for this period was UAH -14,375.61 thousand, which indicates a deterioration in the balance between income and expenditure. The Stavyshchenska community had a surplus of UAH 110,959.33 thousand in 2019, but in 2023 a deficit of UAH 36,328.00 thousand was recorded. A decrease in the financial result by UAH 147,287.33 thousand indicates a significant deterioration of the budget and an excess of expenditures over revenues. The Kalynivska community demonstrated the most significant deterioration in its financial condition. The budget deficit increased from UAH 53,079.36 thousand in 2019 to UAH 512,262.93 thousand in 2023. The absolute deviation of UAH -459,183.57 thousand reflects a critical increase in the lack of funds, which may indicate a significant excess of expenditures or a reduction in revenues. The financial situation in communities in general demonstrates a deterioration in the budget balance, which may be associated with an increase in expenditures, a change in the volume of subventions, or economic factors that affected the revenue side. Next, we will analyze the elements of expenses for exchange transactions, which include labour costs, deductions for social events, material costs, and depreciation of the studied territorial communities over the past five years (Figure 1). The dynamics of cost elements for exchange transactions of three territorial communities of the central region of Ukraine over the last five years is graphically presented in Figure 1.

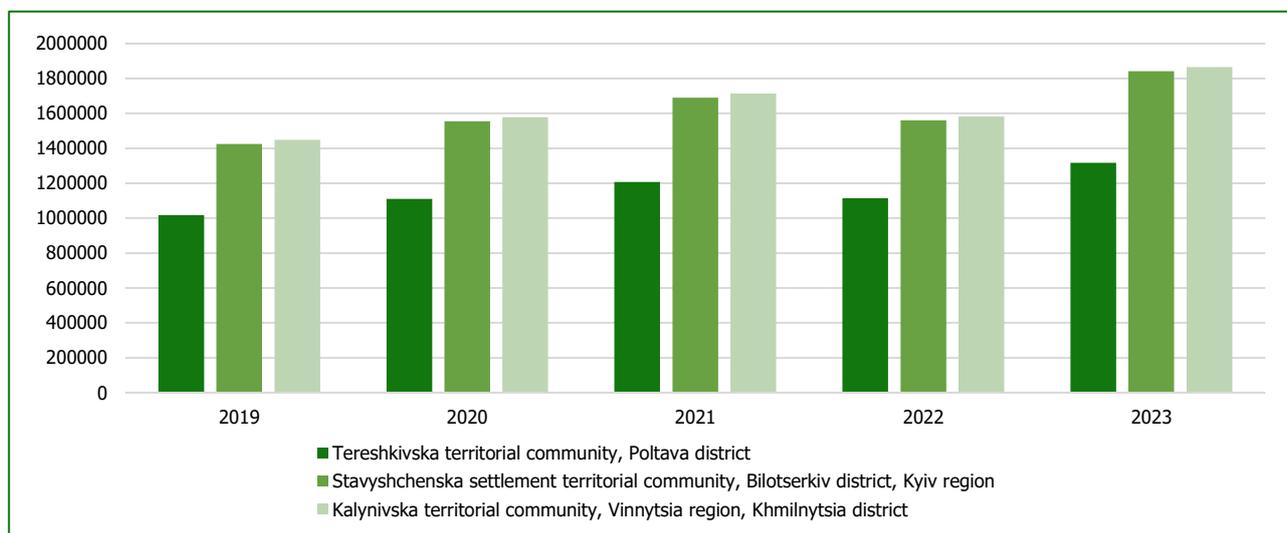


Figure 1. Dynamics of cost elements for exchange transactions of territorial communities of the central region of Ukraine, 2019-2023. (Source: summarized by the authors using official statistical data from the studied communities)

Analysis of the dynamics of expenses for exchange transactions in three territorial communities of the central region of Ukraine for 2019-2023 indicates a trend of increasing overall expenses, especially for labour and social activities, while material expenses had a significant decrease. Labour expenses in the Tereshkivska community increased from UAH 747,240.12 thousand in 2019 to UAH 1,024,447.14 thousand in 2023. In the Stavyshchenska community, this indicator increased from UAH 1,046,136.17 thousand to UAH 1,434,226.00 thousand, and in the Kalynivska community - from UAH 1,051,980.17 thousand to UAH 1,440,070.00 thousand. Deductions for social activities also had a tendency to increase. In the Tereshkivska community, they increased from UAH 137,357.02 thousand in 2019 to UAH 226,111.43 thousand in 2023.

