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MANAGING HUMAN RESOURCE RISKS AS A COMPONENT OF A COMPANY'S ECONOMIC SECURITY IN TIMES OF WAR

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The dynamic nature of the modern economic environment, increasing uncertainty, and the impact of crisis and war-related factors are leading to a rise in risks in corporate operations. Under such conditions, personnel-related risks significantly affect the stability of operations and the enterprise's operational results. This necessitates considering personnel risks as a component of an enterprise's economic security and developing effective approaches to their assessment and management. This article examines personnel risk management as a component of ensuring an enterprise's economic security amid destabilizing factors. The paper summarizes scientific approaches to interpreting the concept of HR risks and substantiates their economic essence through their impact on the enterprise's performance. It is determined that HR risks should be viewed as the probability of deviations in personnel performance that affect the level of the enterprise's economic security and require systematic assessment and regulation. The classification of HR risks by key characteristics is summarized, which allows for structuring their manifestations and accounting for their various impacts on the enterprise's operations. Changes in labor resource utilization efficiency substantiate the interconnection among HR risks, economic security, the stability of economic processes, and the enterprise's ability to counter both internal and external threats. A methodological approach to managing HR risks has been developed, combining qualitative and quantitative assessment tools, in particular an integrated indicator based on the probability of risk occurrence and the level of its impact on performance. The proposed approach was tested at enterprises in various sectors over the 2018–2025 period, revealing changes in the level of HR risks under the influence of pandemic and military factors. The results confirm the feasibility of the proposed approach for enhancing the soundness of management decisions, minimizing the negative impact of HR risks, and ensuring the enterprise's economic security.

Keywords: enterprise economic security, HR risks, risk management, HR potential, labor productivity, personnel costs, personnel adaptation, management effectiveness, integral index, military risks.

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Introduction and problem statement

The instability of the economic environment, the intensification of the military risks, and the transformation of the labor market pose new challenges for enterprises, necessitating the assurance of their economic security, the enhancement of operational resilience, and the ability to adapt to changes in the

external environment. Business operations under such conditions are influenced by destabilizing factors, including disruptions in logistics, migration processes, limited labor resources, and increasing economic uncertainty. In this context, an important factor in ensuring operational stability and achieving economic results for a business is effective human resource

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management, which requires adaptability to external and internal changes. The further development of these processes is accompanied by an increase in personnel risks, manifested in higher employee turnover, a shortage of skilled workers, reduced labor productivity, professional burnout, and communication complications. Such risks are not only organizational in nature but also directly affect the company's economic performance through increased costs, reduced human resource efficiency, and lost revenue. In light of this, adapting the workforce to wartime conditions complements the management of HR risks, a crucial component of ensuring the company's economic security. Modern approaches to ensuring economic security require integrating risk and human resources management tools to enable timely identification of threats, assessment of their impact, and well-founded decision-making. In both academic and practical contexts, the use of analytical assessment methods has become widespread, enabling the quantitative measurement of HR risks and their impact on the enterprise's performance. The relevance of this article stems from the need to develop theoretical and applied approaches to managing HR risks as part of an enterprise's economic security during wartime conditions. The practical implementation of these approaches requires improving methodological assessment tools to quantitatively determine risk levels, analyze their economic consequences, and enhance the soundness of management decisions in human resources management.

Analysis and research of publications

The issue of an enterprise's economic security is addressed in the academic literature as a comprehensive characterization of its resilience, the protection of its resources, and its ability to adapt to changes in the external environment. M. Ivanova et al. examined the specific characteristics of risk management in enterprises' foreign economic and logistics activities through the application of general scientific approaches and specialized system structural analysis methods. The authors introduced the concept of a hedging strategy aimed at enhancing an enterprise's economic resilience and demonstrated that the effective implementation of this strategy requires the use of statistical analysis tools to forecast exchange rate fluctuations [1]. Boichenko et al. analyze the key features underlying the formation of the logistics services market and assess the impact of logistics activities on enterprises' economic security. Drawing on a review of international literature and the operational practices of European logistics firms, the authors identify strategic directions for shaping regulatory policy in the European Union's logistics

services market. The study demonstrates that market regulation may generate risks to enterprises' economic security, as the requirement to adapt business models in line with circular economy principles entails additional managerial efforts and associated costs [2].

In their publication, Boichenko and Kozheltsev examine a range of factors influencing the level of enterprises' economic security, including the digitalization of product supply chains, increased investment in research and development, governmental support for technological innovation, and regulatory measures aimed at controlling fossil fuel consumption [3].

M. Ivanova and I. Miro examined the impact of training costs of employees of the Ukrainian industrial and financial group on key variables of their economic security. They proved that investments in personnel development allow to increase the creative potential and productivity of employees, as a result of which economic results are improved, the impact of weaknesses is minimized, and economic resilience to external threats to the enterprise's activities is increased [4].

