

DOI: 10.31319/2709-2879.2026iss1(12).364186pp115-122  
UDC 005.8:331.1

**Cherniavska Iryna**, PhD in Economics, Associate Professor, Associate Professor at Department of Management

Dniprovsky State Technical University, Kamianske

ORCID ID: 0000-0002-2954-1156

e-mail: eov-eco@ukr.net

**Popova Liudmyla**, PhD (Pedagogy), Associate Professor, Associate Professor of Department of English for Engineering 1

National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», Kyiv

ORCID ID: 0000-0003-3764-3870

e-mail: liudmyla.popova@edu.kpi.ua

**Barannik Olha**, Master's degree student

Dniprovsky State Technical University, Kamianske

ORCID ID: 0009-0000-0607-4068

e-mail: ooolihka@gmail.com

**Чернявська І.М.**, кандидат економічних наук, доцент, доцент кафедри менеджменту Дніпровський державний технічний університет, м. Кам'янське

**Попова Л.М.**, кандидат педагогічних наук, доцент, доцент кафедри англійської мови технічного спрямування № 1

Національний технічний університет України «Київський політехнічний інститут імені Ігоря Сікорського», м. Київ

**Баранник О.С.**, здобувач вищої освіти другого (магістерського) рівня

Дніпровський державний технічний університет, м. Кам'янське

#### PERSONNEL AS A KEY FACTOR IN ENSURING PROJECT EFFICIENCY: THEORETICAL AND METHODOLOGICAL ASPECT

#### ПЕРСОНАЛ ЯК КЛЮЧОВИЙ ФАКТОР У ЗАБЕЗПЕЧЕННІ ЕФЕКТИВНОСТІ ПРОЄКТІВ: ТЕОРЕТИКО-МЕТОДОЛОГІЧНИЙ АСПЕКТ

*The article explores theoretical and methodological approaches to analyzing the impact of the human factor on the effectiveness of project activities. Key indicators of project effectiveness are systematized, including adherence to deadlines, budget discipline, quality of results, level of stakeholder satisfaction, strategic alignment and stability of team functioning. It is established that staff motivation, communication effectiveness, professional competence, quality of team interaction and leadership play a decisive role. A conceptual model of the impact of the human factor on project results is proposed, reflecting the relationship between motivation, communication, competence and efficiency of resource use. Directions for improving project activity efficiency and the feasibility of comprehensive staff assessment are substantiated.*

**Key words:** *personnel, human factor, project effectiveness, project activity, communication, competencies, team interaction.*

*Персонал є ключовим чинником ефективності проєктної діяльності, оскільки саме людський ресурс забезпечує прийняття управлінських рішень, ефективну комунікацію, адаптацію до змін та досягнення поставлених цілей. У статті розглянуто теоретичні та методологічні підходи до аналізу впливу людського чинника на результати реалізації проєктів. Систематизовано основні чинники ефективності проєктів, до яких віднесено дотримання строків реалізації, бюджетну дисципліну, якість результату, рівень задоволеності стейкхолдерів, стратегічну відповідність та стабільність функціонування команди. Встановлено, що визначальний вплив на ці показники мають мотивація персоналу, ефективність комунікації, рівень професійної компетентності, якість командної взаємодії.*

Запропоновано концептуальну модель впливу людського фактору на результати проектної діяльності, яка відображає взаємозв'язок між мотивацією, комунікацією, компетентністю, лідерством та ефективністю використання ресурсів. Дана модель дозволяє більш глибоко зрозуміти механізми впливу персоналу на результативність проектів і може бути використана як теоретична основа для подальших досліджень. Визначено основні напрями підвищення ефективності проектної діяльності, серед яких доцільно виділити розвиток комунікативних та лідерських навичок, впровадження ефективних систем мотивації в проектних командах, удосконалення підходів до оцінювання компетентностей на етапі формування команди, розвиток організаційної культури, заснованої на довірі, відкритості та співпраці.

Методологічний аналіз показав доцільність використання комплексного підходу до оцінювання впливу персоналу, що поєднує якісні та кількісні методи дослідження. Такий підхід забезпечує можливість врахування як поведінкових характеристик, так і формалізованих показників ефективності, що підвищує об'єктивність отриманих результатів. Зроблено висновок, що підвищення ефективності проектної діяльності неможливе без удосконалення системи управління персоналом, що зумовлює необхідність подальшого розвитку наукових і практичних підходів у цій сфері.