In the Stavyshchenska community, they increased from UAH 192,299.83 thousand to UAH 316,556.00 thousand, and in the Kalynivska community, they increased from UAH 198,143.83 thousand to UAH 322,400.00 thousand. Material costs, on the contrary, decreased significantly. In the Tereshkivska community, this indicator decreased from UAH 127,212.02 thousand in 2019 to UAH 42,995.00 thousand in 2023. In the Stavyshchenska community, expenses decreased from UAH 178,096.83 thousand to UAH 60,193.00 thousand, and in Kalynivska – from UAH 183,940.83 thousand to UAH 66,037.00 thousand. Depreciation expenses showed unstable dynamics but generally had a tendency to increase. In the Tereshkivska community, they increased from UAH 5,851.90 thousand in 2019 to UAH 22,541.43 thousand in 2023. In the Stavyshchenska community – from UAH 8,192.67 thousand to UAH 31,558.00 thousand, and in Kalynivska – from UAH 14,036.67 thousand to UAH 37,402.00 thousand. The total amount of expenses for exchange transactions shows growth. In Tereshkivska community, it increased from UAH 1,017,661.07 thousand in 2019 to UAH 1,316,095.00 thousand in 2023. In the Stavyshchenska community – from UAH 1,424,725.50 thousand to UAH 1,842,533.00 thousand, and in Kalynivska – from UAH 1,448,101.50 thousand to UAH 1,865,909.00 thousand. The main trend in the structure of expenses indicates an increase in funds for labour remuneration and social measures, which may be associated with an increase in salaries and social benefits, while material expenses have significantly decreased. The following is a determination of the share of exchange transaction costs in the total costs of territorial communities over the past five years (Table 3).

Table 3. Dynamics of the share of exchange transaction costs in the total costs of three territorial communities of the central region of Ukraine, 2019-2023. (Source: summarized by the authors using official statistical data from the studied communities)

Territorial communities	2019	2020	2021	2022	2023
Total expenses, UAH thousand					
Tereshkiv territorial community, Poltava district	1862410.66	1861846.52	1893282.38	1895384.91	1908820.77
Stavishchen settlement territorial community, Bilotserkiv district, Kyiv region	2002185.00	1948072.00	2161491.00	1639407.00	4895475.00
Kalyniv territorial community, Vinnytsia region, Khmilnytsia district	4446296.10	4468362.00	4470468.26	4415286.95	5015855.36
Total costs of exchange transactions, UAH thousand					
Tereshkiv territorial community, Poltava district	1017661.07	1110609.76	1207048.57	1114008.57	1316095.00
Stavishchen settlement territorial community, Bilotserkiv district, Kyiv region	1424725.50	1554853.67	1689868.00	1559612.00	1842533.00
Kalyniv territorial community, Vinnytsia region, Khmilnytsia district	1448101.50	1578229.67	1713244.00	1582988.00	1865909.00
Share of exchange transaction costs in total costs, %					
Tereshkiv territorial community, Poltava district	54.64%	59.65%	63.75%	58.77%	68.95%
Stavishchen settlement territorial community, Bilotserkiv district, Kyiv region	71.16%	79.81%	78.18%	95.13%	37.64%
Kalyniv territorial community, Vinnytsia region, Khmilnytsia district	32.57%	35.32%	38.32%	35.85%	37.20%
Territorial communities		Average share of exchange transaction costs in total costs 2019-2023, %			
		2019			
Tereshkiv territorial community, Poltava district		61.15%			
Stavishchen settlement territorial community, Bilotserkiv district, Kyiv region		72.38%			
Kalyniv territorial community, Vinnytsia region, Khmilnytsia district		35.85%			

Analyzing the data obtained, we see that the largest share of expenses for exchange transactions in total expenses is occupied by the Stavyshchensk settlement territorial community (72.38%), and the smallest share is occupied by the Kalynivsk territorial community (35.85%). Illustratively, the share of expenses for exchange transactions in total expenses of three territorial communities of the central region of Ukraine over the last five years is presented in Figure 2.

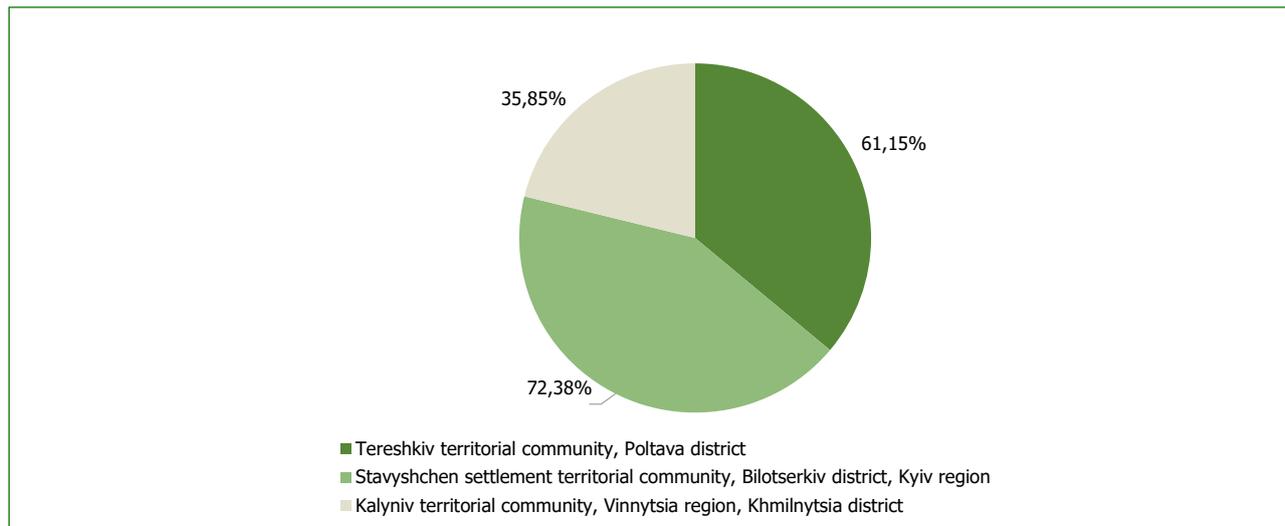


Figure 2. Share of expenses for exchange transactions in total EXPENSES of three territorial communities of the central region of Ukraine, 2019-2023. (Source: calculated by the authors taking into account official statistical data of the studied communities)

Further, we conduct research, analysis, comparison, modelling and forecasting of community development administration, public administration and change management of three territorial communities of the central region of Ukraine over the past five years using modelling tools to determine the stochastic relationship (Table 4).