Y. Rudnichenko et al. note that the modern understanding of economic security has evolved and involves a multifunctional process of threat management in the face of globalization, technological, and military challenges. The structure of economic security includes financial, human resources, information, and other components that ensure comprehensive protection of the enterprise's operations. The human resources component holds a special place, as it is the personnel who determine the efficiency of resource utilization and the enterprise's ability to counter risks. The authors note that under such conditions, there is a need to systematically integrate human resources risk management into the enterprise's economic security framework [1].

M. Bortnikov et al. argue that HR risks are an important management focus, as they are linked to the recruitment, utilization, and development of personnel and directly impact the enterprise's performance. Human resource risk management involves a phased approach that includes identifying sources of occurrence, determining the subjects and objects of impact, and forming a comprehensive understanding of the enterprise's risk profile. A distinctive feature of HR risks is their interconnection with other types of risks, which complicates isolating them and requires a comprehensive analysis. The classification of HR risks includes employee turnover, a shortage of qualified workers, decreased labor productivity, professional burnout, and ineffective employee collaboration. In this context, human resource risk management is a systematic process aimed at the timely identification, assessment, and mitigation

of negative impacts on the enterprise's operations [2].

Zh. Shilo and M. Krechko note that the assessment of an enterprise's economic security is carried out based on various approaches, among which the most common are the indicator-based, resource-functional, economic risk theory-based, and program-targeted approaches. These approaches involve the use of a system of indicators that characterize the financial, technical-technological, intellectual-human resources, political-legal, and environmental components of a company's economic security. In particular, within the intellectual and human resources component, the assessment is based on indicators such as labor productivity, employee turnover, the capital-labor ratio, the level of innovation activity, and the availability of highly qualified employees. At the same time, the authors emphasize that the integrated assessment of economic security is formed by aggregating the values of individual components using a multiplicative approach, which allows for accounting for their interrelationships and their comprehensive impact on the enterprise's performance. The proposed approach enables quantitative measurement of the level of economic security and the justification of management decisions, taking into account the role of the human resources component in shaping the enterprise's overall stability [3].

Scientific studies emphasize that staff adaptation is a key element of human resource management, ensuring alignment of employees' professional capabilities with organizational requirements and contributing to increased work efficiency. In particular, Shapka I. et al. note that the implementation of interactive adaptation tools reduces employee uncertainty, accelerates their integration into work processes, and improves task performance. This, in turn, helps mitigate the risks of employee turnover, professional burnout, and operational errors. At the same time, adaptation is viewed not as a standalone mechanism but as a component of the human resources management system that complements HR risk management processes. Thus, employee adaptation serves as a tool for indirectly influencing HR risk levels and ensuring greater stability in the enterprise's operations [4].

Shandova N. and Sydoruk P. state that personnel risks have a decisive impact on the economic efficiency of the enterprise, as they determine the level of labor productivity, ensure the stability of the personnel composition, and determine the efficiency of resource use. The study emphasizes that traditional approaches to personnel risk management, developed in conditions of relative stability, lose their effectiveness in conditions of dynamic change, increased labor

mobility, a shortage of qualified personnel, and the influence of military factors. They also emphasize that personnel risks lead to increased costs, reduced performance, and a loss of part of the enterprise's economic results. The model of human resources risk management they propose, integrated into the economic security system, involves the phased identification of risks, their economic assessment, the planning and implementation of mitigation measures, and the monitoring of effectiveness. A distinctive feature of this approach is the use of digital analytics, knowledge management, and integration with other components of economic security, which enables consideration of human resource risk management as a tool for enhancing an enterprise's economic resilience [5].

Despite thorough research in this area, questions remain that require further refinement, particularly regarding the existence of a unified methodological approach and a system of indicators for assessing HR risks suitable for application across various areas of the enterprise's operations and aligned with its economic results.

Purpose of the article

The information base for the study consisted of scientific publications on HR risk management and enterprise economic security, as well as the author's own analytical calculations based on publicly available statistical data from enterprises. The methodological basis of the study is the dialectical method of cognition, which enables the study to reveal the interconnection between personnel risks and the economic security of an enterprise under the influence of destabilizing factors. A systematic approach was applied to determine the comprehensive impact of HR risks on enterprise performance. The generalization method was used to develop the conceptual framework and to classify HR risks by key characteristics. The structural-logical method was applied to construct a sequence of a methodological approach to HR risk management. Economic-mathematical methods were used to assess the level of HR risks, in particular by developing an integrated indicator based on the probability of their occurrence and their impact on the enterprise's performance. The comparative analysis method was applied to study the dynamics of HR risks over the 2018–2025 period and to identify changes influenced by pandemic and military factors. The graphical method was used to visualize the results and depict the dynamics of the integrated HR risk level at enterprises.

