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ANALYSIS OF INNOVATIVE PROJECTS OF TECHNOLOGICAL MANAGEMENT OF CLUSTER PARTNERSHIP AND BUSINESS DIVERSIFICATION DURING THE POST-WAR RECOVERY AND EUROPEAN INTEGRATION OF THE NATIONAL ECONOMY

Mariana Shkoda[1], Olga Kupchyshyna[2], Teymur Kasumov[3], Iryna Bernatska[4], Nataliia Burda[5], Olena Stepanova[6], Nadiia Zaritska[7], Yuliia Rusina[8]

[1] Assoc. Prof., Kyiv National University of Technologies and Design, 2 Mala Shiyanovska (Nemyrovycha-Danchenka) str., Kyiv, Ukraine, E-mail address: mariana.shkoda@gmail.com

[2] Assoc. Prof., Petro Mohyla Black Sea National University, 1 buil., 10 str. 68 Desantnykiv, Mykolayiv, Ukraine, E-mail address: persik366@ukr.net

[3] Postgraduate Student, Kyiv National University of Technology and Design, 2 Mala Shiyanovska (Nemyrovycha-Danchenka) str., Kyiv, Ukraine, E-mail address: kasumovtejmur1@gmail.com

[4] Assoc. Prof., Stepan Gzhytskyi National University of Veterinary Medicine and Biotechnologies, 50 Pekarska str., Lviv Ukraine, E-mail address: bernatskyj@ukr.net

[5] Assoc. Prof., Luhansk Taras Shevchenko National University, 3 Ivan Banka str., Poltava, Ukraine, E-mail address: nvburda50@gmail.com

[6] Prof. Kyiv National University of Technologies and Design, 2 Mala Shyianovska (Nemyrovycha-Danchenka) str., Kyiv, Ukraine, E-mail address: Ellen_d@i.ua

[7] Assoc. Prof., Kyiv National University of Technologies and Design, 2 Mala Shiyanovska (Nemyrovycha-Danchenka) str., Kyiv, Ukraine, E - email address: znn@knutd.edu.ua

[8] Assoc. Prof., Kyiv National University of Technologies and Design, 2 Mala Shiyanovska(Nemyrovycha-Danchenka) str., Kyiv, Ukraine, E-mail address: rusinaulia80@gmail. com

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Abstract
The article focuses on the need to deepen the analysis of innovative projects of technological management of cluster partnership and business diversification. This problem is particularly important in the context of post-war recovery and European integration of the national economy. The expediency of using Harrington's desirability (advantage) function in this analysis was determined; coefficient analysis; production regressions, etc. Approbation of the specified analysis was carried out using the activities of JSC "Nibulon" LLC, PJSC MHP (Myronivskyi Hliboprodukt) and JSC Kernel Group. The obtained results for the mentioned enterprises for the years 2017–2023 showed a positive and stable dynamic of financial and economic efficiency, which will in the future encourage the deepening of innovative projects in technological management and cluster partnership.

Keywords: *innovative projects, technological management, cluster partnership, post-war recovery, business diversification, european integration.*

JEL Codes: *C43, E61, O32.*

Introduction

The problem of analyzing innovative projects in the context of technological management of cluster partnership and business diversification is extremely important for the national economy, especially in the conditions of post-war recovery and European integration processes. It combines the desire to restore the stability and viability of the economy, adapt it to new challenges and ensure competitiveness on the global market. The cluster approach, which involves combining the efforts of various enterprises and industries, stimulates innovation

and enables small and medium-sized enterprises to more easily integrate into larger economic structures. These issues will become critically important, since it is on the basis of such partnerships that it is possible to increase investment potential, stimulate the exchange of technologies and innovative ideas, as well as effectively use available resources to increase production and create new jobs. In addition, business diversification helps reduce the risks associated with failure in certain industries and creates a more resilient and adaptive economy. Together, these directions contribute not only to recovery, but also lay the foundation for long-term development that meets the goals of European integration and the modern requirements of globalization.

Literature review

Scientific studies on the analysis of innovative projects in the field of technological management in the context of cluster partnership, business diversification, post-war recovery and European integration highlight a wide range of approaches to ensuring economic stability and competitiveness. Modern studies emphasize the importance of clustering, which allows to increase synergy between enterprises, distribute innovative risks and jointly use resources, which is especially relevant in the context of post-war economic recovery. Scientists place a key emphasis on the role of technological management, which requires the introduction of the latest technologies and management methods to increase the efficiency of business processes and adapt to international standards, which is necessary for integration into the European market [1-5].

In many works, models and methods are proposed that are useful and can be used in the process of analyzing innovative projects of technological management of cluster partnership and business diversification [6-12].