Table 4. Results of processing statistical data of three territorial communities of the central region of Ukraine by pairwise correlation coefficients, 2019-2023. (Source: calculated by the authors taking into account official statistical data of the studied communities and scientific sources Kalinichenko, 2021; Nakonechny et al., 2006)

Territorial communities	Paired correlation coefficients of the impact on the performance indicator number of community residents					
	Local budget revenues, UAH thousands	Characteristics of the pairwise correlation coefficient	Local budget expenditures, UAH thousand	Characteristics of the pairwise correlation coefficient	Subsidy amount, UAH thousand	Characteristics of the pairwise correlation coefficient
Tereshkiv territorial community, Poltava district	$r_{YX1}=0,84$	close connection and direct influence	$r_{YX2}=0,79$	close connection and direct influence	$r_{YX3}=0,73$	close connection and direct influence
Stavyshchen settlement territorial community, Bilotserkiv district, Kyiv region	$r_{YX1}=0,72$	close connection and direct influence	$r_{YX2}=0,84$	close connection and direct influence	$r_{YX3}=0,98$	close connection and direct influence
Kalyniv territorial community, Vinnytsia region, Khmilnytsia district	$r_{YX1}=0,98$	close connection and direct influence	$r_{YX2}=0,97$	close connection and direct influence	$r_{YX3}=0,80$	close connection and direct influence

Analyzing the pairwise correlation coefficients, it should be noted that the selected factors significantly affect the number of residents of territorial communities of the central region of Ukraine, the production models are qualitative. Analysis of pairwise correlation coefficients between the number of residents of the community and financial indicators for 2019-2023 indicates a significant dependence between these variables. In the Tereshkiv territorial community, the relationship between local budget revenues and population is close with a coefficient of 0.84, a similar level of connection is observed for budget expenditures - 0.79, and for the volume of subventions - 0.73. This means that population growth directly affected all three financial indicators. Stavyshchensk community demonstrates a strong dependence between the volume of subventions and the number of residents, where the correlation coefficient is 0.98. Budget expenditures also have a high level of correlation – 0.84, and local budget revenues correlate with the population slightly weaker, with an indicator of 0.72. In the Kalynivska community, the highest level of correlation is observed between budget revenues and the number of residents – 0.98. Budget expenditures also have a very high coefficient – 0.97, which indicates an almost direct relationship between the number of residents and the amount of financing. The impact of the volume of subventions is somewhat weaker, but still significant – 0.80. In general, the results show that in all communities there is a close relationship between the number of residents and the main financial indicators, and in the Kalynivska community the dependence is most

pronounced. Next, we conduct modelling of the transposed matrix to determine the theoretical and forecast values of the number of residents of territorial communities and compare them with actual values, using the built-in statistical functions Transpose, Mmult, Minverse and Linest.

As a result of the calculations, the multifactor production linear regressions of the number of residents of territorial communities have the form:

1. Tereshkivska territorial community of Poltava district:
 $Y_r = 398956.99 - 0.44X_1 + 0.20X_2 + 1.38X_3$
2. Stavyshchenska settlement territorial community of Bila Tserkva district, Kyiv region:
 $Y_r = 21235.77 - 0.000000045X_1 - 0.0000078X_2 + 0.00010X_3$
3. Kalynivska territorial community of Vinnytsia region, Khmilnytsia district:
 $Y_r = 16237.90 + 0.0005X_1 + 0.0004X_2 + 0.0009X_3$

The parameters of the multifactor production function are calculated by the method of least squares, so we have for:

1. Tereshkivska territorial community, Poltava district:
 $a_0 = 398956.99$; $a_1 = -0.44$; $a_2 = 0.20$; $a_3 = 1.38$;
2. Stavyshchenska settlement territorial community, Bila Tserkva district, Kyiv region:
 $a_0 = 21235.77$; $a_1 = -0.000000045$; $a_2 = -0.000007759$; $a_3 = 0.000103404$;
3. Kalynivska territorial community, Vinnytsia region, Khmilnytsia district:
 $a_0 = 16237.90$; $a_1 = 0.0005$; $a_2 = 0.0004$; $a_3 = 0.0009$.

Also, the general coefficient of determination was determined for three production models: Tereshkivska territorial community of Poltava district $R^2 = 0.64$; Stavyshchenska settlement territorial community of Bila Tserkva district, Kyiv region $R^2 = 0.98$; Kalynivska territorial community of Vinnytsia region, Khmelnytskyi district $R^2 = 0.99$. In the future, the calculation of the main statistical indicators of multifactor regression of the number of residents of the community of studied territorial communities can be carried out for the effectiveness of community development administration, public administration and change management. In continuation of the study, we will forecast the factors and the indicators of the three studied territorial communities of the central region of Ukraine for the next three years (Table 5).

