



A Criteria-Based Model for Assessing the Social Efficiency of Agile Project Management in Production-Oriented Organizations under Crisis Conditions

Aleksandra Kuzior¹, Alla Lobanova², Mykola Tulenkov³, Valerii Karytka²

¹ Silesian University of Technology, Faculty of Organization and Management; aleksandra.kuzior@polsl.pl

² Kryvyi Rih State Pedagogical University, Department of Sociology and Social Work, Kryvyi Rih, 50086, Ukraine; lobanova-as@ukr.net (AL); karitkavvv@gmail.com (VK)

³ Taras Shevchenko National University of Kyiv, Department of Sector Sociology, niktul50@i.ua

*Correspondence: lobanova-as@ukr.net

Article history

Received 28.03.2026

Accepted 05.06.2026

Available online 30.06.2026

Keywords

Agile management,
social efficiency,
production-oriented
organizations,
organizational resilience,
strategic agility.

Abstract

Achieving effective performance in production-oriented organizations under crisis conditions depends on the implementation of agile project management models. As an innovative model, Agile management requires robust tools to measure not only economic indicators but also the social utility generated for both the enterprise and society. Therefore, this study aims to conceptualize a system for measuring and evaluating the social efficiency of Agile project management in crisis situations. The social efficiency of Agile management is defined as the ratio of an organization's project performance to the volume of available team resources utilized to achieve it, underpinned by high-quality project activities, the personal values of team members, and shared social capital. The criteria-based model for measuring the social efficiency of Agile project management comprises three interconnected levels of evaluation: general social efficiency, special social efficiency, and concrete social efficiency in the analysis of project management within production-oriented organizations. The proposed framework of criteria, indicators, data sources, measurement scales, and evaluation procedures for each level of social efficiency allows for a clear distinction between strategic, organizational-process, and applied outcomes of Agile management. The primary factors in achieving the social efficiency of Agile management include flexible and mobile project-oriented interaction among participants, organizational adaptability of management, team social capital, and value-oriented cooperation. The proposed model enables the operationalization of social efficiency metrics for Agile project management and facilitates their comprehensive evaluation within production-oriented organizations during crises.

DOI: 10.30657/pea.2026.32.38

1. Introduction

The modern world is characterized by radical changes in all spheres of human activity, affecting people's thinking, management, living standards, and the development of scientific and technological progress, production processes, and social relations. Often, man-made, scientific or natural disasters of a global nature lead to crisis situations that need to be addressed quickly and effectively. It is appropriate to mention, for example, the COVID-19 pandemic, which led to the immediate closure of borders by most countries, radically transformed international relations, transport links between countries, and the way of life of millions of people worldwide, or military conflicts unleashed by aggressor countries, for

example, the Russian-Ukrainian war, which resulted in the deaths of hundreds of thousands of civilians and military personnel, significant destruction of Ukraine's industrial and social infrastructure, and migration flows to Europe and other countries that were unprecedented since the Second World War.

In these unpredictable crisis situations, business leaders, civil officials, entrepreneurs, and scientists should respond quickly to threats and risks and find effective ways to preserve, first, human life and, of course, the country's industrial, natural, and social capital (Kuzior et al., 2025; Yunani, 2022). In Ukraine, in the context of the full-scale military invasion by the Russian Federation that began on 24 February 2022, the key issue is the preservation of the country



and its statehood. Therefore, there is an urgent need to find extraordinary and innovative methods to ensure the social efficiency of managerial actions. Risk management can be effective in crisis situations, including martial law, when it relies on three main factors: (1) a rational risk management system; (2) a scientifically grounded system of risk identification and measurement; and (3) a productive system for supporting, monitoring, and controlling risk phenomena, processes, and situations (Kuzior et al., 2023). Meanwhile, the complexity and unpredictability of crisis situations, including the state of war, require the search for more flexible and mobile management approaches that integrate the principles of risk management while taking into account the rapid development of information technology. We believe that one of these effective management strategies is Agile (flexible) management.

The foundations of agile management were established in 2001 in the "Manifesto for Agile Software Development" (2001), a document developed by a group of software experts who defined its 12 core principles, namely: (1) Our highest priority is to satisfy the customer through early and continuous delivery of valuable software. (2) Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage. (3) Deliver working software frequently, from a couple of weeks to a couple of months, with preference to the shorter timescale. (4) Businesspeople and developers must work together daily throughout the project. (5) Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done. (6) The most efficient and effective method of conveying information to and within a development team is face-to-face conversation. (7) Working software is the primary measure of progress. (8) Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely. (9) Continuous attention to technical excellence and good design enhances agility. (10) Simplicity - the art of maximizing the amount of work not done is essential. (11) The best architectures, requirements, and designs emerge from self-organizing teams. (12) At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly (Manifesto for Agile Software Development, 2001). Later, Agile management strategies and technologies began to be actively developed and used by American and European researchers. K. Schwaber (USA), who worked with J. Sutherland on formulating the first versions of the Scrum framework and its presentation as a formal process at OOPSLA'95, developed and described the practices and principles of project management using Scrum (Schwaber, 2004). In turn, M. Cohn (USA) in his work "Agile Estimating and Planning" (2005) presented techniques for estimation and planning in agile projects (Cohn, 2005). J. Appelo, the Chief Information Officer at ISM eCompany (Holland) presented the features of leadership development in team management when using strategic and tactical Agile management in the software sector (Appelo, 2010). K. Beck, an American software engineer, developed the principles and technology of extreme programming and proposed a software development

methodology for a collaborative, interactive design process. His work "Extreme Programming Explained: Embrace Change", co-authored with Cynthia Andres, is considered a fundamental contribution to understanding extreme programming (XP) and Agile practices (Beck and Andres, 2004).

Contemporary researchers emphasize the search for successful paths toward flexible management in the face of crises and global challenges. Specifically, American scholars L. Azevedo, R. Lee, and W. Shi have highlighted the need to expand the participation of non-profit organizations in the digital society by developing their strategic planning capacity. They concluded that under crisis conditions, it is essential to design and implement initiatives that align with the organizational mission and foster enhanced agility (Azevedo et al., 2024). Researchers L. Prieto and F. Talukder have substantiated the concept of resilient agility as an integrated capacity of employees to combine flexibility and resilience in response to dynamic organizational changes. The authors argue that such agility is shaped by managerial practices, including leadership style, organizational support, and readiness for change (Prieto and Talukder, 2023).

A framework model comprising four core building blocks designed to steer organizations toward Agile practices for successful project management was proposed by A. Ndou, A. Ingrosso, and A. Di Girolamo. This model demonstrates that ensuring organizational agility and enhancing team synergy requires a comprehensive set of transformations within organizational culture, competencies, structure, and managerial approaches (Ndou et al., 2024). Furthermore, R. Arshad, O. Duraipandi, and M. Ullah have analyzed the impact of agile project management on economic performance, where agile leadership and strategic agility serve as mediators of this relationship. They also expand the interpretation of strategic agility to include the capacity to change business partners and broaden the concept of agile leadership by emphasizing inter-partner coordination (Arshad et al., 2026).