Studies also emphasize that in conditions of active management, innovation, prioritization in the development of the agricultural sector, and European integration of business, diversification is needed, which reduces dependence on individual markets and allows a faster response to global economic changes [13-18]. Scientific works on this issue highlight the importance of combining management, financial analysis with the desirability function for evaluating innovative projects, which allows more effective decision-making based on predicted performance indicators.

The study of advanced international practices and their adaptation to the conditions of the national market form the basis of recommendations for the development of cluster strategies in the post-war period, which should significantly strengthen the innovative potential of the economy in the process of integration into the European economic space [19-24].

It is important to understand the logic of combining management tools for enterprises or sectors of the economy, which are given in works [25-31]. Thus, for the analysis of innovative projects in the field of technological management, cluster partnership and business diversification, especially in the conditions of post-war recovery and European integration, a systematic approach that unites different levels of management and partnership is necessary. The cluster approach promotes the development of cooperation between business, research institutes and the state, helping to allocate resources more efficiently, accelerate the implementation of innovations and stimulate growth in strategically important industries. The combination of management tools is aimed at ensuring economic stability and competitiveness, as well as adaptation to European standards, which will contribute to faster development of the national economy and increase its integration into the European economic space. In order to deepen the practical application of our research, we also developed scientific and informational resources [32-41]. The scientific research of the authors is important, where the technologies, methods, and key aspects of the combination of tools that can be used to solve problems in complex socio-economic systems, such as clusters, are substantiated [42-43]. Considering the availability of a sufficiently broad basis for our research, we note the need for further improvement of the issues of innovative technological management projects taking into account modern realities.

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Methodical approach

In the process of research, we used a number of mathematical and statistical tools, coefficients and methods, for example: Harrington's desirability (preference) function; coefficient analysis; production regressions, etc. Thus, the use of Harrington's desirability (advantage) function and coefficient analysis of production regressions in the analysis of innovative projects is an important tool for increasing the efficiency of managerial decision-making. Such methods make it possible to evaluate not only economic, but also qualitative indicators of projects, in particular, their social, environmental and strategic impact. Harrington's desirability function allows you to obtain a single integrated indicator that takes into account multi-criteria assessments and provides the possibility of a comprehensive assessment of the project from the point of view of its compliance with the goals of innovative development and national economic security. The use of this function is especially relevant in the conditions of post-war reconstruction, when the country needs an operational assessment of the most promising and effective projects for rapid rehabilitation and economic growth. Determining the level of desirability based on the Harrington function makes it possible to comprehensively evaluate the potential results of the implementation of innovative projects, taking into account a set of various criteria, such as technological level, economic efficiency, social consequences and environmental safety. Thanks to this approach, subjectivity can be avoided, which increases objectivity and transparency in the evaluation of projects, especially in cases where the results are of strategic importance for the economic and social sphere. Coefficient analysis of production regressions, in turn, allows to identify key factors affecting the efficiency of implementation of innovative projects, which may include such aspects as the level of technological readiness, the scale of investments, the degree of interaction between enterprises in a cluster partnership and flexibility in the use of resources. Thanks to this method, it is possible to analyze which parameters have the greatest influence on the final results of the project, as well as to predict the possible economic consequences of the implementation of initiatives in the long term. The analysis of the coefficients in the production regression shows the dependencies between different variables, which allows adapting management strategies to maximize results and reduce risks in the process of project implementation, which is especially important for innovative projects within the framework of a cluster partnership, where the interaction between different subjects contributes to a faster exchange of knowledge and resources, which increases overall productivity. This approach also contributes to increasing the stability of the national economy and its adaptability in the conditions of European integration, when enterprises must meet new regulatory requirements and compete on the European market. Thanks to Harrington's desirability function and coefficient analysis of regressions, it is possible to provide a systematic assessment of innovative projects and screen out those that do not meet the goals of strategic development. In general, the analysis of innovative projects of technological management of cluster partnership and business diversification during the post-war recovery and European integration of the national economy consists in research, evaluation, analysis, forecasting and active technological management at different stages and under different conditions of the production process.

Results

In view of the presented information, let's move on to the practical part of the analysis of innovative projects of technological management of cluster partnership and business diversification during the post-war recovery and European integration of the national economy. The largest innovative and active agricultural holdings, which are innovative projects of technological management and their components are cluster partnership and business diversification, were chosen as the business entities under study: JV “Nibulon” LLC, PrJSC MHP (Myronivskyi Hliboprodukt) and JSC

Kernel-groups. The mentioned Ukrainian agricultural holdings mostly specialize in the marketing policy of grain, sunflower crops, animal feed, meat processing and product transportation.