**Ключові слова:** персонал, людський фактор, ефективність проектів, проектна діяльність, мотивація, комунікація, компетентності, командна взаємодія, лідерство.

**JEL Classification:** M12, M54, O15

**Introduction.** The effectiveness of project activities largely depends on the human factor, which ensures management decision-making, communication, adaptation to changes and achievement of goals. Despite the importance of personnel, in the practice of project management, insufficient attention is paid to the systematic analysis of its impact on results. This creates a need for theoretical and methodological research into the mechanisms of interaction of motivation, competence, communication and leadership in increasing the effectiveness of projects.

**Analysis of recent research and publications.** In modern scientific literature, human resource management is considered not only as a functional component of an organization's activities, but also as an important strategic tool for creating project value, which affects their effectiveness and sustainability. At the same time, the results of scientific research indicate a close relationship between the implementation of effective HR practices and an increase in the level of project success, as well as their increasing importance for key stakeholders [1, 2]. Therefore, the problem of scientific substantiation of the role of personnel as a key factor in project effectiveness is relevant and requires systematic methodological analysis.

An important theoretical basis for the study is the provisions of the behavioral theory of management, the theory of human capital and the concept of a resource-oriented approach, according to which personnel are considered as a strategic resource that forms the competitive advantages of the organization [4, 5]. According to these approaches, it is unique knowledge, competencies and the ability to interact in a team that ensure the long-term effectiveness of project activities. In addition, modern research actively uses a competency-based approach, which allows considering personnel through the prism of professional, social, and managerial competencies that directly affect project results [6].

**Formulation of the article's goals.** The purpose of the article is to substantiate the role of personnel as a key factor in the effectiveness of project activities and to identify methodological approaches to the scientific analysis of the impact of the human factor on project results.

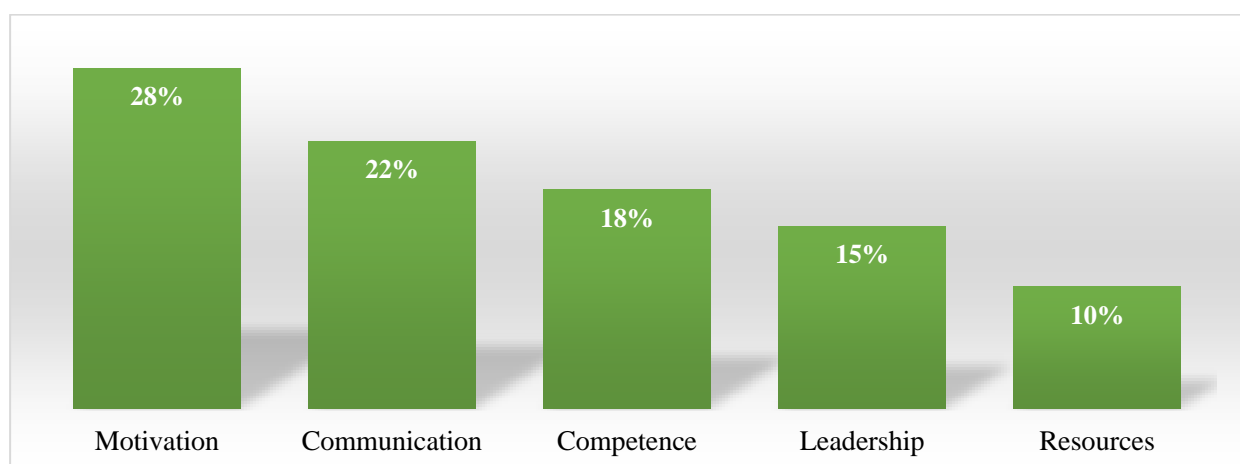
**Presentation of the main material.** In the context of rapidly changing external environment, competitive pressure and development of digital technologies, project management has become one of the main components of successful functioning of organizations in the manufacturing and service sectors of the economy. At the center of this process is personnel as a key resource, on which the ability of the organization to adapt to rapid changes, effectively perform project tasks and achieve planned results depends. At the same time, practice shows that even with sufficient funding and technological resources, projects can be unsuccessful due to problems related to the human factor. Modern research confirms that the effectiveness of project activities largely depends on the quality of

personnel management. In particular, the communication, organizational and interpersonal skills of the team directly affect the achievement of project goals and compliance with deadlines and budget [1]. In addition, research results in various fields indicate that the leadership qualities of a project manager, in particular, the ability to establish effective interaction in a team, motivate participants, ensure high-quality communication and timely adoption of management decisions, are determining factors in the successful implementation of projects and the achievement of planned results [2, 3].