Polish management researchers are also actively involved in the development of agile management practices in different areas. For example, Ł. Kański analyzed the legal and organizational principles of agile management (Kański, 2017). E. Kuczyńska and M. Nepelski adapted agile practices to the development of state defence management projects (Kuczyńska & Nepelski, 2018). A. Kozarkiewicz and P. Paterek (2017) described in detail the structure of the organization and knowledge management processes in agile project teams. In 2022, a group of Polish scientists published a scientific work "Project Management in the Age of Digitalisation and Increased Risk" which revealed the features of agile project management practices (Laskowska-Rutkowska, 2022).

The features of adapting innovative agile practices to project management at enterprises in modern conditions were also studied by Ukrainian researchers Z. Halushka (Halushka, 2020), S. Yadukha, A. Durach, V. Semchenko, T. Yablonskyi (Yadukha et al., 2023), A. Kovalyov, M. Saiensus, D. Bohdanov (Kovalyov et al., 2024), among others.

Despite a significant body of scholarly work dedicated to agile management, its conceptualization as a social

phenomenon within the functioning of organizational systems under crisis conditions, particularly warfare, remains insufficiently developed in contemporary scientific discourse. We argue that the specific features of the structural and functional organization of agile management, the interaction mechanisms among its actors in crisis situations, and the criteria for evaluating its social efficiency lack comprehensive substantiation. Extant research is dominated by applied, managerial, and technological approaches to the analysis of agile management, whereas the construction of a holistic, criteria-based model for evaluating its social efficiency across various levels of a production-oriented organization remains fragmentarily addressed. This underscores the necessity of developing a conceptual model that integrates sociological, structural-functional, and systems approaches to the analysis of agile governance under conditions of crisis and martial law.

Against this background, the objective of this article is to substantiate a three-tier criteria-based model for evaluating the social efficiency of agile management in crisis situations and under martial law. To achieve this objective, the following interrelated tasks have been set: (1) to elucidate the content, principles, structure, functions, and salient characteristics of agile management as a social phenomenon; (2) to clarify the essence of the concepts of social efficiency and effectiveness of agile management in organizations, as well as to determine the specific aspects of their application across different levels of the managerial hierarchy in production-oriented systems; (3) to establish a system of criteria for evaluating the social efficiency of agile management in crisis situations; and (4) to substantiate a three-tier criteria-based model for measuring the social efficiency of agile management in production-oriented systems under crisis conditions and martial law.

2. Methods

This study is conceptual and theoretical in nature, aiming to develop a model for evaluating the social efficiency of Agile project management within production-oriented organizations under crisis conditions. The theoretical framework of the research is built upon academic literature dedicated to Agile management, organizational social efficiency, and crisis management in project environments. In the first phase, a comprehensive literature review was conducted to identify the role of Agile management in crisis conditions and the factors that determine the social resilience of production organizations utilizing these practices.

In the second phase, a synthesis of theoretical approaches to the categories of "efficiency" and "effectiveness" was performed, which allowed for a refined definition of "social efficiency." Leveraging systemic, structural-functional, and value-normative approaches enabled the conceptualization of social efficiency as a foundational category for verifying the effectiveness of Agile project management under crisis conditions, specifically during wartime.

In the third phase, based on logical-theoretical generalization and conceptual modeling, the authors' three-level model for evaluating the social efficiency of Agile management was formulated, encompassing the macro-social, organizational,

and micro-social levels of analysis. Evaluation criteria, potential indicators, and corresponding measurement methods were developed for each level. The formulation of these evaluation criteria was based on a conceptual synthesis of contemporary research in the fields of Agile management, organizational resilience, strategic agility, adaptive management, crisis management, and integrated maturity assessment frameworks (Ingaldi & Ulewicz, 2026; Umam & Sommanawat, 2019).

The differentiation of these levels is driven by the need to account for the impact of Agile project management practices not only on the performance outcomes of an industrial organization but also on social interactions, organizational culture, and the broader socio-economic context of its operations. The findings of this study serve as a theoretical and methodological foundation for future empirical research and the practical validation of the proposed model for measuring and evaluating the social efficiency of Agile project management across various types of organizations.

3. Results

3.1. Conceptual Foundations and Crisis Potential of Agile Management

The rapid introduction of modernization technologies into management systems in enterprises and other business organizations requires new approaches to project management, as these technologies affect all management processes. A determining factor in these changes is, above all, the presence of managers who think flexibly and can quickly adapt to contemporary challenges and crisis situations by using socially effective and innovative management methodologies and methods. Such is the nature of Agile management, the essence of which lies in creating substantial value with fewer resources, leveraging digital technologies, and ensuring high-quality governance. The philosophy of Agile management as a method of social philosophy and as an activity supporting the sustainable development of modern society, understood as a complex social, economic, and cultural phenomenon and dynamic process, was proposed by J. Appelo in "Management 3.0. Agile Management: Leadership and Team Management" (Appelo, 2018). The philosophy of Agile management, according to J. Appelo's idea, includes the theory of flexible innovative management and leadership, which inspires new ideas owing to the implementation of information and computer technologies (ICT) and the use of digital components, and requires the formation of a flexible, creative and innovative elite as a new attractor, which should be incorporated into all administrative management structures on the basis of management efficiency principles. According to Z. Halushka (2020), Agile projects have proven to be more successful than traditional projects.

Agile ("flexible management"), according to P. Serrador and J. Pinto (2015), differs from traditional approaches to project management because it involves continuous design, flexible scope, attention to uncertainty, and interaction with clients, as well as a modified organization of the project team. In addition, Agile is described as iterative and incremental, as

it avoids standard approaches based on a fixed project scope and limited client interaction.

As E. Kuczyńska and M. Nepelski note, project management utilizing the Agile methodology offers several distinct advantages for an organization, including the following: (1) it ensures flexibility while preserving the core project concept; (2) does not require a complete reorganization of the enterprise, as the organization can implement already approved and proven practices of this methodology; (3) this working method can be effectively applied to teams established within a classical managerial environment; (4) it features a preparatory phase that allows for an immediate assessment of whether a project is viable and worth pursuing; (5) the approach provides greater managerial control over the course of the project because guarantees and timelines are more conclusive, even though it remains uncertain what precise outcomes will be achieved with the allocated funds within that timeframe; (6) it defines time, cost, and quality constraints at the early stages of the project; and (7) the method efficiently leverages human knowledge in combination with techniques such as interactive development and modeling to meet the strict constraints of timely project execution (Kuczyńska and Nepelski, 2018). Therefore, the Agile approach is described as flexible because it enables teams to respond quickly and introduce changes during project implementation. Such changes can be introduced with minimal disruption to the team, the process, and the final result. Project tools are intended to help a company achieve the three main principles of project management: systematization, efficiency, and work oriented toward results (Tarasiuk, 2023).

