

УДК 331.101.6

DOI: 10.30857/2786-5398.2025.1.6

Serhii S. Holovchenko

Kyiv National University of Construction and Architecture, Ukraine
**ALGORITHMS FOR ENHANCING EMPLOYEE PRODUCTIVITY
UNDER MARTIAL LAW**

The study examines methods for increasing labour productivity through the adaptation of personnel management strategies aimed at maintaining employees' psychological and emotional balance and motivational engagement during wartime. The methodology includes case studies and surveys of specialists from construction companies: LLC "Blago", RIEL Corporation, and LLC "Molodist". Labour productivity is assessed through an evaluation of employees' stress resilience and adaptation via a questionnaire developed using the methodology of T.H. Holmes and R.H. Rahe, K. Zamir's motivation survey (modified by A. Rean), and behavioural interviews. Key issues concerning employees' stress resilience and motivation are identified. The study analyses levels of emotional burnout, adaptability to crisis conditions, and approaches to maintaining employee engagement. Algorithms are developed to stabilise work processes and enhance productivity through psychological support and motivational programmes. It is established that employee productivity under martial law is influenced by stress resilience, social adaptation, and motivation. The primary factors reducing efficiency are emotional burnout, situational instability, and a lack of structured work process planning. An analysis of common personnel management methodologies demonstrated that flexible working hours, emotional support for employees, and regular feedback have a positive impact on productivity. The productivity enhancement strategy incorporated psychological support plans, measures, and goals, digital tools for remote work, stable information exchange, and motivation for professional development. The practical value of the study lies in the development of recommendations for employers on optimising work processes in crisis conditions, with a focus on the psychological well-being of employees.

Keywords: personnel management; psychological adaptation; motivation; stress resilience; work processes in crisis conditions.

Сергій С. Головченко

Київський національний університет будівництва і архітектури, Україна
**АЛГОРИТМИ ПІДВИЩЕННЯ ПРОДУКТИВНОСТІ СПІВРОБІТНИКІВ
В УМОВАХ ВОЄННОГО СТАНУ**

Досліджувалися методи збільшення продуктивності праці через адаптацію стратегії управління персоналом, що спрямована на психоемоційний баланс та мотиваційну активність працівників в умовах війни. Методологія включала кейс-стаді та опитування спеціалістів будівельних компаній: товариство з обмеженою відповідальністю (ТОВ) «Благо», корпорація RIEL, ТОВ «Молодість». Продуктивність праці визначалась за допомогою оцінки стресостійкості та адаптації працівників методом анкетування, питання до якого складено за методикою Т.Н. Holmes & Р.Н. Rahe (2024), мотиваційного опитування К. Заміра в модифікації А. Реан та поведінкового інтерв'ю. Виявлено ключові проблеми стресостійкості та мотивації працівників. Проаналізовано рівень їх емоційного вигорання, здатність адаптуватися до кризових умов та визначити ефективні підходи до підтримки залученості працівників. Розроблено алгоритми, спрямовані на стабілізацію робочих процесів та підвищення продуктивності через психологічну підтримку і мотиваційні програми. Встановлено, що продуктивність співробітників в умовах воєнного стану суттєво залежала від рівня стресостійкості, соціальної адаптації та мотивації до роботи. Основними факторами зниження ефективності були емоційне вигорання,

нестабільність ситуації та відсутність чіткого планування робочих процесів. Аналіз поширених методик управління персоналом показав, що гнучкий графік роботи, підтримка емоційного стану працівників та регулярний зворотний зв'язок позитивно впливали на продуктивність. Стратегія підвищення продуктивності включала плани, заходи та цілі психологічної підтримки працівників, впровадження цифрових інструментів дистанційної роботи, забезпечення стабільного обміну інформацією та мотивування до професійного розвитку. Практичне значення дослідження полягало у розробці рекомендацій для роботодавців щодо оптимізації робочих процесів у кризових умовах з акцентом на психологічний добробут персоналу.

Ключові слова: управління персоналом; психологічна адаптація; мотивація; стресостійкість; робочі процеси в кризових умовах.

Introduction. The development of algorithms aimed at increasing employee productivity under martial law has become a notable area of research in human resource management. In an environment of constant stress and unpredictable changes in the workplace, issues of psychological adaptation and stress resilience have come to the forefront. Stress and uncertainty impact task performance, making the development and implementation of algorithms to minimise their negative effects a priority. Employee motivation in such challenging times requires particular attention, as the lack of stability and frequent changes in working conditions render conventional incentive methods less effective.