For the analysis and modeling of innovative projects of technological management of cluster partnership and business diversification during the post-war recovery and European integration of the national economy, a coefficient toolkit was selected: marketability coefficient; coverage ratio (liquidity); net margin For example, let's analyze the dynamics of the volume of production, volume of sales, and the marketability ratio of JV "Nibulon" LLC over the past seven years. The analysis shows that during the period from 2017 to 2023, production volumes increased by 87.7 thousand tons, or by 132.58%, which indicates an overall positive trend. Production of early crops such as wheat, barley and canola also increased, showing a relative growth of 23.73%. As for late crops, such as corn, sunflower and soybeans, they showed even higher dynamics, growing by 47.07% over the entire period, which indicates a more active expansion of production volumes in this category.

The production of other crops decreased, which is reflected in a negative absolute deviation of 5 thousand tons and a relative deviation of 59.68%, which may indicate a reorientation of resources to more profitable crops. Product sales fluctuated, but overall grew by 10.09% in relative terms, indicating stable demand and sales efficiency. The marketability ratio increased by 0.23, demonstrating the improvement of commercial efficiency in the use of manufactured products, although its changes were unstable during the analyzed period. Guided by the statistical and financial reporting of the three investigated enterprises, we determine the marketability ratio, the coverage ratio (liquidity) as factor characteristics and the net margin as an effective indicator of the production activity of business entities over the past seven years (Table 1).

Table 1. Dynamics of the marketability ratio, the coverage ratio (liquidity), as factor characteristics, and the net margin, as a productive indicator of the production activity of three innovatively active agricultural holdings, 2017-2023

JV "Nibulon" LLC			
Years	Marketability coefficient, %	Coverage ratio (liquidity)	Net margin, %, Y
2017	112,05%	2,08%	-2,70%
2018	116,66%	1,90%	3,60%
2019	138,54%	1,81%	5,20%
2020	110,22%	1,50%	-6,90%
2021	142,02%	1,91%	2,10%
2022	117,36%	2,07%	2,52%
2023	134,94%	2,84%	2,79%
PJSC "Myronivsky Hliboproduct"			
Years	Marketability coefficient, %	Coverage ratio (liquidity)	Net margin, %, Y
2017	123,05%	1,94%	1,80%
2018	127,66%	2,02%	2,30%
2019	149,54%	1,08%	2,64%
2020	121,22%	1,22%	2,81%
2021	153,02%	1,90%	3,23%
2022	128,36%	1,94%	3,57%
2023	145,94%	2,02%	3,90%
AT "Kernel"			
Years	Marketability coefficient, %	Coverage ratio (liquidity)	Net margin, %, Y
2017	121,45%	1,34%	2,80%
2018	126,06%	1,57%	3,32%
2019	147,94%	1,95%	2,98%
2020	119,62%	1,98%	3,06%

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2021	151,42%	1,41%	3,15%
2022	126,76%	1,34%	3,29%
2023	144,34%	1,57%	3,34%

**Source: development based on [5, 40].*

The analysis of financial indicators of agricultural companies JV "Nibulon" LLC, PJSC "Myronivskyi Hliboprodukt" and JSC "Kernel' shows different approaches to managing marketability, liquidity and profitability. At JV "Nibulon" LLC, there is a fluctuation in the marketability ratio, and a significant decrease in 2020 indicates possible difficulties with the sale of products, which is also confirmed by the negative net margin this year. However, in 2023, the company shows positive dynamics in liquidity, which reached the highest level for the entire period, which may indicate a strengthening of the ability to cover its obligations. The indicators of PJSC "Myronivskyi Hliboprodukt" demonstrate a stable increase in the marketability ratio and a gradual improvement in the net margin. This indicates positive dynamics of commercial efficiency and increased profitability, although the company's liquidity fluctuated, falling to the lowest level in 2019, probably due to significant investments or a change in spending policy. By 2023, there was an increase in liquidity, which strengthens the overall stability of the enterprise. JSC "Kernel" demonstrates a trend towards increasing marketability and a relatively stable net margin, which remains at the level of about 3% during the analyzed years. Despite a decline in liquidity to 1.34% in 2022, the company returned to a more stable level in 2023, indicating flexibility in managing short-term liabilities. Overall, the three companies exhibit different approaches to managing financial performance, balancing between marketability stability, liquidity and profitability, reflecting their adaptability to market conditions and strategic priorities. Therefore, we calculate these coefficients of the three investigated agricultural enterprises for the last seven years, compare them and choose the best one, and make a proposal for further modeling and forecasting of innovative projects of technological management, which are the investigated agricultural associations, cluster partnerships and business diversification (Table 2).