Ukrainian researchers emphasize that Agile project management (flexible project management) is “a methodology that focuses on adaptability to changes, its main idea being to respond flexibly to changes in requirements, circumstances and assumptions during the project development. It is aimed at continuous process improvement, cooperation with the customer and ensuring the quality of the product or service” (Yadukha et al., 2023). Based on this analysis, it can be emphasized that the main features of Agile management are as follows: (1) an iterative approach that breaks projects into short cycles or iterations (usually from two to four weeks), which allows teams to quickly receive feedback and make changes; (2) a customer focus based on constant interaction with the client and adaptation of the product to client needs and expectations; (3) cross-functional teams consisting of specialists from different fields who work together to achieve a common goal; (4) flexibility and adaptability, understood as the ability to respond quickly to changes in project requirements and conditions; (5) transparency and communication, supported by regular meetings of team members to assess progress and discuss issues so that everyone remains aware of the project's development; (6) continuous improvement, understood as continuous analysis of processes and the implementation of improvements that increase the efficiency of project work.

At the same time, Ukrainian researchers of the agile management methodology believe that the project cycle of flexible

management typically consists of iterative stages comprising five main phases: 1) planning, which defines the tasks and goals for the next development period; 2) execution, during which functionality or functional requirements are developed and each iteration cycle usually includes a specific set of tasks performed by the team; 3) checking/assessment of the team's work results, including verification of functionality against requirements, testing, and analysis of the work completed; 4) reviewing the results and demonstrating the work performed to stakeholders in order to obtain their feedback and incorporate suggestions for improvement; 5) the retrospective, a self-assessment stage in which the team analyzes its work during the previous cycle and identifies what worked well, what can be improved, and what steps should be taken to improve efficiency (Yadukha et al., 2023). This cycle is repeated in each iteration sprint, making it possible to ensure continuous progress in project development and respond quickly to changes or client requirements.

It is worth noting that Agile management continues to be actively integrated into the operations of contemporary production-oriented organizations, particularly in Poland and Ukraine. According to the 17th Annual State of Agile Report (2024), organizational units utilizing Agile span various functional areas: nearly 70% of respondents indicated that Agile is applied within IT, software development, and delivery teams; almost half reported its use in engineering, product, and R&D teams; while approximately 28% of business operations units and 20% of marketing teams have also implemented Agile principles. In terms of year-over-year dynamics, the most significant growth in Agile adoption was recorded within engineering and R&D teams: while only 32% of such teams utilized Agile in 2022, this figure increased by 16 percentage points in 2023 (The 17th State of Agile Report, 2024).

Under martial law, Ukrainian IT companies have also actively reoriented their operations for survival, applying Agile technologies to their marketing activities. The establishment of benchmark control metrics for evaluating the quality of processes and decisions has become a key element for ensuring transparency and control in the implementation of Agile marketing strategies. These metrics may vary depending on the company; however, it is essential that they are properly established and adhered to through the use of an Agile approach (Kovalyov et al., 2024).

At the same time, many experts in agile project management methodologies emphasize that the Agile framework is easy to understand but difficult to master. Agile time estimation methods fail to account for non-programming time (such as meetings, phone calls, and standardization tasks) and instead attempt to calculate only the percentage of time dedicated exclusively to programming, which helps plan reasonable or realistic delivery dates (Goswami et al., 2016). Furthermore, F. Shen and I. Stewart point out that Agile transformation is frequently not a systemic process, which leads to a decrease in its efficiency and to implementation failures. Conversely, effective Agile transformation requires clearly structured interaction and collaboration processes that reinforce the alignment of methods with project needs and foster more effective team relations (Shen and Stewart, 2025).

The findings of the State of Agile report (2024) also demonstrate that Agile adoption is accompanied by a series of systemic challenges, primarily related to human and organizational factors. More than a third of the respondents noted an insufficient understanding of Agile on the part of leadership and a lack of proper support for Agile transformations, while nearly a third of those surveyed highlighted the problem of unclear organizational priorities and strategic direction. Additionally, approximately 29% of respondents indicated inadequate awareness among business teams regarding Agile capabilities, and a segment of the study participants emphasized the difficulty of sustaining Agile teams' agility over the long term. This indicates that the efficiency of Agile management depends heavily not only on the use of appropriate methodologies and tools but also on the level of organizational culture, leadership support, team synergy, and the development of the organization's social capital (The 17th State of Agile Report, 2024).

It is important to emphasize that Ukrainian scholars A. Artyukhov, Iu. Volk, and T. Vasylieva propose the application of Agile methodology, specifically Scrum, as a tool for ensuring the quality of education in higher education institutions. This framework can contribute to the achievement of the UN Sustainable Development Goals, particularly SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), and SDG 9 (Industry, Innovation, and Infrastructure), by integrating educational, innovative, and managerial practices (Artyukhov et al., 2022).

Therefore, as E. Kuczyńska and M. Nepelski underline, it is important to promote a full understanding of flexibility not only within the team working on the project, but also throughout the business environment of the firm, to avoid misunderstandings within the team and realize the full potential of flexibility (Kuczyńska & Nepelski, 2018).

As evidenced by the foregoing, effective agile project management within enterprises, firms, and institutions serves as an indispensable component not only of production-oriented organizations but also of the overarching governance of the socio-economic sphere in contemporary society, particularly under conditions of systemic crisis and martial law. Consequently, leveraging the methodological foundations of effective Agile management technologies facilitates not only the systematization of accumulated experience in managing complex social objects, processes, and specific tasks but also the rational decomposition of these elements into distinct phases to achieve the intended outcomes. Concurrently, contemporary scholars and practitioners face a critical challenge that entails not only elucidating the diverse aspects, dimensions, and levels of Agile management efficiency across production-oriented organizations and lines of socio-economic activity but also substantiating appropriate indicators and criteria for measuring and evaluating its social efficiency.

3.2. Social Efficiency of Agile Management: Theoretical Interpretation and Structural Components

The problem of efficiency is now one of the most important components of the successful operation and effective

management of enterprises, institutions, and organizations. The concept of efficiency, as the analysis shows, has a long and complex history of formation and development. It is believed that the term "efficiency" first appeared in the economic literature in the XVII-XVIII centuries, in particular in the works of the English scientist W. Petty and the French researcher F. Quesnay, who used it in the sense of "effectiveness" and used it to assess the actions of the management entity. Later, in the early XX century, the American researcher G. Emerson discovered the connection between efficiency and the functionality of the organization and defined efficiency as "the concern of management and labor productivity are directed toward achieving maximum results with minimum effort". In time, the concept of "efficiency" began to be applied to any activity, which led to a number of scientific approaches to the study of this phenomenon (Chaika & Chaika, 2018).

It should also be noted that the concepts of "efficiency" and "effectiveness" differ from one another not only in their substance but also characterize entirely distinct aspects of organizational activity. In this regard, S. Covey posits that "efficiency applies to people, while effectiveness and productivity apply to things" (Covey, 2013). Conversely, P. Drucker defines efficiency as "the foundation of an organization's success," whereas effectiveness is viewed as "the minimum condition for an organization's survival" (Drucker, 2007).