Personnel in a project environment are not only a resource, but also an active management subject that forms organizational culture, makes management decisions and ensures the achievement of strategic goals. Within the framework of a systems approach, a project is considered as a holistic socio-economic system that includes interrelated elements: resources, processes, organizational structure, technologies and corporate culture. Personnel in this system perform an integrating function, ensuring interaction between all elements and forming feedback loops. The methodological basis of the study is also a synergistic approach, according to which the effectiveness of a project is formed not only under the influence of individual factors, but as a result of their interaction. In this context, personnel are considered as an element that generates a synergistic effect through a combination of individual competencies, team interaction and leadership. It is the consistency of actions and effective communication that ensure the increase in the effectiveness of project activities beyond the sum of the individual efforts of participants [7].

Employees are carriers of knowledge, competencies, values, and norms of behavior that determine the effectiveness of the project. At the same time, personnel ensure coordination of actions, adaptation to changes, and self-regulation of the system, which affects its stability and effectiveness. In our opinion, it is advisable to clarify the interpretation of the role of personnel in the system of project effectiveness factors, considering it not only as a resource, but as a key integration element of project activities. It is the personnel that ensures consistency and interaction between functional subsystems, contributes to the formation of flexibility and adaptability of management processes, and also increases the ability of the project to respond promptly to changes in the external and internal environment. This approach corresponds to modern trends in project management, focused on human-centricity, team interaction, and dynamic decision-making. It is advisable to consider the effectiveness of the project as a comprehensive characteristic that includes meeting deadlines, budget execution, ensuring the quality of the result, the level of stakeholder satisfaction, compliance with the strategic goals of the organization, as well as the stability and effectiveness of the team's work. This approach allows for a more complete consideration of the impact of the human factor on the results of project activities.

In order to generalize the factors that affect the effectiveness of projects, their conditional ranking is proposed based on the analysis of modern scientific sources. The results of the generalization are presented in Fig. 1



*Fig. 1. Structure of factors influencing project effectiveness*

*Source: constructed by the authors based on [1, 2, 4]*

As can be seen from Fig. 1, the greatest impact on the effectiveness of the project is the motivation of the staff, which confirms the key role of internal incentives in achieving results. Communication and the level of professional competence of employees also have a significant impact, while resource and procedural factors play a supporting, albeit necessary role in ensuring the implementation of the project. This indicates that it is the human factor that is decisive in the system for ensuring the effectiveness of project activities, since it forms the team's ability to take coordinated actions, respond quickly to changes and achieve set goals. At the same time, an effective combination of motivational, communication and competence components creates the basis for increasing the effectiveness of project management as a whole. From a managerial point of view, this means the need to increase attention to the development of the staff motivation system, improve internal communications and invest in increasing the professional competence of employees. The implementation of such measures will contribute to increasing the flexibility of the project team, improving the quality of management decisions and, as a result, increasing the overall effectiveness of projects.

In order to systematize the impact of the human factor on the results of project activities, a conceptual model has been proposed (see Fig. 2). This model reflects the relationship between key elements of personnel management and project performance indicators. According to it, staff motivation determines the level of employee involvement in the implementation of project tasks, which directly affects the quality of communication in the team. Effective communication, in turn, contributes to increasing the level of professional competence and developing team interaction, which ensures the consistency of the actions of project participants. An important role in this system is played by the leadership of the project manager, who coordinates the team's activities, forms a favorable psychological climate and promotes the effective use of resources



Fig. 2. Conceptual model of the impact of personnel on project effectiveness  
Source: developed by the authors

As can be seen from Fig. 2, the key factors of project effectiveness are staff motivation, communication, level of competence and leadership, which together determine the effectiveness of project activities. The cumulative impact of these factors determines the achievement of key indicators of project effectiveness, in particular, adherence to deadlines, budget, quality of results and level of stakeholder satisfaction. To clearly reflect the reasons for project failures, they were generalized and systematized. The structure of the main causal factors of project failures is presented in Fig. 3.

As can be seen from Fig. 3, the largest share among the causes of failures is occupied by the human factor, which indicates the determining role of the quality of personnel management in ensuring the effectiveness of project activities. Technical problems and budgetary constraints have a

smaller specific weight, which emphasizes the dominance of managerial and behavioral aspects over purely resource factors. To study the impact of personnel on project effectiveness, it is advisable to use a comprehensive approach, including:

- system analysis;
- process approach;
- behavioral approach;
- comparative analysis;
- statistical methods of data generalization;
- expert evaluation.