In scientific research, the concept of HR risks is interpreted ambiguously and considered from various perspectives depending on approaches to human resource management and risk management. In particular, HR risks are associated with negative

consequences arising from personnel actions or qualifications, as well as from internal and external factors. The most common manifestation of such risks is an insufficient level of employee competence, which can lead to reduced labor productivity, ineffective decision-making, and deviation from the company’s goals. At the same time, modern approaches view them not only as sources of threats but also as a potential factor in development, as they can stimulate innovative activity, increase labor efficiency, and enhance personnel adaptability [6].

Given the synthesis of scientific approaches, particularly according to Shapoval O. [6], as well as

current transformations in the economic environment, HR risks should be viewed as the probability of deviations in staff performance that affect the company’s economic results, determine its level of economic security, and require systematic assessment and regulation, taking into account the impact of crisis and war-related factors on the company’s operations.

However, the complexity and multifaceted nature of HR risks in enterprise operations, revealed during their theoretical analysis, necessitate consideration based on key characteristics, as presented in Table 1.

Table 1

Generalized Classification of Enterprise HR Risks

Classification Feature	Characteristics a
Environment of Occurrence	Internal, external
Form of Manifestation	Quantitative, qualitative
Content	Ineffective management, risks related to qualifications, motivation, and adaptation of personnel, fraud, information leaks
Nature of losses	Property, financial, informational, loss of human resources, loss of health and life

Source: authors’ development based on data [7]

The impact of HR risks on an enterprise’s economic security is multifaceted and manifests through changes in its operational effectiveness parameters. The condition, behavior, and performance of personnel directly shape the enterprise’s ability to maintain economic process stability, achieve planned results, and counter internal and external threats. An increase in HR risks weakens the enterprise’s economic security by disrupting the coordination of production

and management processes. An increase in personnel risks leads to a weakening of a company’s economic security, as it disrupts the coordination of production and management processes, reduces resource efficiency, and increases vulnerability to destabilizing factors [8].

Under conditions of effective HR risk management, it is possible to achieve positive effects on operational performance and the enterprise’s economic security, as summarized in Table 2.

Table 2

Impact of HR Risks on the Economic Security of the Enterprise

Area of Impact	Positive Effects	Negative Effects
Economic Performance	Increased labor productivity, cost optimization	Decreased productivity, increased costs
Use of Labor Resources	Rational use of working time	Loss of working time, inefficiency
Human resource potential	Development of competencies, improvement of qualifications	Loss of competencies, staff shortages
Management decisions	Improvement of management quality	Adoption of ineffective decisions
Economic security	Strengthening of the enterprise’s stability	Weakening of economic security

Source: authors’ development

The impact of human resource risks on an enterprise’s economic security necessitates the development of a methodological approach to managing them, ensuring operational stability and enhancing performance.

A methodological approach to managing human resource risks is based on a phased organization of the management process, which involves identifying risks, determining strategies for their minimization, making management decisions, implementation of appropriate measures, as well as subsequent

monitoring, evaluation, and adjustment of the management system, based on modern scientific concepts regarding the need to ensure the comprehensiveness and systematic nature of management (Fig. 1).

Although approaches to human resources risk management ensure the systematic and logical structuring of relevant management processes, they are largely focused on expert-analytical assessments and take limited account of the possibilities for quantitatively measuring the impact of human resources

risks on the enterprise’s economic performance. At the same time, current trends in the development of management systems necessitate a shift toward approaches that account for the dynamics of key economic indicators and ensure more informed management decision-making. These provisions serve

as the basis for developing a methodological approach to managing HR risks as a component of a company’s economic security, integrating qualitative and quantitative analytical tools to assess their impact on economic performance and enhance the soundness of management decisions.