According to the researcher S. Pylypenko, the efficiency of an enterprise as an economic category reflects "the correspondence of the actual result to the desired one, i.e. the level of achievement of the organization's goals and its ability to function in a competitive environment. Efficiency, in this sense, is used to justify business decisions and various analytical assessments" (Pylypenko, 2016). Management efficiency, in turn, is an economic category that reflects "the contribution of management activity to the effectiveness of the management system and is characterized by various indicators of both the object of management and its own management activity (subject of management)", that is, it is a characteristic of the level of management, which is determined by comparing in time and space aspects" (Piletska & Korytko, 2018). We can agree with L. Kharchevnikova, who believes that "efficiency" is a "multi-criteria category that shows the degree of correlation between expenses and results, the degree of achievement of the organization's goals, the degree of satisfaction of personal needs and requests of employees in the course of labor activity, the organization's ability to exist indefinitely, the ability to ensure high quality of manufactured products" (Kharchevnikova, 2020). With regard to management, it is worth distinguishing between the following types of efficiency: economic, organizational and social. Economic efficiency characterizes effectiveness, namely the cost-effectiveness and profitability of an enterprise; organizational efficiency refers to the quality of the organizational structure, the process of making management decisions, and the response to organizational changes; and social efficiency reflects the correspondence between the enterprise's expenditures and social results and the goals and

social interests of society, including the formation of corporate spirit, an appropriate psychological climate in the team, a sense of security and involvement in the organization's goals, and the impact of economic measures on human lifestyles" (Pylypenko, 2016). Naturally, the project management process is oriented toward achieving all types of efficiency, including economic, organizational, and social dimensions. However, under crisis conditions, social efficiency acquires paramount importance, as it uniquely determines an organization's capacity to maintain collective cohesion, preserve employee trust, ensure the psychological resilience of personnel, and sustain a balance between attaining economic outcomes and meeting the social needs of individuals. In crisis circumstances, managerial efficiency increasingly depends not merely on financial indicators or the speed of decision-making, but on the leadership's ability to foster a secure, adaptive, and supportive environment that facilitates the preservation of the organization's human potential.

Since this research paper focuses on the social efficiency of agile management, the following analysis addresses approaches to its definition, criteria, and measurement methods. The social efficiency of management is inherently linked to the human factor, because the term "social" refers to the nature of human relations. Therefore, when defining the content of social efficiency of Agile management, we note that it consists, firstly, of the personal characteristics of team members working on development projects of an organization, enterprise, firm, or region, and, secondly, of the social capital accumulated by the team (group, collective) of the organization. The personal characteristics of team members are manifested in the level of professional training, knowledge, creativity, the ability to innovate, professional experience, human virtues, and organizational qualities (Sira, 2024). The social capital accumulated by the project team is manifested in the presence of corporate spirit, organizational culture, the ability to change, trust, friendships, a sense of security, involvement of everyone in the organization's goals and ways to achieve them. In this regard, it is appropriate to recall the opinion of R. Putnam, who considers social capital as a kind of resource that allows a person to gain certain advantages and new opportunities for realizing his or her chances through joining social ties; it, like economic capital, can be exchanged for other resources (e.g. power, prestige, finance), be used advantageously in different situations and multiply through participation in social networks. The basis of this category is trust, a phenomenon that contributes to the ordering of social life, the legitimization of social relations (Putnam et al., 2001). O. Demianchuk, having analyzed different approaches to understanding the components of social capital, notes that trust is the basis of social capital, and its elements are "resourcefulness is the potential for interaction, accumulation is the creation of networks of social ties, convertibility is an exchange on a non-equivalent basis, liquidity is an exchange on an equivalent basis, profitability is the saving of the community's transaction expenses or the obtaining of social rent" (Demianchuk, 2012). Therefore, the social efficiency of Agile management is determined by the value orientations of team members and the values rooted

in the social capital of the team (collective) of an organization, firm, enterprise. According to O. Yelisieieva, the social efficiency of management can be measured from two perspectives: first, by indicators reflecting the socio-cultural sphere of the organization's functioning: level of labor discipline, level of staff stability, level of social infrastructure development at the enterprise, level of working conditions, etc.; secondly, by indicators that reflect the impact on the achievement of production and economic results and satisfaction of market needs: labor productivity, salary efficiency, level of customer satisfaction, etc. (Yelisieieva, 2004). In our opinion, the results of the efficiency rating of 500 American companies (with a market capitalization of more than \$10 billion), conducted in 2017 by the Drucker Institute, are of considerable cognitive interest in determining the criteria for social efficiency of flexible management. The top ten organizations with the most effective management include, among others, Amazon, Apple, Alphabet, Microsoft, and Cisco Systems. These organizations were identified as the most effective by the following criteria: 1) customer satisfaction; 2) employee involvement in the organization's strategic goals and their development; 3) creation of conditions for generating new ideas and implementing innovations; 4) social responsibility of employers and employees; 5) financial sustainability of the organization (Chaika & Chaika, 2018). In the theory and practice of modern management, the concepts of social efficiency and social effectiveness often occur. Meanwhile, the Ukrainian management expert M. Tulenkov believes that these are completely different concepts with different content. Social efficiency characterizes a set of properties and parameters that express the quality of organization of people's joint activities, cost-effectiveness of resource use, rationality of production (service provision) technologies, full use of equipment and working time, staff productivity, etc., whereas effectiveness denotes the usefulness (expediency) of the activities of particular social entities, i.e. specific results that satisfy certain social needs, the carriers of which may be society as a whole, individual social groups or specific individuals as management subjects, etc. (Tulenkov, 2011).

Based on this, the author understands the social efficiency of agile management as the ratio of obtained useful results (effectiveness) to the amount of available resources used to achieve them, resulting from the quality and flexibility with which a team (or collective) develops and implements an organization's socio-economic activities. This understanding is based on the personal values of team members and on shared social capital, which is of particular importance in crisis situations and under martial law.

4. Discussion

4.1. A Three-Level Criteria-Based Model for Assessing the Social Efficiency of Agile Management under Crisis Conditions

Based on the author's definition of social efficiency, it is appropriate to delineate the approaches and core criteria for its evaluation and measurement in relation to agile management. The measurement process itself within production-oriented organizations is carried out primarily through analytical and

expert methods. This establishes the grounds for substantiating a three-tier criteria-based model for evaluating the social efficiency of agile management in production-oriented organizations, which logically encompasses three main hierarchical tiers: (1) general social efficiency; (2) special social efficiency; and (3) specific social efficiency.

The delineation of the general, special, and concrete tiers of the social efficiency of agile management is grounded in systems and structural-functional approaches to the analysis of socio-economic systems, according to which the efficiency of organizational management manifests across different levels of social interaction and managerial activity. The proposed hierarchy of criteria allows for the differentiation of strategic, organizational-process, and applied outcomes of agile management functioning, thereby ensuring the analytical integrity of the model and enabling a comprehensive assessment of the social efficiency of production systems under crisis conditions.