Table 5. Forecasting the main financial indicators of activity and the number of residents of the three territorial communities of the central region of Ukraine, 2025-2027.

Factors/Indicator	Forecast values of factors		
	2025	2026	2027
	Local budget revenues, UAH thousand		
Tereshkiv territorial community of Poltava district	1839437.68	1849256.41	1859075.14
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	4862110.00	4880562.00	4899014.00
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	4518309.74	4541384.55	4564459.35
	Local budget expenditures, UAH thousand		
Tereshkiv territorial community of Poltava district	1934892.487	1947528.347	1960164.207
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	4898320.00	4900468.00	4902616.00
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	4997671.12	5106275.47	5214879.82
	Subsidy amount, UAH thousand.		
Tereshkiv territorial community of Poltava district	19205.52	21028.57	21851.62
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	1663044.00	1671204.00	1679364.00
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	1327424.62	1344924.75	1362424.88
	Number of community residents, people.		
Tereshkiv territorial community of Poltava district	12344	12388	12453
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	21438	21446	21455
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	21567	21620	21626

The projected financial indicators and the number of residents of three territorial communities of the central region of Ukraine for 2025-2027 indicate a stable growth of the main budget parameters. Local budget revenues demonstrate a gradual increase. In Tereshkivska community, they will grow from UAH 1,839,437.68 thousand in 2025 to UAH 1,859,075.14 thousand in 2027. Stavyshchenska community will receive UAH 4,862,110.00 thousand in 2025, and in 2027 - UAH 4,899,014.00 thousand. In the Kalynivska community, revenues will grow from UAH 4,518,309.74 thousand to UAH 4,564,459.35 thousand in 2027. Local budget expenditures also tend to increase. Tereshkivska community will spend UAH 1,934,892.49 thousand in 2025 and UAH 1,960,164.21 thousand in 2027. In the Stavyshchenska community, projected expenditures will amount to UAH 4,898,320.00 thousand in 2025 and UAH 4,902,616.00 thousand in 2027. Kalynivska community will have the highest level of expenditures among all analyzed territories – UAH 4,997,671.12 thousand in 2025 and UAH 5,214,879.82 thousand in 2027. The volume of subventions will also increase, which indicates support from the state budget. In the Tereshkivska community, it is projected to grow from UAH 19,205.52 thousand in 2025 to UAH 21,851.62 thousand in 2027. The Stavyshchenska community will receive UAH 1,663,044.00 thousand in 2025 and UAH 1,679,364.00 thousand in 2027. In the Kalynivska community, subventions will increase from UAH 1,327,424.62 thousand to UAH 1,362,424.88 thousand. The number of community residents is projected to grow slightly but steadily. In the Tereshkivska community, it will grow from 12,344 people in 2025 to 12,453 people in 2027. In the Stavyshchensk community, the number will increase from 21,438 people to 21,455 people, and in Kalynivska - from 21,567 people to 21,626 people in 2027. The general trend indicates a stable development of communities with a gradual increase in income, expenses and subventions, which contributes to maintaining socio-economic stability. Further, we determined the absolute and relative deviation of 2027 from 2023 and the characteristics of its movement for three territorial communities of the central region of Ukraine are presented in Table 6.

Table 6. The dynamic movement of the main forecast financial factors of activity and the number of residents of three territorial communities of the central region of Ukraine, 2023, 2025-2027.

Territorial communities	Absolute Deviation 2027 from 2023, +, -	Relative Deviation 2027 from 2023, %	Growth/decrease
Local budget revenues, UAH thousand.			
Tereshkiv territorial community of Poltava district	46715.34	102.58%	2.58%
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	39867.00	100.82%	0.82%
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	46149.61	101.35%	1.35%
Local budget expenditures, UAH thousand.			
Tereshkiv territorial community of Poltava district	51343.44	102.69%	2.69%
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	7141.00	100.15%	0.15%
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	199024.46	103.97%	3.97%
Subsidy amount, UAH thousand.			
Tereshkiv territorial community of Poltava district	3642.32	120.00%	20.00%
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	17333.00	101.04%	1.04%
Kalyniv territorial community of Vinnytsia region, Khmilnytsia district	64350.88	104.96%	4.96%
Number of community residents, people			
Tereshkiv territorial community of Poltava district	51	100.41%	0.41%
Stavishchen settlement territorial community of Bilotserkiv district, Kyiv region	85	100.40%	0.40%
Kalynivka territorial community Vinnytsia region, Khmilnytsia district	1178	105.76%	5.76%

Forecasted changes in the main financial indicators and the number of residents for the three territorial communities for the period until 2027 indicate a generally positive trend in the growth of income, expenses, subventions and population. All communities have a planned growth in local budget revenues. However, the growth in the Tereshkivska community demonstrates a moderate increase, while in the Kalynivska and Stavyshchenska communities, the changes look less sig-

nificant. The relative deviation from 2023 to 2027 in these communities is also small, which reflects stable financial development, in particular in terms of local budget revenues. In general, all forecasts indicate the gradual development of territorial communities with small but stable growth in all key indicators, which allows us to speak about their sustainability and gradual evolution in the direction of socio-economic development. The following is a rating assessment of the forecast values of the factor and the forecast values of the effective indicator of the number of residents of the three studied territorial communities (Table 7).