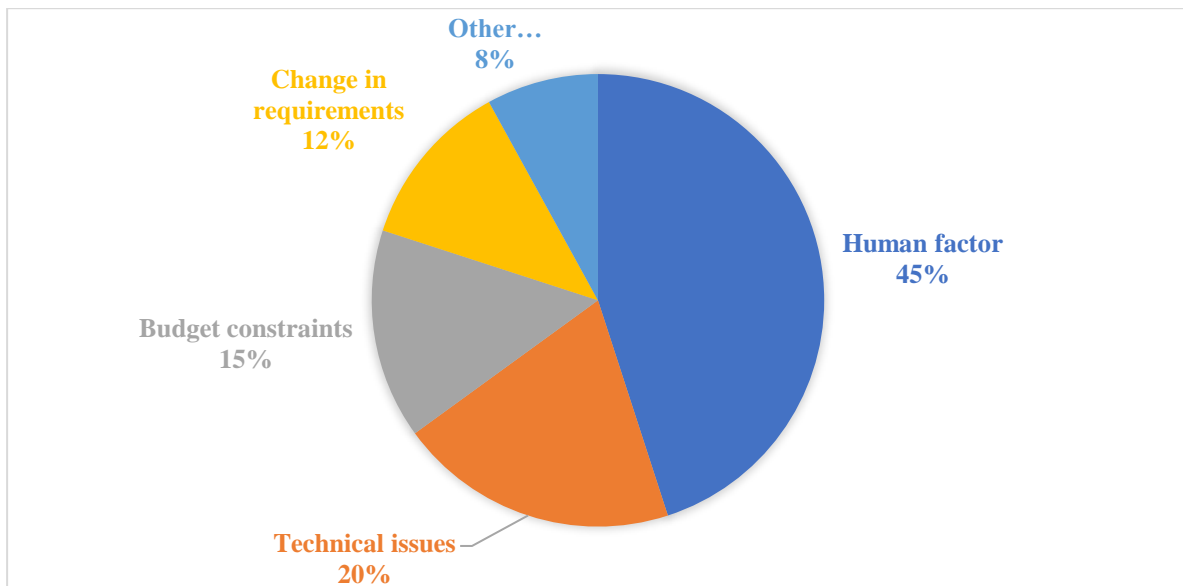


Fig. 3. Factors leading to a decrease in project efficiency

Source: constructed by the authors based on a sociological survey of a leading enterprise

From a methodological point of view, the study is based on the principles of interdisciplinarity, which involves the integration of approaches from management, psychology, sociology and labor economics [8, 9]. This allows us to more fully reveal the nature of the human factor as a complex multilevel phenomenon, including both rational and behavioral components. At the same time, it is important to apply the principle of complementarity of methods, according to which qualitative and quantitative methods are not opposed, but mutually complement each other, ensuring the integrity and reliability of scientific results. The research methodology involves a combination of qualitative and quantitative methods. Qualitative methods, in particular interviews, expert assessment and case analysis, allow for a deeper study of behavioral aspects of personnel management, such as motivation, communication and leadership. Quantitative methods, including statistical analysis and modeling, provide the opportunity to assess the impact of individual factors on the results of project activities.

As can be seen from Table 1, the study of the impact of personnel on the effectiveness of projects requires the use of a comprehensive methodological approach, which involves a combination of qualitative and quantitative methods of analysis. This is due to the multifaceted nature of the human factor, which includes both formalized performance indicators and behavioral characteristics that are difficult to directly measure. Qualitative research methods, in particular expert assessment, interviews and analysis of specific situations (case studies), allow for a deeper disclosure of the internal mechanisms of personnel influence on the results of project activities. They are aimed at identifying motivational factors, communication features, the level of trust in the team, leadership style and other behavioral aspects that shape the effectiveness of interaction between project participants. These

methods provide an understanding of cause-and-effect relationships that cannot be fully explained using quantitative indicators. At the same time, quantitative methods, statistical analysis, modeling and generalization of empirical data, allow for an objective assessment of the impact of individual factors on project results. They provide the ability to determine the relationships between the level of staff competence, communication efficiency, motivation level and such indicators as meeting deadlines, budget discipline and quality of the result. The use of quantitative methods increases the reliability of the study and allows generalization of the results obtained.