The formulation of criteria for evaluating the social efficiency of Agile management incorporated insights from contemporary research. Specifically, these include the human factor, individual perceptions of change, behavioral dimensions of employees, managerial and organizational challenges, as well as structural and process barriers to the implementation of Agile approaches (Ndou et al., 2024). Furthermore, the model accounts for Agile leadership and

strategic flexibility as pivotal factors in enhancing customer value and achieving the economic sustainability of manufacturing organizations (Arshad et al., 2026). It also integrates the collaborative dynamics among project designers, experts, and change clients, which foster greater agility, enhanced communication efficiency, and overall project performance (Shen and Stewart, 2025). Finally, the framework considers client communication transparency, service delivery flexibility, the development of loyalty programs, branding, and strategic positioning (Kovalyov et al., 2024). Unlike empirically oriented models, the system of criteria proposed in this article is of a conceptual-analytical nature and is aimed at integrating social, organizational, and adaptive parameters for evaluating agile management within production-oriented organizations. Each tier of the model is characterized by the relative autonomy of its indicators and performs a distinct analytical function within the social efficiency evaluation system of agile management. The general tier reflects the strategic social efficiency of the organizational system; the special tier captures the efficiency of managerial and team interactions; and the concrete tier represents the applied outcomes of implementing Agile practices in crisis situations. Their substantive parameters are presented in Table 1.

Table 1. A three-level criteria model for assessing the social efficiency of agile management in crisis situations (Author's version)

Hierarchical Tiers of Social Efficiency	Evaluation Criteria	Potential Indicators	Evaluation Methods
<i>General Social Efficiency (Strategic & Macro Level)</i>	Project performance and productivity level	Achievement of project KPIs, target realization rate, team productivity	Performance analysis, KPI tracking
	Growth level of public welfare per capita	Employment rate, social stability, macro-economic performance	Statistical analysis, socio-economic monitoring
	Support and development level of contemporary social and industrial infrastructure	Infrastructure investments, digitalization rate, development of social services	Document analysis, expert assessment
	Availability of social protection standards for vulnerable populations	Accessibility of social programs, level of personnel support and welfare	Regulatory document analysis, surveys
	Orderliness, reliability, and sustainability of social relations	Trust level, conflict intensity, stability of social interaction	Sociological surveys, expert evaluation
<i>Special Social Efficiency (Organizational & Process Level)</i>	Goal orientation of organizational interaction	Alignment of goals, level of action coordination	Questionnaires, expert analysis
	Time expenditures for resolving diverse organizational, managerial, and functional tasks	Decision-making speed, task execution duration	Time-motion analysis, process monitoring
	Functional style of Agile management actors	Level of flexibility, adaptability, team synergy	Personnel surveys, expert assessment
	Structural complexity of the social entity	Number of managerial tiers, degree of bureaucratization	Organizational structure analysis

Hierarchical Tiers of Social Efficiency	Evaluation Criteria	Potential Indicators	Evaluation Methods
Concrete Social Efficiency (Applied & Behavioral Level)	Total expenditures for maintaining and ensuring the operations of the Agile management actor	Resource consumption, budget utilization efficiency	Financial analysis
	Degree of compliance of Agile management actors' activities with defined requirements	Adherence level to standards and procedures	Audit, quality control (QC)
	Legitimacy of managerial decisions and actions of Agile management actors	Level of personnel support for decisions, legal compliance	Questionnaires, expert evaluation
	Rationality and realism of Agile management actors' impact on joint activity	Efficiency of managerial decisions, rate of outcome achievement	KPI analysis, expert analysis
	Depth of consideration for the basic needs and diverse interests of social groups in decisions	Satisfaction level of personnel and clients	Sociological surveys
	Nature and volume of organizational contacts between Agile management actors and clients/project sponsors	Communication intensity, client engagement and interaction level	Communication analysis, surveys
	Authority and professionalism level of Agile management actors	Trust level in leadership, professional competencies	Expert assessment, questionnaires
	Reliability (veracity), expediency, and timeliness of managerial information	Information exchange velocity, data accuracy	Communication monitoring
	Morality and ethics of organizational and managerial activities within Agile management	Adherence to ethical norms, level of organizational culture	Ethical audit, sociological surveys

The proposed system of indicators and evaluation methods enables a comprehensive analysis of the social efficiency of agile management at the macro-social, organizational, and micro-social levels. The identified indicators reflect both quantitative performance parameters (productivity, decision-making speed, resource utilization efficiency) and qualitative characteristics of organizational interaction (trust levels, adaptability, professionalism, the ethics of managerial activity, and personnel and client satisfaction).

The use of diverse evaluation methods, such as sociological surveys, expert analysis, KPI tracking, communication monitoring, auditing, and document analysis, is necessitated by the multidimensional nature of agile management's social

efficiency, which integrates economic, organizational, communicative, and value-normative components.

This facilitates the adaptation of the model to various types of production-oriented organizations, the specifics of project performance, and crisis-affected operational environments.

To further concretize the proposed system of Agile management social efficiency criteria, it is expedient to outline the prospects for their subsequent operationalization in applied research. Within the established conceptual framework, the criteria can be empirically interpreted through corresponding indicators, data sources, scales, and evaluation procedures. An example of such operationalization is presented in Table 2.

Table 2. An Example of the Operationalization of Agile Management Social Efficiency Criteria

Criterion	Indicator	Data Source	Measurement Scale	Measurement Frequency	Interpretation
<i>Project performance and productivity level</i>	KPI fulfillment, adherence to deadlines, rate of target achievement	Project documentation, internal reports	% of fulfillment, composite index	Quarterly	Higher values indicate an increase in the effectiveness of Agile management.
<i>Time expenditures for managerial decision-making</i>	Average response time to managerial requests	Internal management reporting, process monitoring	Hours/days	Monthly	A reduction in time indicates an increase in

Criterion	Indicator	Data Source	Measurement Scale	Measurement Frequency	Interpretation
					managerial adaptability and flexibility.
<i>Trust and team interaction level</i>	Interpersonal trust level, communication satisfaction	Sociological surveys of personnel	Likert scale (1–5)	Semi-annually	A high level of trust enhances the social resilience of the team.
<i>Reliability and timeliness of managerial information</i>	Data accuracy, information exchange velocity	Communication reports, personnel surveys	Expert assessment, Likert scale	Quarterly	High information reliability mitigates organizational risks.
<i>Professionalism level of Agile management actors</i>	Level of professional competencies, coordination efficiency	HR analytics, expert evaluation	Composite index	Annually	High values contribute to the efficiency of project performance.
<i>Morality and ethics of managerial activity</i>	Adherence to ethical norms, level of organizational culture	Sociological surveys, ethical audit	Ethical index	Annually	A high level of ethics improves the socio-psychological climate.

The proposed system of criteria and indicators does not claim to be exhaustive or universal; however, it establishes a conceptual framework for subsequent empirical testing, the development of composite indexes of social efficiency, and the refinement of methods for evaluating agile management under conditions of social instability and martial law.