Table 7. Rating assessment of the forecast values of the factor and the effective indicator of the number of residents of the three studied territorial communities of the central region of Ukraine, 2027.

Factors/Indicator	Predictive values of factors						Forecast values of the effective indicator of the number of community residents, persons	
	Local budget revenues, UAH thousand	Rating	Local budget expenditures, UAH thousand	Rating	Subsidy amount, UAH thousand	Rating	2027	Rating
	2027		2027		2027			
Tereshkivska territorial community, Poltava district	1859075.14	3	1960164.207	3	21851.62	3	12453	3
Stavyshchenska settlement territorial community, Bilotserkivka district, Kyiv region	4899014.00	1	4902616	2	1679364	1	21455	2
Kalynivska territorial community, Vinnytsia region, Khmilnytsia district	4564459.35	2	5214879.816	1	1362424.88	2	21626	1

According to the results of the rating of forecast values for the three territorial communities, each of them has its own strengths in various aspects of financial indicators. Tereshkivska community occupies equal positions in all categories, showing stability in planned income, expenses, subventions and population. It occupies an average position among the studied communities, which indicates a balance in development. Stavyshchenska community leads in terms of income and subventions but is in second place in terms of expenditure and population. This indicates significant potential in financial development but also indicates certain challenges in other aspects, in particular in population, where its growth is not as significant as that of competitors. Kalynivska community occupies first place in terms of population, which indicates a successful social policy or better living conditions. At the same time, its income and expenditure indicators are at an average level, with a gradual increase in the volume of subventions, which indicates stable financial development and support from the state. In general, each community shows different development trends depending on the sphere of activity, but they all plan gradual growth in basic financial and demographic indicators. Also, the surplus or deficit of the local budget of the three studied territorial communities was determined, as the forecast value of income and expenditure in 2027 compared to 2023 (Table 8).

Table 8. Forecast value of local budget surplus or deficit of three territorial communities of the central region of Ukraine, 2025-2027.

Indicators	Surplus/deficit, UAH thousand.			Absolute deviation 2027 from 2023, +,-	Relative deviation of 2027 from 2023, %	Growth/decrease
	2025	2026	2027			
Tereshkivska territorial community, Poltava district	-95454.81	-98271.94	-101089.07	-4628.10	104.80%	4.80%
Stavyshchenska settlement territorial community, Bilotserkivka district, Kyiv region	-36210.00	-19906.00	-3602.00	32726.00	9.92%	109.92%
Kalynivska territorial community, Vinnytsia region, Khmilnytsia district	-479361.38	-564890.92	-650420.46	-138157.53	126.97%	26.97%

We note that the Stavyshchensk settlement territorial community in 2027 has a local budget surplus of 9.92%, i.e. budget revenues fully cover expenditures. Tereshkivsk territorial community and Kalynivsk territorial community have budget deficits of 4.80% and 26.97%, i.e. the revenue part of the local budget is less than the expenditure part.

Finally, to compare the obtained forecast factor characteristics and the effective indicator of the number of residents of territorial communities in 2025-2027, their graphical representation is possible, which makes it possible to compare and assess the potential of community development administration, public administration and change management of these territorial units.

So, summing up this block of research, analysis, comparison of community development, public administration and change management of three territorial communities of the central region of Ukraine, modelling and forecasting the impact of the main financial factors on the number of residents of communities using the economic and mathematical model of a multi-factor linear function, we can say that the use of these methods allows us to make management decisions regarding the development and effective operation of such territorial units at the local level.

Further, at the second stage of studying the financial planning of sustainable community development in the system of adaptive state policy and innovative administration of changes, we conduct a study of indicators for assessing the effectiveness of activities using the desirability (preference) function for three territorial communities of the central region of Ukraine over the past five years. When calculating the desirability (preference) function, we take into account all the features of the activities of territorial communities. In the course of additional calculations: dimensionless values of indicators for assessing the activities of territorial communities, indicators for the partial desirability function and their characteristics were calculated (Table 9).

Table 9. Indicators by partial "desirability function" and assessment of the activities of three territorial communities of the central region of Ukraine, 2019-2023.

Indicators	2019	2020	2021	2022	2023
Indicators by partial "desirability function" Tereshkivska territorial community of Poltava district					
Local budget revenues, UAH thousand	0.69	0.69	0.69	0.69	0.69
Local budget expenditures, UAH thousand	0.69	0.69	0.69	0.69	0.69
Subsidy amount, UAH thousand	0.54	0.58	0.66	0.69	0.64
Number of community residents, persons	0.51	0.69	0.69	0.69	0.69
Desirability function	0.61	0.66	0.68	0.69	0.68
Characteristics	<i>satisfactorily</i>	<i>good</i>	good	good	good
Indicators by partial "desirability function" Stavyshchensk settlement territorial community, Bilotserkiv district, Kyiv region					
Local budget revenues, UAH thousand	0.41	0.69	0.41	0.40	0.45
Local budget expenditures, UAH thousand	0.51	0.51	0.53	0.49	0.69
Subsidy amount, UAH thousand	0.68	0.69	0.69	0.40	0.68
Number of community residents, persons	0.69	0.69	0.69	0.69	0.69
Desirability function	0.57	0.65	0.58	0.49	0.63
Characteristics	<i>satisfactorily</i>	<i>good</i>	satisfactorily	satisfactorily	satisfactorily
Indicators by partial "desirability function" Kalynivska territorial community Vinnytsia region, Khmilnytsia district					
Local budget revenues, UAH thousand	0.69	0.69	0.69	0.69	0.69
Local budget expenditures, UAH thousand	0.66	0.66	0.66	0.66	0.69
Subsidy amount, UAH thousand	0.68	0.68	0.69	0.68	0.69
Number of community residents, persons	0.69	0.69	0.69	0.69	0.69
Desirability function	0.68	0.68	0.68	0.68	0.69
Characteristics	good	good	good	good	good