*Table 1. Methods for studying the impact of personnel on project effectiveness*

Method	Essence of the method	Scope of application	Advantages	Limitations
System analysis	Consideration of the project as a holistic system of interconnected elements	Analysis of the interaction of personnel with resources, processes and structure	Comprehensiveness of the approach, taking into account all factors	Complexity of implementation and the need for a large amount of information
Process approach	Study of the sequence and execution of project processes	Assessment of the role of personnel at different stages of the project	Clarity of structure, logical analysis	May not take into account behavioral aspects
Behavioral approach	Analysis of motivation, communication, leadership and team interaction	Research on the human factor in the team	Deep understanding of personnel behavior	The complexity of quantitative measurement
Statistical methods	Using quantitative data to identify dependencies	Analysis of the impact of HR factors on project results	Objectivity of results, possibility of generalization	The need for a large sample of data
Expert evaluation	Assessment of factors based on expert opinion	Determination of the significance of influencing factors	Practical orientation, speed of obtaining results	Subjectivity of assessments
Comparative analysis	Comparison of different projects or approaches	Identification of effective HR practices	Ease of application, clarity	Limited in-depth analysis
Modeling	Building models of the influence of factors on results	Forecasting the effectiveness of projects	Possibility of forecasting and optimization	Complexity of building models

*Source: created by the authors based on [1, 2, 4, 6]*

Thus, the combination of qualitative and quantitative methods allows for a comprehensive study of the impact of personnel on the effectiveness of project activities, taking into account both behavioral and formalized aspects. This creates a scientifically sound basis for making management decisions and increasing the effectiveness of project implementation. The results obtained confirm the

feasibility of further research into the role of personnel as a key factor in project effectiveness and the need to improve approaches to human resource management in the modern project environment.

**In conclusion.** The study confirmed that personnel is an active factor that shapes the adaptability and stability of the project system. It was found that a comprehensive assessment of the behavioral and professional characteristics of employees increases the objectivity of determining the effectiveness of projects. Key areas of development of personnel management were identified, including the formation of soft skills, motivation systems and organizational culture, which contributes to increasing the effectiveness of project activities.

The results obtained have theoretical and methodological significance, as they expand scientific ideas about the mechanisms of influence of the human factor on the effectiveness of project activities and form the basis for the further development of integrated approaches to personnel management in the project environment.

### References

- [1] Ayinkamiye V., Akimana C. (2025) The Role of Project Management Skills in Achieving Project Success: Evidence from USAID Rwanda. *International Journal of Research and Innovation in Social Science*, vol. 9, is. 14, pp. 187–200. DOI: <https://doi.org/10.1080/15578771.2024.2359378>
- [2] Rehan A., Thorpe D., Heravi A. (2025) An empirical study on Project Managers' leadership behavioral practices impacting Project success – the Australian construction sector. *International journal of construction education and research*, vol. 21, no. 2, pp. 164–188. DOI: <https://doi.org/10.1080/15578771.2024.2359378>
- [3] Hrytsyk Yu. Jo. (2025) Instytutsiina pidtrymka vprovadzhennia suchasnykh HR-praktyk v orhanakh mistsevoho upravlinnia z vrakhuvanniam dosvidu krain Yes [Institutional support for the implementation of modern HR practices in local self-government bodies considering the experience of EU countries]. *Tavriyskyi naukovyi visnyk. Serii: Publichne upravlinnia ta administruvannia*, no. 4, pp. 10–17. DOI: <https://doi.org/10.32782/tnv-pub.2025.4.2>
- [4] Pohorielova T.O. (2022) Upravlinnia personalom yak faktor pidvyshchennia efektyvnosti diialnosti pidpriemstv [HR Management as a factor of increasing the efficiency of enterprises]. *Visnyk Natsionalnoho tekhnichnoho universytetu «Kharkivskyi politekhnichniy instytut» (ekonomichni nauky)*, no. 4, pp. 17–21. DOI: <https://doi.org/10.20998/2519-4461.2022.4.17>
- [5] Duha S. (2025) Henezys teorii liudskoho kapitalu: vid klasychnykh zasad do vyklykiv tsyfrovoy ery [Genesis of the human capital theory: from classical foundations to the challenges of the digital era]. *Ekonomika i upravlinnia*, vol. 2, pp. 27–32. DOI: <https://doi.org/10.32782/2312-7872.2.2025.3>
- [6] Marukhlenko O., Rudenko V., Ruban D. (2025). Proiektnyi menedzhment u konteksti staloho rozvytku ta ESG-stratehii [Project management in the context of sustainable development and esg strategies]. *Ekonomika ta suspilstvo [Online]*, vol. 79. DOI: <https://doi.org/10.32782/2524-0072/2025-79-180>
- [7] Danchenko E., Koreiba A. (2022) Analiz synerhetychnoho pidkhodu do upravlinnia proiektamy [Analysis of synergetic approach to project management]. *Visnyk Natsionalnoho tekhnichnoho universytetu «KhPI»*. Serii: *Stratehichne upravlinnia, upravlinnia portfeliamy, prohramamy ta proektamy*, no. 2(6), pp. 30–34. DOI: <https://doi.org/10.20998/2413-3000.2022.6.6>
- [8] Kononov I., Nuzhna Ju., Khobta S. (2025). Mizhdystsyplinarni doslidzhennia: mozhlyvosti ta metodolohichni problemy [Interdisciplinary Research: Opportunities and Methodological Problems]. *Naukovo-teoretychnyi almanakh Hrani*, no. 28(5), pp. 105–117. DOI: <https://doi.org/10.15421/172607>
- [9] Popova L.M. (2022). Ekzemplifikatsiia terminu «transversalnist» u suchasnomu naukovomu prostori cherez pryzmu pidhotovky maibutnoho fakhivtsia [Exemplification of the term “transversality” in the modern scientific space through the prism of training a future specialist]. *Innovatsiina pedahohika*, iss. 48, vol. 2, pp. 165–169. DOI: <https://doi.org/10.32843/2663-6085/2022/48.2.32>