Table 2. Coefficients of analysis of innovative technological management projects of three agricultural associations of cluster partnership and business diversification, 2017-2023

Business entities	General coefficient determinations (influence of the marketability ratio and coverage ratio (liquidity) on the value of the net margin)	Couples correlation coefficients		Kendall's rank correlation coefficient of the opposite directionality of ranks		The concordance coefficient (the influence of the marketability coefficient and of the coverage ratio (liquidity) by the value of the net margin)
		influence marketability ratio	influence coverage ratio (liquidity)	influence marketability ratio	influence coverage ratio (liquidity)	
JV "Nibulon" LLC	0,47	0,76	0,69	0,24	0,14	0,59
PJSC "Myronivsky Hliboproduct"	0,26	0,87	0,79	0,71	0,38	0,70
AT "Kernel"	0,13	0,72	0,65	0,33	-0,86	0,80

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

Pairwise correlation coefficients, Spearman's rank correlation coefficient, and Kendall's rank correlation coefficient are appropriate coefficients for the analysis of technological management innovation projects of three agricultural associations of cluster partnership and business diversification. Analyzing the coefficients of the effect of marketability and liquidity on the net margin of three agricultural associations in the context of cluster partnership and business diversification, a significant difference in the dependence between these indicators can be seen for each subject. For Nibulon JV LLC, the total coefficient of determination at 0.47 indicates a moderate relationship between marketability, liquidity and net margin, while the Kendall and Spearman correlation coefficients show a high impact of marketability on margin. However, the concordance coefficient, equal to 0.59, indicates only partial agreement between indicators, which indicates an uneven influence of factors on performance. PJSC "Myronivskyi Hliboprodukt" shows a more stable relationship: the overall coefficient of determination is 0.26, and the correlation coefficients are much higher, which indicates a closer connection of marketability and liquidity with the net margin. A concordance ratio of 0.70 indicates consistency of changes, and a high pairwise correlation between sales and margins highlights that the company is effectively using sales flows to maintain stable profitability. JSC "Kernel" has a total coefficient of determination of 0.13, which indicates a weak dependence of the net margin on marketability and liquidity. Although the correlation coefficients between the variables suggest some positive relationship, the concordance value of 0.80 and the reduced pairwise coefficient for liquidity indicate a much smaller effect of marketability. This indicates other factors that can significantly affect the company's net margin, reducing the importance of commodity and liquid indicators in its business model. In the general context, the data show that companies have different approaches to managing marketability and liquidity, which is reflected in the different dependence of these factors on the financial result. Next, we forecast the factors and performance indicators of the three agricultural associations for the next period of 2025. (Table 3).

Table 3. Forecasting and characteristics of factor characteristics and the effective indicator of the net margin of innovative technological management projects of three agricultural associations of cluster partnership and business diversification, 2025

Production regression of net margin	Marketability coefficient, %	Characteristic	Coverage ratio (liquidity)	Characteristic	Net margin, %	Characteristic
JV "Nibulon" LLC						
$\hat{Y}$=-0,26+0,19X_1+2,01 X_2	137,68%	growth on 2,74%	3,50	growth on 0,007 %	3,58%	growth on 0,79%
PJSC "Myronivsky Hliboproduct"						
$\hat{Y}$=-0,01+0,03X_1+0,37 X_2	148,68%	growth on 2,74 %	2,89	growth on 0,009 %	4,45%	growth on 0,54%
AT "Kernel"						
$\hat{Y}$=0,0295+0,0028X_1-0,1224X_2	147,08%	growth on 2,74%	2,54%	growth on 0,97 %	3,58%	growth on 0,24%

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

According to the results of data processing of the forecasting of the main factor characteristics and the performance indicator of three economic entities, the growth of the marketability ratio (on average by 2.74%) and the coverage ratio (liquidity) (on average by 0.33 percentage points) as a result the net margin will increase (on average by 0.52%). Graphically, the actual and forecast values of the net margin of three agricultural associations for the last period are presented in fig. 1-3.

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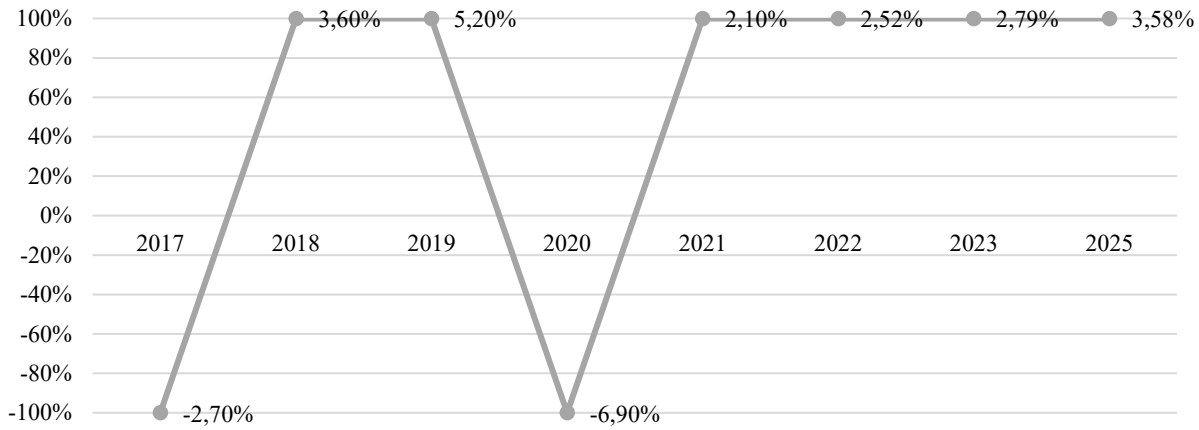