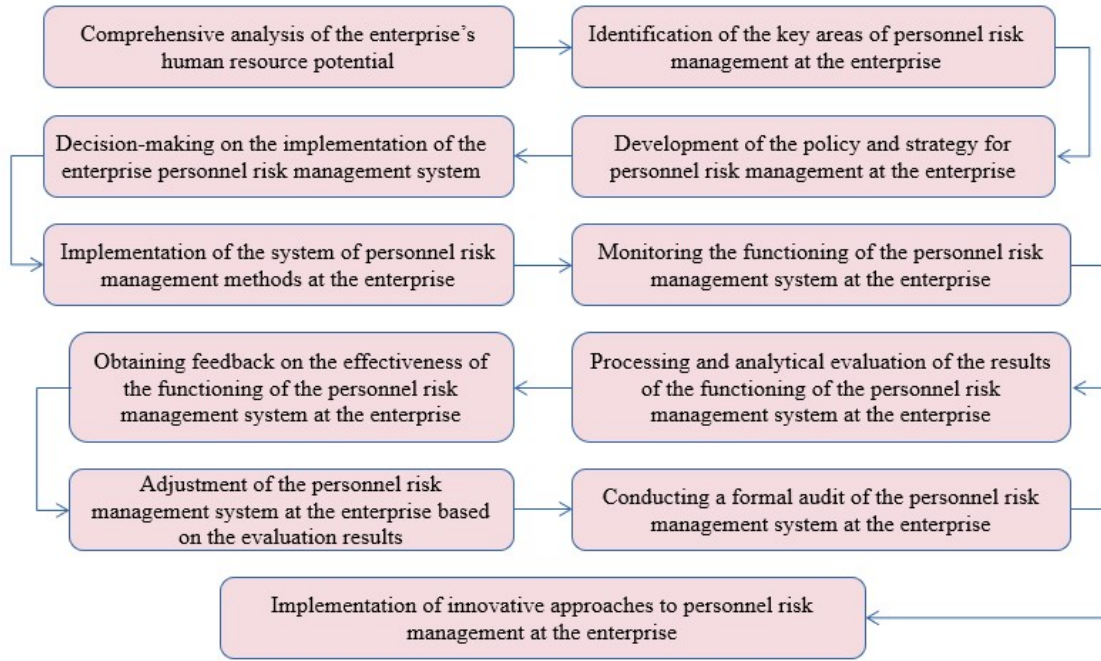


Fig. 1. Systematized methodology for managing an enterprise’s HR risks

Source: authors’ development based on data [2]

The tightening of requirements for ensuring the economic security of enterprises, driven by high external uncertainty, underscores the need to expand the methodological approach to human resource risk

management by integrating additional functional elements to enhance its adaptability and analytical soundness (Table 3).

Table 3

Development of a methodological approach to managing an enterprise’s HR risks, taking into account current challenges to the enterprise’s economic security

Functional block	Current practice	Additions	Expected effect
Identification of HR risks	Identification of risks based on expert assessments	Combining expert assessment with quantitative indicators	Increased accuracy in risk identification
Assessment of HR risks	Qualitative characterization of risk level	Introduction of quantitative indicators	Objectivization of assessment
Analysis of system functioning	Analysis of risk management results	Assessment of the impact of risks on economic indicators	Determination of the economic consequences of risks
Management decision-making	Selection of risk mitigation measures	Justification of decisions based on economic analysis and data	Improving management effectiveness
Implementation of measures	Introduction of management methods	Incorporating staff adaptation as a risk mitigation tool	Reducing turnover and increasing productivity
Monitoring and control	Tracking system performance	Using analytical indicators and dynamic assessments	Timely detection of deviations
System adjustments	Making changes based on assessment results	Using forecasting and scenario analysis	Improving system adaptability
Ensuring economic security	Not specified	Integration of HR risk management into the economic security system	Strengthening the economic stability of the enterprise

Source: authors’ development

A methodological approach to HR risk management involves the active use of a system of indicators that ensure their identification, assessment, and analysis.

Traditional indicators that characterize an enterprise’s human resource potential are used to assess its performance [3]. At the same time, in our opinion, they are not direct indicators of human resource risks, as they do not account for the probability of their occurrence or the level of impact on performance;

however, they can serve as a basis for developing a system to assess these risks, provided they are appropriately adapted.

To this end, it is advisable to interpret these indicators as HR risk indicators by supplementing them with an assessment of the likelihood of risky situations and the level of their impact on the enterprise’s economic performance. A generalized system of indicators for assessing an enterprise’s HR risks is presented in Table 4.

Table 4

System of indicators for assessing HR risks

Indicator	Economic meaning	HR risk	Probability (P)	Impact (I)	Risk level
K_{etr} – employee turnover rate	Reflects the intensity of personnel turnover	Risk of personnel loss	Percentage of resignations or expert assessment	Losses from employee replacement, reduced productivity	$R_{etr} = P_{etr} * I_{etr}$
K_{lp} – labor productivity	Characterizes the efficiency of labor resource utilization	Risk of reduced productivity	Probability of a decline in the indicator	Loss of income or production volume	$R_{lp} = P_{lp} * I_{lp}$
K_{clr} – capital-labor ratio	Reflects the provision of resources to employees	Risk of inefficient resource utilization	Probability of reduced provision	Decrease in labor efficiency	$R_{clr} = P_{clr} * I_{clr}$
K_{iac} – innovation activity coefficient	Characterizes employees’ innovative activity	Risk of reduced innovation	Probability of fewer proposals	Loss of competitive advantages	$R_{iac} = P_{iac} * I_{iac}$
K_{qual} – qualification coefficient	Reflects the level of staff training	Risk of competency deficit	Probability of a decline in qualifications	Decline in work quality	$R_{qual} = P_{qual} * I_{qual}$

Source: authors’ development

In managing HR risks, it is advisable to account for their dynamic nature, which requires a time-dependent assessment model. In this regard, it is advisable to define the integral level of HR risks as a function of time (1):

$$R(t) = \sum_{i=1}^n w_i * R_i(t), \quad (1)$$

where $R(t)$ is the integral level of HR risks at time t ; w_i is the weight of the i -th risk in the management system;

$R_i(t)$ is the level of the corresponding risk;

n – is the number of risks.