Naturally, other criteria may also be employed to reveal the cumulative contribution of both the actors and objects of Agile management to the development of a region or society as a whole, the fulfillment of immediate and long-term needs and interests, and the achievement of short- and long-term goals and the resolution of problems and demands. Consequently, the criteria for evaluating the social efficiency of Agile management make it possible to discern the purpose and significance of societal efforts, their social utility and value, as well as the degree of their development, refinement, and efficiency. Below, we examine in greater detail the substance of the various tiers of Agile management's social efficiency and the criteria for their evaluation.

General social efficiency characterizes the macro-social level of Agile management functioning and reflects its impact on the socio-economic development of an organization, community, or society as a whole. Unlike special and concrete social efficiency, this level is associated not only with the intra-organizational outcomes of project performance but also with the broader social consequences of deploying Agile practices. These consequences notably include the enhancement of social resilience, increasing the adaptability of socio-economic systems, and maintaining the stability of social relations under crisis conditions.

Contemporary research on strategic agility and organizational resilience emphasizes that the efficiency of Agile-oriented organizations manifests not merely through team productivity or the velocity of managerial decisions, but through the capacity of organizations to sustain social stability, infrastructural development, public employment, and the adaptability of social institutions amidst crisis transformations (Arshad et al., 2026; Ndou et al., 2024).

The core criteria of general social efficiency of Agile management include the following:

- 1) The performance and productivity level of project performance, which characterizes the effectiveness of project execution, the degree of strategic goal attainment, and the functional efficiency of project teams. For its evaluation, metrics such as project KPI (Key Performance Indicators) fulfillment, the realization rate of established targets, team productivity, and the implementation efficiency of project decisions can be utilized.
- 2) The growth level of public welfare, given that Agile management under crisis conditions should contribute to supporting economic stability, public employment, and preserving social resilience. Empirical indicators for this criterion may include employment rates, social stability indexes, and the overall socio-economic performance of an organization or a region.
- 3) The support and development level of social and industrial infrastructure, which reflects the capacity of Agile-oriented organizations to ensure the maintenance of infrastructural processes, digital transformation, and the development of social services even in the face of crisis constraints. Infrastructure investments, digitalization rates, and the expansion of social and production-oriented services can be leveraged for evaluation.
- 4) The availability of social protection standards for vulnerable populations. Within socially oriented Agile management, supporting employees and socially vulnerable groups during crisis transformations acquires paramount importance. Indicators for this criterion may include the accessibility of social programs, the level of personnel support and welfare, and the availability of social adaptation mechanisms.
- 5) The orderliness, reliability, and sustainability level of social relations, which determines how Agile management helps maintain the stability of social interaction, trust, and cooperation among project participants within manufacturing and industrial organizations under crisis conditions. This criterion can be evaluated using indicators of trust levels, conflict

intensity, the stability of social interaction, and the quality of organizational communications.

Taken collectively, these criteria enable an assessment of the macro-social impact of Agile management on the functioning of socio-economic systems, as well as their adaptability and resilience in crisis situations and under martial law.

Specific social efficiency characterizes the organizational-process level of Agile management operations. It reflects the degree of rationality within managerial interactions, the adaptability of the organizational structure, communication efficiency, the coordination of project activities, and the organization's capacity to respond rapidly to crisis-driven shifts. Measuring this dimension allows researchers to evaluate the orderliness of interactions among Agile management actors, the soundness of functional and authority distribution, the development of information channels, the effectiveness of decision-making procedures, and the professionalism of managerial personnel.

Among the criteria for the specific social efficiency of Agile management, the following carry particular significance:

- 1) Goal Orientation of Organizational Interaction. This is determined by the degree of alignment between managerial decisions, team interactions, and project activities with the strategic goals of the organization. It reflects the capacity of Agile teams to maintain unity of purpose, coordination of effort, and adaptability in crisis situations. This is an essential functional and organizational criterion, given that every Agile management entity is established primarily to achieve clearly defined goals and objectives in a timely manner. Empirical indicators for this criterion include the level of goal alignment, coordination efficiency, and the degree of project milestone achievement.
- 2) Time Expenditure on Organizational and Managerial Tasks. This criterion accounts for the time expended by Agile management actors in pursuit of designated objectives. The calculation centers on the time required by managerial actors to process diverse streams of managerial information (from "input" to "output") that continuously circulate vertically (top-down and bottom-up) and horizontally throughout the management system, its subsystems, or structural units. Given constant risks, particularly under wartime conditions, the significance of evaluating time expenditures for generating managerial inputs, making decisions, and executing other organizational operations increases substantially. These processes require rational compression, streamlining, and time savings. To evaluate this criterion, indicators such as decision-making speed, task duration, and information exchange responsiveness can be utilized.
- 3) Operational Style of Agile Management Actors. This represents a specific manner of behavior, action, and decision-making. It is characterized by the ratio between norm-setting and organizational activities, the substance and volume of managerial decisions, and the purpose and frequency of various organizational events (meetings, briefings, audits), alongside other managerial actions and

processes. The leadership style is determined by the business and professional attributes of the manager, which shape their behavior during interactions with other managers and the managed social entity. The analysis of this criterion can be conducted via sociological surveys, observation, and expert assessment.

- 4) Complexity of the Team's Organizational Structure. This criterion is particularly important because a more complex organizational structure of the managed entity inherently increases the time required for managerial inputs to reach specific executors (and vice versa). Furthermore, it distorts information, leading to additional organizational friction at structural interfaces and other negative effects. In crisis situations, it is vital for the organizational structure of both the managing and managed entities to be minimally complex (streamlined), as bureaucratization significantly reduces the productivity of project designers. Empirical indicators for this criterion include the number of management tiers, information transmission speed, and the degree of organizational bureaucratization.
- 5) Aggregate Costs of Supporting Agile Management Operations. This criterion characterizes the relationship between resource expenditures and the overall effectiveness of project activities. Within the context of Agile management, focus is directed not only toward economic efficiency but also toward the rationality of utilizing human, information, technical, and organizational resources. Evaluation metrics may include budget utilization efficiency, time costs, resource allocation adequacy, and overall team productivity.

Taken in conjunction, the criteria of purposefulness, time efficiency, managerial interaction style, organizational structure complexity, and resource expenditures provide a comprehensive evaluation of the organizational-process level of Agile management's social efficiency under conditions of crisis transformation and wartime.

Concrete social efficiency characterizes the micro-social level of Agile management operations and enables the evaluation of the performance of individual managerial actors, project teams, and specialists involved in project implementation. It reflects the quality of managerial decisions, the level of professional competence, communication efficiency, and the degree to which managerial activities are oriented toward the needs of personnel and clients.

Among the most significant criteria for concrete social efficiency, the following are highlighted:

- 1) Alignment of Agile Management Actors' Activities with Defined Functions and Authorities. This characterizes the degree to which managerial decisions and professional activities correspond to designated roles, competencies, and project tasks. Its indicators include the level of procedural compliance, functional performance, and the efficiency of project goal execution.
- 2) Legitimacy of Managerial Decisions and Actions. Compliance with legal, organizational, and ethical norms is a critical prerequisite for the stability of managerial interactions in crisis situations. To evaluate this criterion,

indicators of legal compliance, staff support for decisions, and the level of organizational trust can be utilized.