Figure 1. Actual and forecast value of net margin JV "Nibulon" LLC, 2019-2023, 2025

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

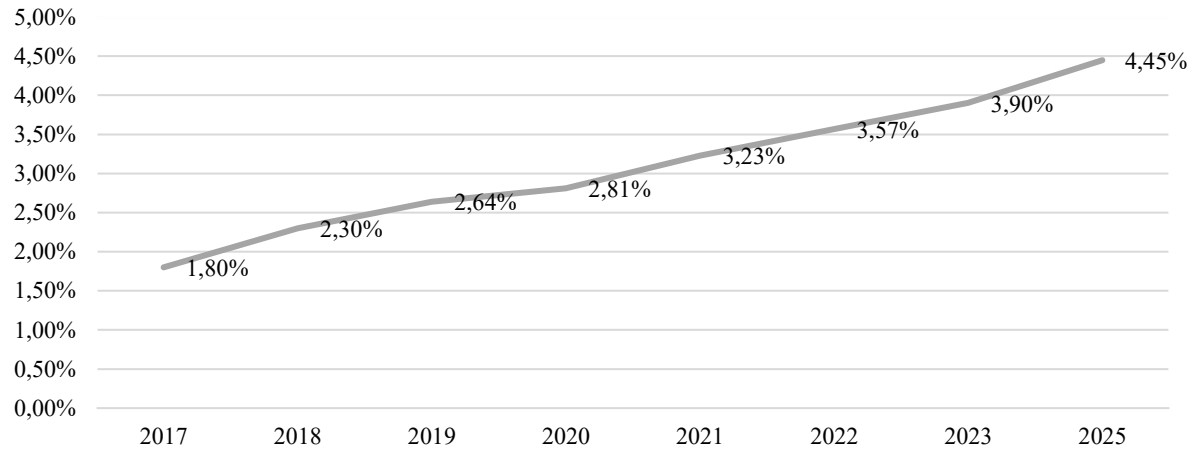

Figure 2. Actual and forecast value of net margin Myronivskyi Hliboproduct PJSC, 2019-2023, 2025

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

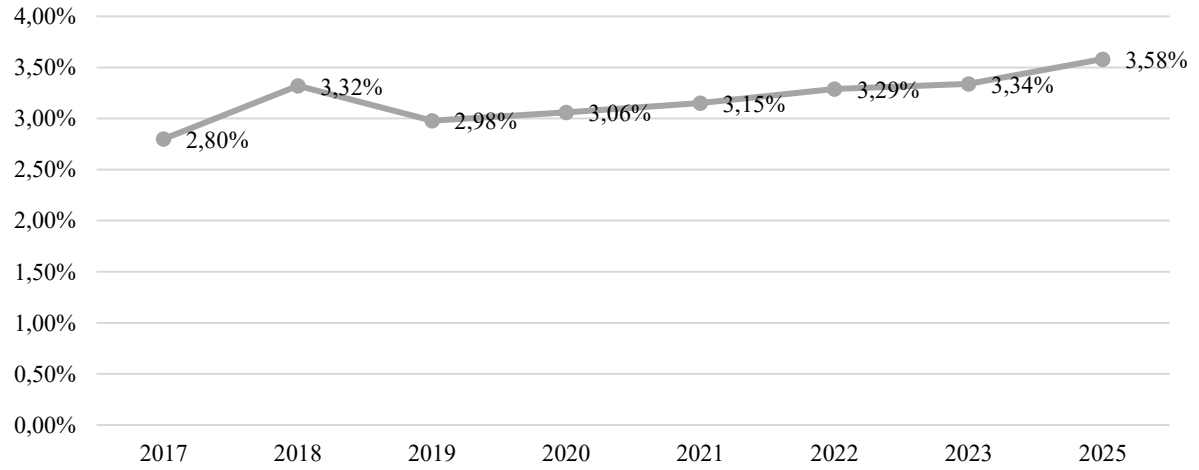

Figure 3. Actual and forecast value of the net margin of JSC "Kernel", 2019-2023, 2025 pp.

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

For comparative analysis, it is possible to forecast the overall coefficient of determination and pairwise correlation coefficients of three agricultural associations (table 4).