The proposed model allows enterprise management to continuously monitor HR risks, assess their impact on performance, and make timely management decisions to minimize them. The use of a dynamic approach enhances the adaptability of the HR risk management system. It ensures it remains focused on achieving the enterprise’s economic security goals in a changing environment.

An important factor influencing the model’s parameters is staff adaptability, which determines

employees’ ability to effectively integrate into the organizational environment and perform their functional duties. In particular, increasing adaptability helps reduce the likelihood of HR risks and minimize their negative impact on the company’s performance [9].

It is advisable to test the proposed methodological approach to managing HR risks across enterprises of various types, given their prevalence across sectors of economic activity. Risks such as employee turnover, staff shortages, and reduced labor productivity, as well as those associated with mobilization processes and employee relocation, are common across sectors. However, their intensity and economic consequences differ.

To test the proposed methodological approach, enterprises from various sectors were selected, specifically the logistics sector (Nova Poshta LLC), the retail sector (RUSH LLC, the EVA store chain), and the manufacturing sector (Myronivsky Hliboproduct, the “Nasha Ryaba” brand). The selection of these enterprises is based on differences in work processes, staffing levels, and risk structures, which allows for an examination of the methodological

approach’s adaptability and applicability across various organizational and economic conditions.

The study covers the period from 2018 to 2025, which allowed us to track changes in the operating conditions of enterprises under the influence of key external factors, with particular attention to 2020 as a period of transformational changes associated with

the COVID-19 pandemic, and 2022, a year characterized by significant challenges caused by military events that could objectively influence the formation and manifestation of human resource risks.

Table 5 presents indicators for assessing enterprises’ HR risks, calculated from official financial and statistical reports [10].

Table 5

Baseline indicators for assessing human resource risks of enterprises

Enterprise	Рік	K_{etr}	K_{lp}	K_{clr}	K_{iac}	K_{qual}
Nova Poshta	2018	0.18	1.00	1.00	0.65	0.85
	2019	0.20	0.98	1.02	0.63	0.84
	2020	0.22	0.95	1.05	0.60	0.83
	2021	0.24	0.90	1.02	0.55	0.80
	2022	0.28	0.80	0.95	0.50	0.78
	2023	0.25	0.88	1.00	0.58	0.82
	2024	0.22	0.98	1.08	0.65	0.86
	2025	0.20	1.10	1.15	0.70	0.88
EVA	2018	0.25	1.00	0.90	0.55	0.80
	2019	0.28	0.96	0.92	0.53	0.79
	2020	0.30	0.92	0.95	0.50	0.78
	2021	0.33	0.85	0.90	0.47	0.75
	2022	0.35	0.75	0.85	0.45	0.72
	2023	0.32	0.82	0.90	0.50	0.76
	2024	0.29	0.95	0.98	0.55	0.80
	2025	0.27	1.05	1.00	0.60	0.82
Nasha Ryaba	2018	0.15	1.00	1.10	0.60	0.88
	2019	0.17	0.99	1.11	0.59	0.87
	2020	0.18	0.97	1.12	0.58	0.86
	2021	0.20	0.92	1.10	0.55	0.83
	2022	0.22	0.85	1.05	0.52	0.80
	2023	0.20	0.90	1.10	0.57	0.84
	2024	0.18	1.00	1.15	0.62	0.88
	2025	0.17	1.08	1.18	0.65	0.90

Source: compiled by the author based on [10]

To ensure the comparability of indicators and enable their integration into a unified model for assessing the level of HR risks, all indicators were standardized.

The dynamics of key indicators characterizing enterprises’ HR risks are shown in Fig. 2.

All enterprises experienced a deterioration in the values of most indicators in 2022, indicating an increase in HR risks driven by external destabilizing factors. In 2025, a positive trend in the recovery of indicators is observed, suggesting a gradual adaptation of enterprises to new operating conditions and an improvement in the effectiveness of HR risk management. Enterprises in the trade sector proved to be the most sensitive to changes, while manufacturing enterprises demonstrated relatively more stable trends in indicators.

The integrated level of enterprises’ HR risks is determined by formula (1) as the weighted sum of partial risks, calculated based on the probability of

their occurrence and the level of impact on performance; the results are presented in Table 6.

The results of calculating the integral level of personnel risks at enterprises over the period 2018–2025 are presented as a graphical trend (Fig. 3). Visualization of the obtained data makes it possible to identify patterns of change in the indicator over time, identify phases of its growth and decline, and conduct a comparative analysis among the enterprises under study. The use of a second-degree polynomial trend line is justified by the nonlinear nature of the studied process and the presence of a pronounced extreme point, reflecting structural changes in enterprise functioning and adaptation processes driven by external destabilizing factors. The constructed trend relationship allows generalizing empirical results and determining the overall direction of HR risk transformation, without claiming their absolute minimization in the forecast period.