- 3) **Rationality of Managerial Impact.** Managerial decisions must be oriented toward achieving tangible results, supporting organizational adaptability, and ensuring project performance. Empirical indicators include the level of project milestone achievement, team productivity, and the effectiveness of managerial decision implementation.
- 4) **Depth of Consideration for the Needs and Interests of Social Groups.** Agile management inherently presupposes an orientation toward the needs of personnel, clients, and the broader social environment. Under crisis conditions, this is particularly vital for sustaining social resilience and trust. Evaluation metrics may include staff and client satisfaction scores, employee engagement levels, and the quality of feedback mechanisms.
- 5) **Nature and Volume of Organizational Contacts with Project Clients.** Robust communication channels with clients and partners enhance the transparency of managerial activities and the efficiency of project-based interaction. Indicators include communication intensity, the level of client engagement, and the quality of mutual feedback.
- 6) **Professionalism and Authority of Agile Management Actors.** This characterizes the level of professional competencies, trust in leadership, and the capacity of managerial personnel to effectively coordinate project activities under crisis conditions.
- 7) **Reliability and Timeliness of Managerial Information.** In crisis situations, the effectiveness of Agile management heavily depends on the speed and accuracy of information exchange. Evaluation indicators may include communication responsiveness, information accuracy, and the efficiency of information flows.
- 8) **Morality and Ethics of Managerial Activities.** This serves as an important factor in fostering a positive socio-psychological climate, trust, and the stability of team interactions. The analysis of this criterion can be conducted by assessing organizational culture, adherence to ethical standards, and the level of social responsibility.

In addition to those outlined above, other criteria (indicators) of Agile management's social efficiency are of significant importance, allowing for the evaluation of the ratio between project management outcomes achieved via Agile methodology and the volume of resources expended to attain positive results in crisis situations. However, the proposed system of criteria provides a substantiated scientific foundation for an objective assessment of Agile management's social efficiency. It does so not only in terms of compliance with general standards (norms, principles, laws, decrees, and other regulations) but also from the perspective of creating appropriate conditions for the widespread adoption of global best practices rooted in Agile management technologies within production-oriented organizations. Concurrently, the model is conceptual and analytical in nature and can be utilized as a theoretical framework for further empirical validation and the development of applied methodologies for

evaluating the social efficiency of Agile-oriented organizations under crisis conditions.

4. Summary and Conclusions

This study substantiates the expediency of employing a sociological approach to evaluate the social efficiency (societal utility) of implementing Agile management within the managerial activities of production-oriented organizations under crisis conditions. In terms of content, the social efficiency of Agile management is viewed as a comprehensive managerial characteristic reflecting the ratio of socially significant performance outcomes to the resources expended to achieve them. Within production-oriented organizations, social efficiency is determined by the quality of organizational interactions, the level of organizational adaptability to external conditions, team values, and team social capital.

The proposed three-level criteria-based model allows for the evaluation of the social efficiency of Agile project management in production organizations across three dimensions: macro-social (general), organizational (special), and micro-social/individual (concrete). Central to this framework, and distinct from existing approaches, the substantiated model integrates systemic, structural-functional, and value-normative approaches with contemporary concepts of strategic agility and organizational resilience. Furthermore, it accounts for both the societal consequences of Agile management and the operational specifics of organizations, alongside the activities of individual managerial actors under crisis conditions, wartime risks, and social uncertainty. A key contribution of this research is the operationalization of social efficiency evaluation criteria (general, special, and concrete) through a structured system of metrics, indicators, methods, and combined socio-economic evaluation procedures. This establishes a robust foundation for the objective measurement of social efficiency in Agile project management within production-oriented enterprises.

The practical significance of this study lies in the versatility of the proposed model, which can be deployed to evaluate Agile management effectiveness not only in production-oriented organizations but also within IT companies, public administration institutions, the educational sector, and humanitarian or social projects. Under wartime conditions, Agile management can enhance the adaptability and resilience of production organizations, strengthen socio-organizational interactions and communications, and accelerate response times to crisis challenges.

The developed model serves as a methodological framework for the future evolution of tools designed to assess the social efficiency of Agile management and its adaptation to diverse organizational environments. Future research should focus on the empirical validation of the model, the development of composite assessment indices for social efficiency, and the refinement of evaluation criteria tailored to the specifics of different organizational types and crisis contexts.