Table 4. Forecast of the total coefficient of determination and paired correlation coefficients of three agricultural associations, 2025

Business entities	General coefficient determinations (the influence of the marketability ratio and the coverage ratio (liquidity) on the value of the net margin)	Couples correlation coefficients	
		influence marketability ratio	influence coverage ratio (liquidity)
JV "Nibulon" LLC	0,48	0,78	0,71
PJSC "Myronivsky Hliboproduct"	0,51	0,91	0,88
AT "Kernel"	0,25	0,89	0,75

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

Table 4 predicts the impact of marketability and liquidity ratios on the net margin of three agricultural enterprises. The total coefficient of determination shows how strongly these two indicators explain the variation in net margin. Thus, for PJSC "Myronivskyi Hliboprodukt" this ratio is the highest (0.51), which means that the company's net margin is most dependent on marketability and liquidity indicators. The correlation coefficients with marketability (0.91) and liquidity (0.88) are very high here, meaning that both factors have a strong positive impact on margins. The total coefficient of determination is slightly lower (0.48) at JV "Nibulon" LLC, which indicates a moderate dependence of the margin on these indicators. The effect of marketability (0.78) here turned out to be slightly higher than the effect of liquidity (0.71), indicating a greater effect of marketability on the margin. JSC "Kernel" has the lowest overall coefficient of determination (0.25), which indicates a smaller role of marketability and liquidity in margin formation, possibly due to the influence of other significant factors. At the same time, the correlation coefficients with marketability (0.89) and liquidity (0.75) here still remain high, which indicates a strong positive relationship between these indicators and net margin. In general, PJSC "Myronivskyi Hliboprodukt" has the strongest dependence of the net margin on both factors, while JSC "Kernel" net margin depends to a lesser extent on these indicators. This may indicate a different business model or other factors that significantly affect the company's margin.

Taking into account the orientation towards the innovative development of enterprises under analysis, it is possible to propose the Harrington desirability (advantage) function. Harrington's desirability function allows you to translate qualitative indicators into a quantitative scale from 0 to 1, where a value of 1 means complete desirability (preference), and a value close to 0 indicates non-compliance. In the context of the analysis of innovative projects for technological management in the conditions of cluster partnership, business diversification and post-war recovery, this function becomes critical. It allows for a comprehensive assessment of projects in view of their ability to meet the strategic goals of economic recovery and integration into the European market. This approach makes it possible to measure the desirability of the project according to a number of parameters: economic feasibility, innovativeness, resistance to external risks and the ability to quickly adapt to the new requirements of European markets. Thanks to the Harrington function, it is possible to determine how close the project is to the ideal from the point of view of the given criteria, helping to rank it according to the level of priority for investment or implementation. In the process of post-war recovery and European integration, such a tool is important for the effective distribution of limited resources, contributing to the adoption of sound management decisions.

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To calculate the Harrington scale, the authors chose the same factors and performance indicators that were used previously:

- marketability ratio, %;
- coverage ratio (liquidity);
- net margin, %.

As a result of calculations of dimensionless values of evaluation indicators and indicators according to Harrington's partial desirability function of three business entities for the last time, the characteristics of their activity were obtained. In particular, for JV "Nibulon" LLC we get (Table 5).

Table 5. Indicators according to Harrington's partial desirability function of "Nibulon" LLC, 2017-2023

Indicators	2017	2018	2019	2020	2021	2022	2023
Marketability coefficient, %	0,65	0,66	0,70	0,64	0,71	0,66	0,69
Coverage ratio (liquidity)	0,62	0,60	0,59	0,55	0,60	0,62	0,69
Net margin, %, Y	0,12	0,69	0,79	0,00	0,57	0,61	0,63
Harrington function	0,46	0,65	0,69	0,40	0,63	0,63	0,67
Characteristic	*satisfactorily*	*good*	*good*	*satisfactorily*	*satisfactorily*	*satisfactorily*	*good*

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

In the period from 2017 to 2023, the Harrington desirability function for Nibulon JV LLC reflects the changing dynamics of financial performance indicators, such as the marketability ratio, the coverage ratio (liquidity) and the net margin. The level of desirability ranged from "satisfactory" to "good", indicating fluctuations in the company's overall financial stability and performance. In 2019, the desirability index reached its highest level (0.69), corresponding to a rating of "good", probably due to increased marketability (0.70) and net margin (0.79). 2020 saw a decline in desirability to 0.40 ("satisfactory"), coinciding with the lowest margin (0.00), likely due to negative external economic factors or internal challenges. During 2022, despite the difficult economic situation, the desirability function remained stable at the level of 0.63 ("satisfactory"), which emphasizes the sustainability of the company (Fig. 4).