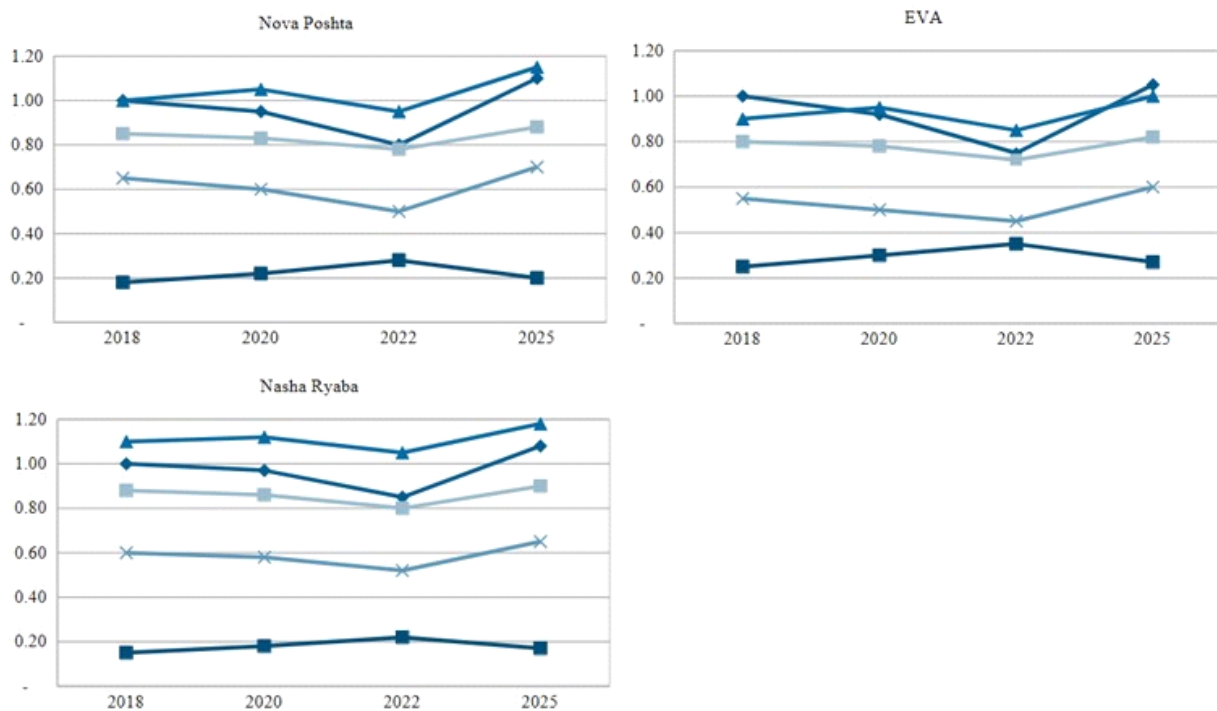


Fig. 2. Trends in key indicators characterizing enterprises' HR risks

Source: authors' development

Table 6

Integrated level of enterprises' HR risks

Year	Enterprises		
	Nova Poshta	EVA	Nasha Ryaba
2018	0.220	0.412	0.150
2019	0.272	0.494	0.191
2020	0.350	0.602	0.245
2021	0.452	0.710	0.336
2022	0.783	0.850	0.603
2023	0.533	0.824	0.392
2024	0.282	0.559	0.185
2025	0.088	0.390	0.061

Source: authors' development

The change in the enterprise HR risk level increased significantly in 2022, driven by sharp changes in operating conditions and the impact of large-scale destabilizing factors. Compared to 2020, when the rise in risk levels was primarily linked to pandemic restrictions, 2022 saw a more pronounced manifestation of these risks, as evidenced by the integral indicator reaching its maximum values for all enterprises under study. In particular, in 2022, risks related to employee turnover, staff shortages, declining labor productivity, disruptions to the stability of work processes, as well as the forced relocation of employees and mobilization processes, have significantly intensified. In contrast,

in 2020, risks of a temporary nature dominated, driven by mobility restrictions, remote work arrangements, and a partial decline in business activity, which had a less profound and more manageable impact on the human resources component of enterprises' operations.

At the same time, it should be noted that the experience of enterprise operations during the COVID-19 pandemic created significant prerequisites for enhancing the adaptability of human resources management systems. In particular, during this period, tools for crisis management, remote and hybrid work arrangements, the digitalization of management and communication processes, and mechanisms for the

rapid revision of personnel decisions were tested. The accumulated management experience contributed to greater flexibility in organizational structures, the

development of employees' digital competencies, and the formation of more effective models for responding to instability in the external environment.