According to the results of the analysis of the indicators, it can be noted that all three territorial communities demonstrate sustainable development in terms of desirability function assessments in different years. In the Tereshkivska community, a stable improvement is observed during 2019-2023, starting from a satisfactory assessment and gradually achieving good results. However, the greatest growth is observed in 2022, where all indicators reached high levels, which is reflected in a stable assessment of the desirability function. The Stavyshchenska community has a more variable picture, with the greatest fluctuation observed in 2020, when there was a significant improvement in the indicators. Despite this year, the

general trend shows fluctuations in assessments from satisfactory to good levels, which can explain the instability in some aspects, in particular in local budget revenues and the volume of subventions. In the Kalynivska community, stability and positive trends are observed in all aspects, which makes it the leader in the desirability function. All indicators in this community are at a high level, which ensures a stable assessment at the "good" level throughout the period. This indicates effective financial activity and stable population development. In general, although all communities show a tendency to improve, the Kalynivska community demonstrates the highest results in assessing the desirability function. It should be emphasized that further forecasting and comparison of the universal indicator – the desirability function (advantages) of assessing the activities of three territorial communities for 2025-2027 was carried out (Table 10). As the forecast values of financial factors and the effective indicator of the number of residents of the community, forecast values calculated in advance using multifactor linear production regression were taken.

Table 10. Forecasting of activity assessment indicators using the universal indicator "desirability function" (advantages) of three territorial communities of the central region of Ukraine, 2019-2023, 2025-2027.

Indicators	2019	2020	2021	2022	2023	2025	2026	2027
Indicators by partial "desirability function" Tereshkivska territorial community of Poltava district								
Local budget revenues, UAH thousand	0.68	0.68	0.69	0.69	0.69	0.69	0.69	0.69
Local budget expenditures, UAH thousand	0.68	0.68	0.68	0.68	0.69	0.69	0.69	0.69
Subsidy amount, UAH thousand	0.54	0.58	0.66	0.69	0.64	0.66	0.68	0.69
Number of community residents, persons	0.51	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Desirability function	0.60	0.66	0.68	0.69	0.68	0.68	0.69	0.69
Characteristics	<i>satisfactorily</i>	good	good	good	good	good	good	good
Indicators by partial "desirability function" Stavyshchensk settlement territorial community, Bilotserkiv district, Kyiv region								
Local budget revenues UAH thousand	0.41	0.69	0.41	0.40	0.45	0.45	0.45	0.45
Local budget expenditures, UAH thousand	0.51	0.51	0.53	0.49	0.69	0.69	0.69	0.69
Subsidy amount, UAH thousand	0.68	0.69	0.69	0.40	0.68	0.68	0.68	0.68
Number of community residents, persons	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Desirability function	0.57	0.64	0.58	0.49	0.63	0.63	0.63	0.63
Characteristics	<i>satisfactorily</i>	<i>good</i>	<i>satisfactorily</i>	<i>satisfactorily</i>	<i>satisfactorily</i>	<i>satisfactorily</i>	<i>good</i>	good
Indicators by partial "desirability function" Kalynivska territorial community Vinnytsia region, Khmilnytsia district								
Local budget revenues, UAH thousand	0.68	0.68	0.68	0.68	0.69	0.69	0.69	0.69
Local budget expenditures, UAH thousand	0.65	0.65	0.65	0.65	0.68	0.68	0.69	0.69
Subsidy amount, UAH thousand	0.67	0.67	0.68	0.67	0.68	0.69	0.69	0.69
Number of community residents, persons	0.67	0.68	0.68	0.68	0.68	0.69	0.69	0.69
Desirability function	0.67	0.67	0.67	0.67	0.68	0.69	0.69	0.69
Characteristics	good	good	good	good	good	good	good	good

Analyzing the obtained data of the universal indicator "desirability function" (advantages) of the assessment of the activities of three territorial communities of the central region of Ukraine, we note the positive dynamics of the forecast with an increase in the coefficient of the scale "desirability function" to the qualitative characteristic "good". To compare the obtained results of the effectiveness of the activities of three territorial communities of the central region of Ukraine, we group them and present them graphically (Table 11 and Figure 3).

Table 11. Indicators by partial "desirability function" of the effectiveness of the activities of three territorial communities of the central region of Ukraine, 2019-2023, 2025-2027.