References

- Appelo, J., 2010. *Management 3.0: Leading Agile Developers, Developing Agile Leaders*, Addison-Wesley, Upper Saddle River-USA.
- Appelo, J., 2018. *Agile-menedzhment: Liderstvo i upravlenie komandami* [Agile Management: Leadership and Team Management], Alpina Publisher, Moscow-Russia.
- Arshad, R., Duraipandi, O., Ullah, M., 2026. Agile project management for economic sustainability: A time-lagged mediation model of strategic agility and agile leadership among software professionals, *Sustainable Futures*, 11, 101764, DOI: 10.1016/j.sfr.2026.101764
- Artyukhov, A.E., Volk, Iu.I., Vasylieva, T.A., 2022. Agile methodology in higher education quality assurance system for SDGs 4, 8 and 9 achievement: national experience, *CTE Workshop Proceedings*, 9, 81-94, DOI: 10.55056/cte.105
- Azevedo, L., Lee, R., Shi, W., 2024. Strategic IT alignment and organizational agility in nonprofits during crisis, *Administrative Sciences*, 14(7), 153, DOI: 10.3390/admsci14070153
- Beck, K., Andres, C., 2004. *Extreme Programming Explained: Embrace Change*, 2nd ed., Addison-Wesley, Boston-USA.
- Chaika, H., Chaika, O., 2018. *Efektivnist v upravlinni* [Efficiency in Management], Znannia, Kyiv-Ukraine.
- Cohn, M., 2005. *Agile Estimating and Planning*, Prentice Hall, Upper Saddle River-USA.
- Covey, S., 2013. *Vosmoi navyk. Ot effektivnosti k velichiiu* [The 8th Habit: From Effectiveness to Greatness], Alpina Publisher, Moscow-Russia.
- Demianchuk, O., 2012. *Elementy sotsialnoho kapitalu* [Elements of Social Capital], Available online: <https://eprints.ua.edu.ua/>
- Drucker, P., 2007. *Entsiklopediya menedzhmenta* [Encyclopedia of Management], Williams Publishing, Moscow-Russia.
- Goswami, R., Jasuja, M., Dhir, S., 2016. Impact of different estimation approaches in traditional and agile development, In *Proceedings of the Second International Conference on Computational Intelligence & Communication Technology (CICIT)*, Ghaziabad, India, 12-13 February 2016, 679-682, DOI: 10.1109/CICIT.2016.140
- Halushka, Z., 2020. *Agile-menedzhment yak innovatsiinyi pidkhd* [Agile Management as an Innovative Approach], *Infrastruktura Rynku*, 47, 76-79, DOI: 10.32843/infrastruct.47-14.
- Ingaldi, M., & Ulewicz, R. 2026. A digital sustainability maturity framework for assessing Industry 4.0 and ESG integration. *Production Engineering Archives*, 32(2), 262–277. DOI: 10.30657/pea.2026.32.21
- Kański, Ł., 2017. Prawne i organizacyjne uwarunkowania implementacji zwinnych metod zarządzania projektami IT [Legal and Organizational Conditions for Implementing Agile IT Project Management Methods], *Organizacja i Zarządzanie*, 2, 27-45, Available online: <http://cejsh.icm.edu.pl/>
- Kharchevnikova, L., 2020. *Teoretyko-metodychni zasady zabezpechennia efektyvnosti upravlinnia personalom pidpriemstv* [Theoretical and Methodological Principles of Ensuring the Efficiency of Enterprise Personnel Management], *Ukrainskyi Zhurnal Prykladnoi Ekonomiky*, 5(4), 354-360, DOI: 10.36887/2415-8453-2020-4-42
- Kovalyov, A.I., Saiensus, M.A., Bohdanov, D., 2024. SCQA, Agile, and Benchmarking for Adapting Strategic Marketing of IT Service Companies During Wartime, *Problems of Modern Transformations. Series: Economics and Management*, 15, DOI: 10.54929/2786-5738-2024-15-04-07
- Kozarkiewicz, A., Paterek, P., 2017. *Struktura organizacji a procesy zarządzania wiedzą w zwinnych zespołach projektowych* [Organizational Structure and Knowledge Management Processes in Agile Project Teams], *Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie*, 102, 143-156, Available online: <https://bw.icm.edu.pl/>
- Kuczyńska, E., Nepelski, M., 2018. *Wybrane metodyki zarządzania projektami z zakresu obronności i bezpieczeństwa państwa* [Selected Project Management Methodologies in Defense and State Security], *Zeszyty Naukowe SGSP*, 66, 99-118, Available online: <https://zeszyty naukowe-sgsp.pl/article/01.3001.0014.4045/pl>
- Kuzior, A., Lobanova, A., Tulenkov, M., Karytka, V., 2023. Risk management strategy in business organisations under conditions of martial law, *Scientific Papers of Silesian University of Technology. Organization and Management Series*, 183, 313-333, DOI: 10.29119/1641-3466.2023.183.19
- Kuzior, A., Lobanova, A., & Bondar, O. 2025. Sustainable consumption and production systems during wartime: Needs, challenges, and adaptation strategies. *Production Engineering Archives*, 31(2), 212–221. DOI: 10.30657/pea.2025.31.21
- Laskowska-Rutkowska, A. (Ed.), 2022. *Zarządzanie projektami w dobie postępującej cyfryzacji i zwiększonego ryzyka* [Project Management in the Era of Advancing Digitalization and Increased Risk], Oficyna Wydawnicza Uczelni Łazarskiego, Warsaw-Poland, DOI: 10.26399/978-83-66723-49-8
- Manifesto for Agile Software Development, 2001. Available online: <https://agilemanifesto.org/>
- Ndou, V., Ingrosso, A., Di Girolamo, A., 2024. Framework for agile transformation: Guiding organizations through cultural, structural, and competency shifts in project management, *Administrative Sciences*, 14(11), 301, DOI: 10.3390/admsci14110301
- Piletska, S., Korytko, T., 2018. *Efektivnist upravlinnia pidpriemstvom, pidkhody ta metody shchodo yii otsinky* [Enterprise Management Efficiency: Approaches and Evaluation Methods], *Ekonomika ta Upravlinnia Pidpriemstvamy*, 5, 101-106, DOI: 10.32782/2520-2200/2018-5-17
- Prieto, L., Talukder, F., 2023. Resilient agility: A necessary condition for employee and organizational sustainability, *Sustainability*, 15(2), 1552, DOI: 10.3390/su15021552
- Putnam, R., Leonardi, R., Nanetti, R., 2001. *Tvorennia demokracji: Tradytzii hromadianskoi aktyvnosti v suchasni Italii* [Making Democracy Work: Civic Traditions in Modern Italy], *Osnovy*, Kyiv-Ukraine.
- Pylypenko, S., 2016. *Teoretychni zasady otsinky efektyvnosti diialnosti pidpriemstva* [Theoretical Foundations for Evaluating Enterprise Performance Efficiency], *Hlobalni ta Natsionalni Problemy Ekonomiky*, 10, 452-456.
- Schwaber, K., 2004. *Agile Project Management with Scrum*, Microsoft Press, Redmond-USA.
- Serrador, P., Pinto, J., 2015. Does agile work? A quantitative analysis of agile project success, *International Journal of Project Management*, 33, 1040-1051, DOI: 10.1016/j.ijproman.2015.01.006
- Shen, F., Stewart, I., 2025. Next practice in agile project management: Putting tailoring into agile transformation, *Project Leadership and Society*, 6, 100207, DOI: 10.1016/j.plas.2025.100207
- Sira, M. 2024. Artificial intelligence in knowledge capture and transfer: Breaking down organizational silos. *System Safety: Human - Technical Facility - Environment*, 6(1), 251–259. DOI: 10.2478/czoto-2024-0027
- Tarasiuk, H., 2023. *Rozvytok proiektnoho menedzhmentu: osnovni metodolohii ta trendy* [Development of Project Management: Main Methodologies and Trends], *Ekonomika, Upravlinnia ta Administruvannia*, 4(106), 26-32, DOI: 10.26642/jen-2023-4(106)-26-32
- The 17th State of Agile Report, 2024. *State of Agile*. Available online: <https://2288549.fs1.hubspotusercontent-na1.net/hubfs/2288549/RE-SA-17th-Annual-State-Of-Agile-Report.pdf>
- Tulenkov, M., 2011. *Teoriia orhanizatsiinoi vzaiemodii* [Theory of Organizational Interaction], IPK DSZU, Kyiv-Ukraine.
- Umam, R., & Sommanawat, K. (2019). Strategic flexibility, manufacturing flexibility, and firm performance under the presence of an agile supply chain: A case of strategic management in fashion industry. *Polish Journal of Management Studies*, 19(2), 407-418. DOI:10.17512/pjms.2019.19.2.35
- Yadukha, S., Durach, A., Semenchenko, V., Yablonskyi, T., 2023. *Upravlinnia proektnoiu diialnistiu pidpriemstva na zasadakh Agile-menedzhmentu ta suchasnykh informatyinykh tekhnolohii* [Management of Enterprise Project Activities Based on Agile Management and Modern Information Technologies], *Development Service Industry Management*, 4, 95-100, DOI: 10.31891/dsim-2023-4(15)
- Yelisieieva, O., 2004. *Metodolohiia upravlinnia efektyvnosti roboty pidpriemstva* [Methodology for Managing Enterprise Performance Efficiency], *Statystyka Ukrainy*, 3, 66-71.
- Yunani, A. (2022). Exploring the social norms nexus-youth participation, effective leadership, institutional cooperation and social capital in SMEs. *Polish Journal of Management Studies*, 25(2), 411-422. DOI:10.17512/pjms.2022.25.2.26