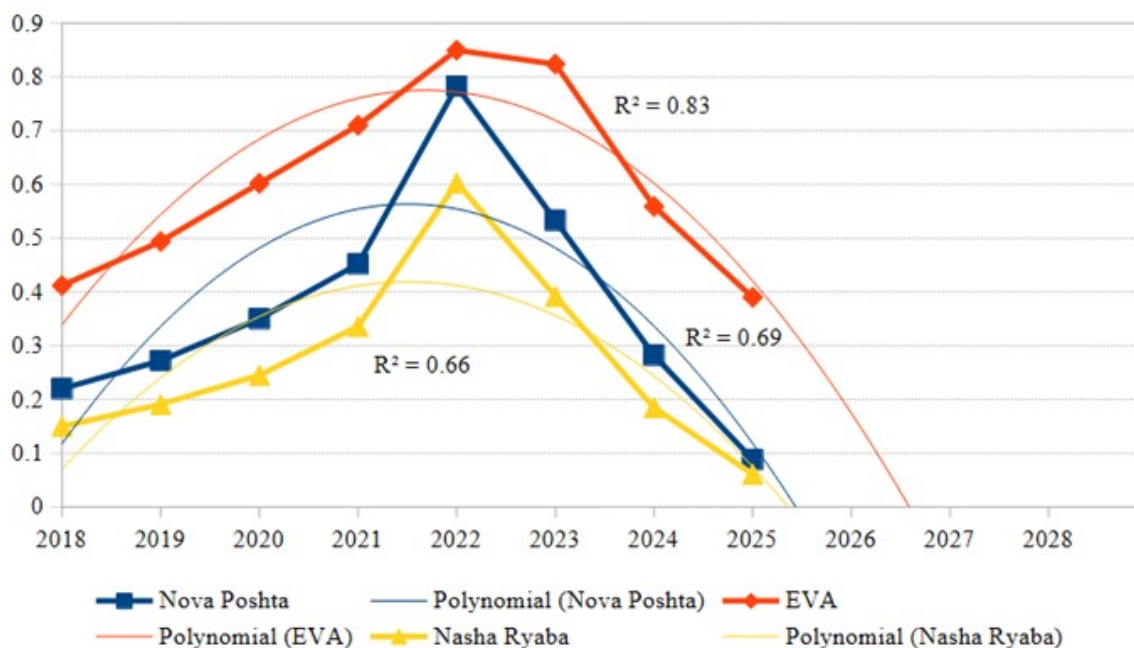


Fig. 3. Dynamics of the integral level of enterprises' HR risks

Source: authors' development

As a result, companies gained the ability to adapt more quickly to new operating conditions during the period of hostilities, which manifested itself in the ability to rapidly reallocate labor resources, maintain the continuity of business processes, reduce lost work time, and minimize the negative impact of HR risks on business performance. This, in turn, led to a gradual reduction in the overall level of HR risks in 2023–2025, reflecting not their elimination but their transformation and partial mitigation through improved management efficiency and adaptive mechanisms.

At the same time, despite the positive trend, the results obtained do not indicate that personnel risks have been fully minimized. Their presence is objective and results from the influence of both internal and external factors that determine how enterprises operate in an unstable environment. Consequently, the overall level of HR risks cannot reach zero, and its reduction should be interpreted as a result of improved management efficiency and enterprise adaptation, rather than as the complete elimination of risk phenomena.

This study enables the refinement of scientific approaches to HR risk management to ensure an enterprise's economic security during wartime. In most existing studies, HR risks are primarily examined through qualitative or expert-analytical approaches,

which limit the possibility of their quantitative measurement and integration into the system of economic performance indicators. At the same time, in modern conditions, there is a growing need for formalized assessment methods that reflect the dynamics of risks and their impact on performance outcomes.

Unlike existing approaches, this study proposes integrating the qualitative characteristics of HR risks with quantitative methods for their assessment, by determining the probability of their occurrence and the magnitude of their impact, and then forming a comprehensive indicator. This approach allows for a shift from descriptive to economically oriented management of HR risks and enables their comparative analysis over time.

Additionally, unlike traditional approaches, which assess HR risks in isolation, the study considers their connection to the enterprise's economic performance, enabling them to be viewed as a functional element of the economic security system. This expands management's analytical capabilities and enhances the soundness of managerial decision-making.

At the same time, it should be noted that the proposed approach requires adaptation to the industry-specific characteristics of enterprises, in particular by refining the weighting of individual risks and the

parameters used to assess them. Furthermore, integrating the obtained results into the system of strategic management of economic security and developing predictive models for assessing HR risks require further development.

Conclusions

As a result of the conducted research, the theoretical and methodological foundations for managing HR risks as a component of an enterprise's economic security have been substantiated, and a methodological approach to their assessment and regulation has been developed. It has been established that HR risks are dynamic in nature and increase significantly during periods of crisis, particularly in 2022, due to the influence of military factors. Compared to 2020, when risks were primarily associated with pandemic restrictions, in 2022 they took on a more systemic, large-scale nature, manifesting in the exacerbation of problems related to employee turnover, staff shortages, and declining labor productivity. It has been confirmed that experience in crisis management gained during the COVID-19 pandemic contributed to increasing enterprises' adaptability to new operating conditions, as evidenced by a gradual, then accelerated, decline in the overall level of HR risks in 2023–2025. It is substantiated that HR risks are objective and inherent; therefore, their complete minimization is impossible, and reducing their level reflects the effectiveness of management and the enterprise's adaptive capabilities. The proposed methodological approach, which integrates qualitative and quantitative tools to assess HR risks by determining their probability and level of impact, enhances the soundness of management decisions and enables consideration of their impact on the enterprise's economic performance. The practical significance of the obtained results lies in the possibility of applying the proposed approach to assess HR risks for enterprises across various industries, taking into account the specifics of their activities, thereby increasing the level of economic security and operational resilience in an unstable environment.