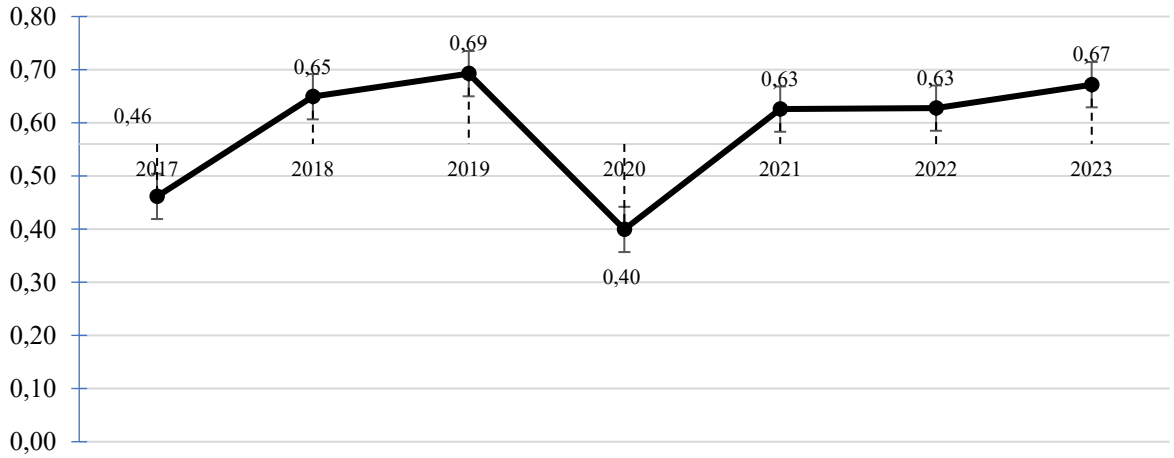

Figure 4. Indicators according to Harrington's partial desirability function of "Nibulon" LLC, 2017-2023

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

The overall trend points to a gradual recovery until 2023 with a score of 0.67, which again corresponds to the "good" level, highlighting the company's adaptability to changing conditions and its ability to maintain relative financial stability.

Indicators according to Harrington's partial desirability function of PJSC "Myronivskyi Hliboprodukt" are shown in Table 6.

Table 6. Indicators according to Harrington's partial desirability function PJSC "Myronivskyi Hliboprodukt", 2019-2023

Indicators	2017	2018	2019	2020	2021	2022	2023
Marketability coefficient, %	0,64	0,65	0,69	0,64	0,69	0,65	0,68
Coverage ratio (liquidity)	0,68	0,69	0,56	0,58	0,68	0,68	0,69
Net margin, %, Y	0,53	0,57	0,60	0,61	0,65	0,67	0,69
Harrington function	0,62	0,64	0,61	0,61	0,67	0,67	0,69
Characteristic	*satisfactorily*	*good*	*satisfactorily*	*satisfactorily*	*good*	*good*	*good*

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

The indicators of PJSC "Myronivskyi Hliboproduct" for 2019-2023 reflect stable financial dynamics with improvement in key aspects. The marketability ratio increased with some fluctuations, reaching a value of 0.68 in 2023, which indicates the effective sale of products on the market. The coverage ratio (liquidity) stabilized at 0.69 through 2023, demonstrating the company's ability to effectively manage liabilities. The net margin indicator increased from 0.60% in 2019 to 0.69% in 2023, indicating an increase in profitability (Figure 5).

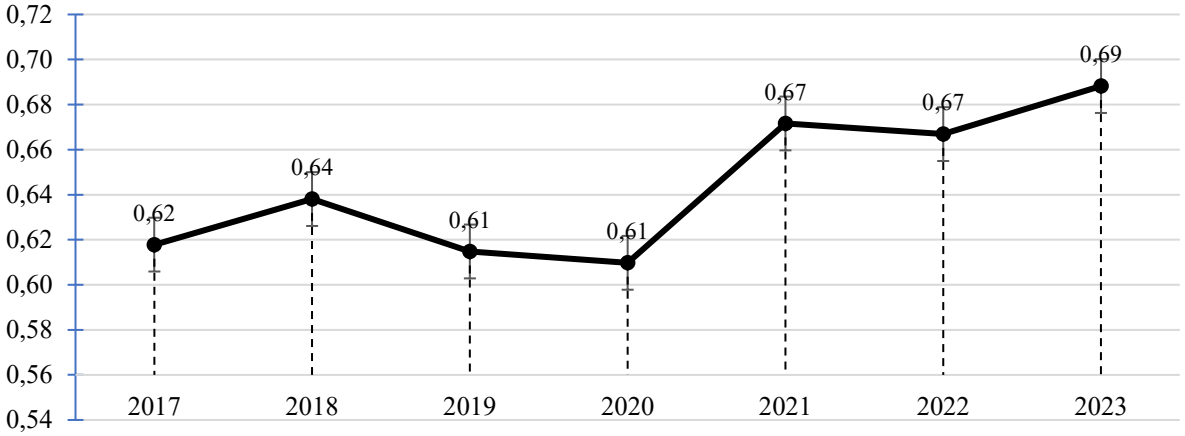

Figure 5. Indicators according to Harrington's partial desirability function of Myronivskyi Hliboproduct PJSC, 2019-2023

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

The Harrington desirability function of PJSC "Myronivskyi Hliboprodukt" also showed an improving trend, rising to 0.69 in 2023, with the character of indicators "good" in the past three years, indicating the strengthening of the company's overall financial stability and efficiency. We will analyze similar indicators for JSC "Kernel", 2019-2023 (Table 7).