Territorial communities	2019	2020	2021	2022	2023	2025	2026	2027
Tereshkiv territorial community, Poltava district								
Desirability function	0.60	0.66	0.68	0.69	0.68	0.68	0.69	0.69
Characteristics	satisfactorily	good	good	good	good	good	good	good
Stavyshchensk settlement territorial community, Bilotserkiv district, Kyiv region								
Desirability function	0.5722	0.6449	0.5788	0.4938	0.6293	0.6296	0.6300	0.6305
Characteristics	satisfactorily	good	satisfactorily	satisfactorily	satisfactorily	satisfactorily	good	good
Kalyniv territorial community, Vinnytsia region, Khmilnytsia district								
Desirability function	0.67	0.67	0.67	0.67	0.68	0.69	0.69	0.69
Characteristics	good	good	good	good	good	good	good	good

According to the analysis of the indicators of the desirability function of the efficiency of the activities of the three territorial communities, it is clear that all communities demonstrate stable or positive development trends in the period from 2019 to 2027. The Tereshkivska community, at the beginning of the period, had satisfactory indicators, but later growth led to the constant maintenance of consistently high results, which contributed to the improvement in the assessments. There is an overall positive dynamic with moderate growth, which allows us to assess the community's activities as "good". The Stavyshchenska community shows more fluctuations in its indicators over the years, which indicates the presence of periodic changes in the efficiency of management and financial activities. In particular, the decline in some years was accompanied by a return to satisfactory values, but by 2027 the desirability function had consistently achieved good results, which indicates an improvement in recent years. The Kalynivska community has demonstrated constant stability from the very beginning of the period. High scores of the desirability function indicate the effective activities of this community at all stages. During 2019-2027, the results remain high, providing a constant "good" characteristic (Figure 3).

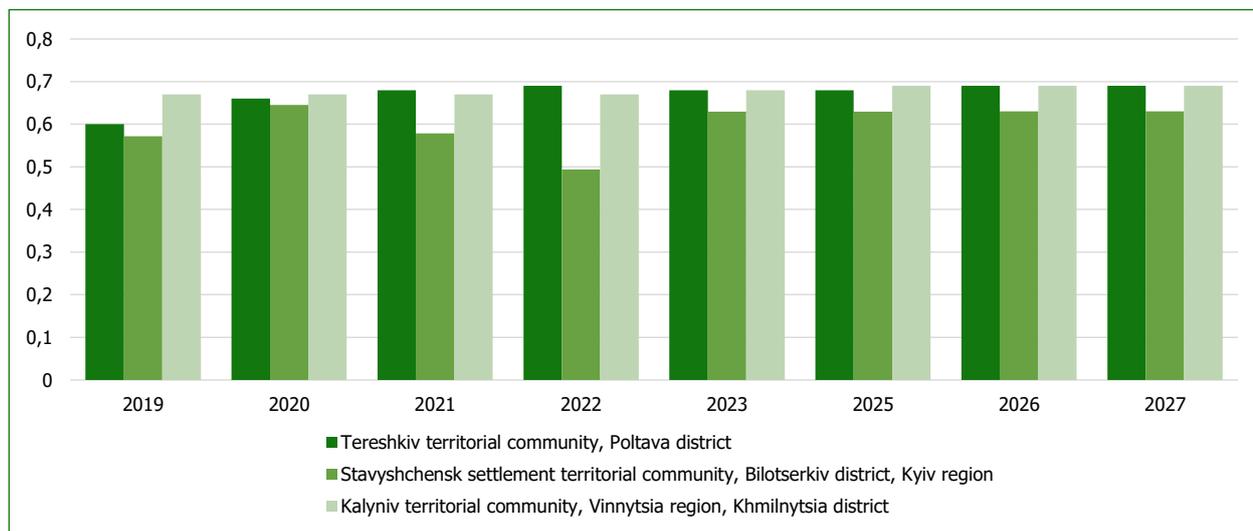


Figure 3. Indicators by partial "desirability function" of the efficiency of the activities of three territorial communities of the central region of Ukraine, 2019-2023, 2025-2027.

In general, for all communities, there is a tendency to improve or a stable level of efficiency, and the best results were recorded in the Kalynivska community, which has consistently high ratings throughout all years. So, in conclusion, we can say that the methodology for determining the desirability function of assessing the activities of three territorial communities of the central region of Ukraine over the past five years, the forecast for the next three years in combination with production linear regressions makes it possible to conduct a comprehensive financial planning of sustainable development of communities in the system of adaptive state policy and innovative administration of changes.

DISCUSSION

Despite the significant contribution of each of the studies that consider individual aspects of sustainable development, it turns out that conceptually important issues of integrating financial planning with adaptive public policy and innovative administration of changes remain insufficiently addressed. The theoretical foundations of public management, which Pstukh (2022) reveals, allow us to understand the organizational mechanisms of sustainable development, but the issues of integrating these mechanisms with modern economic and mathematical approaches to forecasting financial indicators remain on the periphery of attention. The analysis of Markina et al. (2022) demonstrates the potential of resource-saving technologies for restructuring the agricultural sector, but their research does not cover in detail the aspects of implementing such innovations into the financial management system of communities.

The study by Balanovska et al. (2022) allows us to understand the specifics of agricultural entrepreneurship in Ukraine in more depth, but the issues of applying these findings to the formation of effective financial strategies for local communities are not sufficiently addressed. Finally, the analysis conducted by Cui et al. (2024) and Ovcharenko et al. (2022) demonstrates the importance of adaptive management of urban infrastructure and spatial organization, but the integration of these aspects with financial planning remains an open question that requires additional elaboration in the context of modern challenges of adaptation and digitalization of management processes.