**Список використаної літератури**

1. Ayinkamiye V., Akimana C. (2025) The Role of Project Management Skills in Achieving Project Success: Evidence from USAID Rwanda. *International Journal of Research and Innovation in Social Science*. Vol. 9. Is. 14. Pp. 187–200. DOI: <https://doi.org/10.1080/15578771.2024.2359378>
2. Rehan A., Thorpe D., Heravi A. (2025) An empirical study on Project Managers' leadership behavioral practices impacting Project success – the Australian construction sector. *International journal of construction education and research*. Vol. 21. No. 2. Pp. 164–188. DOI: <https://doi.org/10.1080/15578771.2024.2359378>
3. Грицик Ю.Й. Інституційна підтримка впровадження сучасних HR-практик в органах місцевого управління з врахуванням досвіду країн ЄС. *Таврійський науковий вісник. Серія: Публічне управління та адміністрування*. 2025. № 4. С. 10–17. DOI: <https://doi.org/10.32782/tnv-pub.2025.4.2>
4. Погорелова Т.О. Управління персоналом як фактор підвищення ефективності діяльності підприємств. *Вісник Національного технічного університету «Харківський політехнічний інститут» (економічні науки)*. 2022. № 4. С. 17–21. DOI: <https://doi.org/10.20998/2519-4461.2022.4.17>
5. Дуга С.Ю. Генезис теорії людського капіталу: від класичних засад до викликів цифрової ери. *Економіка і управління*. 2025. Вип. 2. С. 27–32. DOI: <https://doi.org/10.32782/2312-7872.2.2025.3>
6. Марухленко О., Руденко В., Рубан Д. Проєктний менеджмент у контексті сталого розвитку та ESG-стратегій. *Економіка та суспільство*. 2025. Вип. 79. DOI: <https://doi.org/10.32782/2524-0072/2025-79-180>
7. Данченко О.Б., Корейба А.З. Аналіз синергетичного підходу до управління проєктами. *Вісник Національного технічного університету «ХПІ»*. Серія: Стратегічне управління, управління портфелями, програмами та проєктами. 2022. № 2(6). С. 30–34. DOI: <https://doi.org/10.20998/2413-3000.2022.6.6>
8. Кононов І., Нужна Ю., Хобта С. Міждисциплінарні дослідження: можливості та методологічні проблеми. *Науково-теоретичний альманах Грані*. 2025. № 28(5). С. 105–117. DOI: <https://doi.org/10.15421/172607>
9. Попова Л.М. Екземпліфікація терміну «трансверсальність» у сучасному науковому просторі через призму підготовки майбутнього фахівця. *Інноваційна педагогіка*. 2022. Вип. 48. Т. 2. С. 165–169. DOI: <https://doi.org/10.32843/2663-6085/2022/48.2.32>

Надійшла до редколегії 15.04.2026

Прийнята після рецензування 05.05.2026

Опублікована 28.05.2026