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Table 7. Indicators according to Harrington's partial desirability function of JSC "Kernel", 2019-2023

Indicators	2017	2018	2019	2020	2021	2022	2023
Marketability coefficient, %	0,64	0,65	0,69	0,64	0,69	0,65	0,68
Coverage ratio (liquidity)	0,60	0,64	0,69	0,69	0,61	0,60	0,64
Net margin, %, Y	0,65	0,69	0,66	0,67	0,68	0,69	0,69
Harrington function	0,63	0,66	0,68	0,67	0,66	0,65	0,67
Characteristic	*satisfactorily*	*good*	*good*	*good*	*good*	*good*	*good*

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

Data for the years 2019–2023 for JSC "Kernel" reflect sustainable financial efficiency and high stability of key indicators. The marketability ratio remained at a high level, reaching 0.68 in 2023, which indicates a stable sales volume. The coverage ratio (liquidity) fluctuated but remained in the range of 0.60-0.69, demonstrating the company's ability to maintain stable liquidity. The net margin remained at the level of about 0.69% in 2022-2023, which indicates stable profitability of the company (Fig. 6).

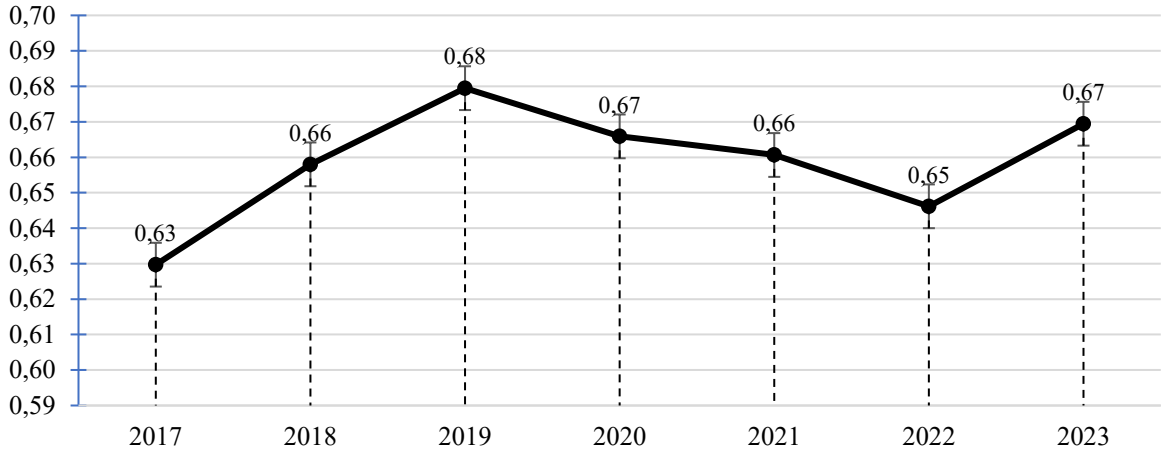

Figure 6. Indicators according to Harrington's partial desirability function of Kernel JSC, 2019-2023

**Source: development based on [5, 6, 7, 30, 31, 40, 41].*

Harrington's desirability function from 2019 to 2023 of JSC "Kernel" remained at the "good" level, showing values in the range of 0.65-0.68, which indicates a high level of satisfaction with financial indicators and stability of the company's overall performance. It is possible to draw a conclusion about the effectiveness of the researched economic entities, as evidenced by the indicators based on the partial desirability function of Harrington. This is particularly well reflected in the indicators of PJSC "Myronivskyi Hliboprodukt" and JSC "Kernel" over the past seven years. LLC JV "Nibulon" also shows positive performance indicators.

Conclusions

The summary of the analysis of the indicators of JV "Nibulon" LLC, PJSC "Myronivskyi Hliboprodukt" and JSC "Kernel" for 2017-2023 reflects the stable and positive dynamics of their financial efficiency, which will contribute to innovative projects in technological management and cluster partnership. High and consistently improving indicators of

marketability, liquidity and net margin indicate the ability of companies to adapt to market changes, maintaining stable profitability, which is an important factor for economic recovery and integration into the European market. The value of Harrington's desirability function, being mostly at the "good" level, indicates their readiness to participate in initiatives aimed at business diversification and effective partnership in post-war recovery, which will strengthen the technological capacity of the national economy in the context of European integration.

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