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УПРАВЛІННЯ КАДРОВИМИ РИЗИКАМИ ЯК СКЛADOVA ЕКОНОМІЧНОЇ БЕЗПЕКИ ПІДПРИЄМСТВА В УМОВАХ ВОЄННОГО ЧАСУ

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Динамічність сучасного економічного середовища, посилення невизначеності та вплив кризових і воєнних факторів зумовлюють зростання ризиків у діяльності підприємств. За таких умов ризики, пов'язані з персоналом, істотно впливають на стабільність функціонування та результати діяльності підприємства. Це обумовлює необхідність розгляду кадрових ризиків як складової економічної безпеки підприємства та формування ефективних підходів до їх оцінювання і управління. Стаття присвячена дослідженню управління кадровими ризиками як складової забезпечення економічної безпеки підприємства в умовах впливу дестабілізуючих факторів. У роботі узагальнено наукові підходи до трактування поняття кадрових ризиків та обґрунтовано їх економічну сутність через вплив на результати діяльності підприємства. Визначено, що кадрові ризики доцільно розглядати як ймовірність виникнення відхилень у результативності діяльності персоналу, що впливають на рівень економічної безпеки підприємства та потребують системного оцінювання і регулювання. Узагальнено класифікацію кадрових ризиків за ключовими ознаками, що дозволило структурувати їх прояви та враховувати різні аспекти впливу на функціонування підприємства. Обґрунтовано взаємозв'язок кадрових ризиків з економічною безпекою, який проявляється через зміну ефективності використання трудових ресурсів, стабільності економічних процесів та здатності підприємства протидіяти зовнішнім і внутрішнім загрозам. Сформовано методичний підхід до управління кадровими ризиками, що поєднує якісні і кількісні інструменти оцінювання, зокрема застосування інтегрального показника, сформованого на основі врахування ймовірності виникнення ризиків та рівня їх впливу на результати діяльності. Проведено апробацію запропонованого підходу на підприємствах різних сфер діяльності у динаміці 2018–2025 рр., що дозволило виявити зміну рівня кадрових ризиків під впливом пандемічних та воєнних факторів. Отримані результати підтверджують доцільність використання запропонованого підходу для підвищення обґрунтованості управлінських рішень, мінімізації негативного впливу кадрових ризиків та забезпечення економічної безпеки підприємства.

Ключові слова: економічна безпека підприємства, кадрові ризики, ризик-менеджмент, кадровий потенціал, продуктивність праці, витрати на персонал, адаптація персоналу, ефективність управління, інтегральний індекс, воєнні ризики.

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MANAGING HUMAN RESOURCE RISKS AS A COMPONENT OF A COMPANY'S ECONOMIC SECURITY IN TIMES OF WAR

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The dynamic nature of the modern economic environment, increasing uncertainty, and the impact of crisis and war-related factors are leading to a rise in risks in corporate operations. Under such conditions, personnel-related risks significantly affect the stability of operations and the enterprise's operational results. This necessitates considering personnel risks as a component of an enterprise's economic security and developing effective approaches to their assessment and management. This article examines personnel risk management as a component of ensuring an enterprise's economic security amid destabilizing factors. The paper summarizes scientific approaches to interpreting the concept of HR risks and substantiates their economic essence through their impact on the enterprise's performance. It is determined that HR risks should be viewed as the probability of deviations in personnel performance that affect the level of the enterprise's economic security and require systematic assessment and regulation. The classification of HR risks by key characteristics is summarized, which allows for structuring their manifestations and accounting for their various impacts on the enterprise's operations. Changes in labor resource utilization efficiency substantiate the interconnection among HR risks, economic security, the stability of economic processes, and the enterprise's ability to counter both internal and external threats. A methodological approach to managing HR risks has been developed, combining qualitative and quantitative assessment tools, in particular an integrated indicator based on the probability of risk occurrence and the level of its impact on performance. The proposed approach was tested at enterprises in various sectors over the 2018–2025 period, revealing changes in the level of HR risks under the influence of pandemic and military factors. The results confirm the feasibility of the proposed approach for enhancing the soundness of management decisions, minimizing the negative impact of HR risks, and ensuring the enterprise's economic security.

Keywords: enterprise economic security, HR risks, risk management, HR potential, labor productivity, personnel costs, personnel adaptation, management effectiveness, integral index, military risks.

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