The study by Dankevych et al. (2020) proposes strategic planning for the sustainable development of states, focusing on administrative aspects, but it does not delve into the specifics of financial planning, which is an integral part of the successful functioning of local communities. The focus of the study is on macro-level approaches, which create a certain gap between general strategies and practical tools for managing financial flows at the local level, which requires further adaptation to the conditions of modern public policy. The work of Phonthanukitithaworn et al. (2024) demonstrates examples of eco-innovative policies in the field of waste management that contribute to resource conservation, but the comparative analysis between the EU and ASEAN regions makes it difficult to transfer these findings to the context of financial planning of Ukrainian communities.

The study by Kopishynska et al. (2024) reveals the potential of specialized information systems for comprehensive management of agroecosystem productivity, which is important for agricultural territories, but it does not sufficiently integrate these technological solutions with financial models that ensure the sustainability of community development as a holistic socio-economic entity.

The overall analysis indicates the need to develop more comprehensive models that combine elements of strategic planning, environmental innovations, modern information technologies and financial forecasting, which will allow the creation of an adaptive management system that can effectively respond to modern challenges and promote sustainable community development. Thus, there is a need to develop a comprehensive methodology that would combine innovative approaches in management, adaptive public policy, and modern economic and mathematical models to ensure the sustainable development of communities.

CONCLUSIONS

Analysis of financial planning and sustainable development of territorial communities in the context of adaptive state policy and innovative administration of changes, taking into account the indicators of the desirability function of activity efficiency, shows positive dynamics of financial stability and development of the three studied communities. Tereshkivsk territorial community, starting from a moderate level of the desirability function, demonstrates a stable improvement in efficiency during the analyzed period. The growth of this indicator to 0.69 in 2027 indicates the sustainable development of the financial policy of the community, which reflects the successful application of innovative approaches in local administration. Strengthening the indicators indicates effective adaptation to new conditions, as well as stability in the conditions of changing external and internal factors. Stavyschensk community, with greater variability in the dynamics of the desirability function, began the period from a moderate level but achieved stable growth to 0.6305 in 2027. This indicates the gradual introduction of innovations into the management and financial processes of the community, which allowed it to cope with certain difficulties and maintain positive development dynamics. The indicators have stabilized due to adaptive management and support for dynamic changes necessary for sustainable development. The Kalynivka territorial community, showing consistently high values of the desirability function from the very beginning of the analyzed period, is an example of the successful implementation of financial planning in the context of innovative administration. The indicator of 0.69 in 2027 confirms the high effectiveness of the applied strategy and policy, as well as stability in the face of external challenges. Its effectiveness indicates the right direction in financial management and adaptive response to changes, which is

the basis for the sustainable development of the community within the framework of adaptive state policy. The overall analysis confirms that the use of innovative administration and adaptive approaches in financial planning are key factors in the sustainable development of communities, allowing them to successfully overcome financial challenges and ensure the long-term effectiveness of local authorities.

The prospects for research into financial planning for sustainable community development lie in improving financial forecasting models using modern technologies, such as artificial intelligence, which will increase the accuracy of forecasts and management decisions. In particular, it is important to introduce innovative technologies into community financial management, which will promote transparency and automation of processes. Analysis of the effectiveness of financial strategies will help develop recommendations for improving management practices at the local level. Studying international experience will allow integrating successful strategies to improve financing in Ukraine. Also, a key aspect is the creation of recommendations for state policy that will ensure sustainable community development and efficient use of budget resources.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All Authors have contributed equally.

FUNDING

The Authors received no funding for this research.

CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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ФІНАНСОВЕ ПРОЄКТУВАННЯ СТАЛОГО РОЗВИТКУ ГРОМАД У СИСТЕМІ АДАПТИВНОЇ ДЕРЖАВНОЇ ПОЛІТИКИ ТА ІННОВАЦІЙНОГО АДМІНІСТРУВАННЯ ЗМІН

Дослідження присвячене аналізу та прогнозуванню фінансового проєктування сталого розвитку територіальних громад у контексті адаптивної державної політики та інноваційного адміністрування змін. На прикладі громад центрального регіону України проведено комплексний аналіз фінансових показників за останнє п'ятиріччя, що охоплює динаміку доходів, видатків, субвенцій і кількості населення. Використання методів економіко-математичного моделювання, багатофакторного лінійного регресійного аналізу та функції бажаності дозволило визначити взаємозв'язок між ключовими фінансовими параметрами та демографічними показниками, а також здійснити прогноз розвитку цих показників на наступні роки. Отримані результати свідчать про неоднорідність фінансової стійкості досліджуваних громад, виявляючи й тенденції зростання окремих бюджетних статей, і змінні співвідношення між доходною та видатковою частинами бюджетів. Застосування інтегрованого підходу сприяє ухваленню обґрунтованих управлінських рішень щодо модернізації місцевого самоврядування, забезпечення соціально-економічного розвитку та ефективного адміністрування змін на місцевому рівні.

Ключові слова: фінансове проєктування, сталий розвиток громад, адаптивна державна політика, доходи, видатки, інноваційне адміністрування, стратегії, бюджет

JEL Класифікація: H81, H83, R53, C53