It is necessary to adapt motivation tools to new realities, ensuring their relevance and their ability to maintain morale and focus on achieving set goals. M. Pasko & V. Samoilenko [26] noted that psychological adaptation, in turn, is a crucial factor in preventing employee burnout and maintaining their psychological and emotional well-being. Work processes in crisis conditions require the integration of new approaches to personnel management, which not only include organisational changes but also psychological support for employees. However, many aspects related to effective algorithms for such conditions still require further investigation. This particularly concerns the use of technological tools for employee adaptation and motivation assessment and methods aimed at reducing stress levels and improving team cohesion under constant tension.

A considerable number of researchers examined various methods for improving employee productivity. N.A. Abdelwahed & M.A. Al Doghan [1] focused their study on factors influencing employee productivity in the education sector. They discovered that employee engagement and organisational factors, particularly organisational culture, enhance productivity and effectiveness. They emphasised that methods such as effective communication, employee recognition, and involving staff in decision-making processes substantially increase motivation and contribute to stable performance in times of crisis. Active engagement involved providing employees with opportunities to participate in decision-making, express ideas, and influence processes, which stimulated their responsibility and interest in achieving common goals.

The legal aspects of employment in Ukraine under martial law were examined by N. Cherevko [5]. The author analysed legislative changes affecting labour rights and employee protection in crisis situations. The findings indicate that while changes in labour legislation are intended to support workforce activity, in practice, the enforcement of labour rights under martial law faces numerous challenges due to the lack of effective protective mechanisms.

Researchers D. Drazhner & N. Chala [7] investigated human resource management strategies in enterprises during wartime. They highlighted that under martial law, flexibility in management strategies is crucial, particularly in adapting work processes to new realities. They proposed new approaches to employee motivation, considering psychological factors and the

provision of psychological support to maintain stable productivity. These approaches included the introduction of flexible work schedules, the implementation of psychological support programmes, the involvement of employees in decision-making processes, the adaptation of motivation systems to current needs, the regular organisation of communication sessions, the reinforcement of corporate culture, and the provision of safe working conditions.

O. Elaho & S. Odion [9], in their study on the impact of the work environment on employee productivity in university business centres, demonstrated that a positive work environment is a key factor in enhancing productivity. They uncovered that working conditions, such as comfortable workspaces, adequate lighting, and the provision of necessary resources, improve employees' effectiveness. The key findings of T.J. George *et al.* [12] confirmed the importance of supporting the productivity and well-being of remote workers during the COVID-19 pandemic. Their study identified that flexible scheduling, communication support, and the facilitation of work-life balance were essential factors contributing to remote workers' productivity. Their results further highlighted that psychological support plays a crucial role in ensuring sustained motivation and efficiency.

A. Isham *et al.* [15] explored the relationship between employee well-being and productivity in economically developed countries. They established that improving employees' well-being, particularly through the promotion of mental and physical health, leads to an increase in productivity. In addition, the authors underscored the necessity of supporting employees' psychological resilience in the context of workplace stress. Y. Kanaryk [17] examined the characteristics of economic activity during martial law, particularly from the perspective of human rights and business. Her research indicated that maintaining a balance between protecting workers' rights and meeting business needs is of paramount importance under such conditions. The findings emphasised that enterprises must develop strategies to sustain productivity while addressing the constraints and safety requirements of employees. J. Kour *et al.* [18] conducted an experimental study on the role of positive psychology in enhancing employee productivity. They demonstrated that the application of positive psychology methods, such as providing constructive feedback and fostering self-awareness, improves employee performance and the overall morale within an organisation. H. Muterko & I. Romashka [23] investigated the challenges of preserving and developing the labour potential in Ukraine under martial law. They discovered that the primary challenges include not only the physical and psychological trauma experienced by employees but also a decline in workforce participation due to mobilisation and the absence of stable working conditions.

The gaps in the aforementioned studies lie in the insufficient examination of the long-term psychological and social consequences of war on employees. Many studies did not account for the specific aspects of employee adaptation to martial law, particularly in terms of psychological support and resilience. Furthermore, there has been inadequate focus on the practical mechanisms for ensuring employee safety and motivation in an environment of constant change, necessitating the development of new approaches to human resource management.

The purpose of this study is to identify approaches to enhancing employee productivity under martial law through the development of an adaptive human resource management strategy focused on maintaining employees' psychological and emotional balance and motivational engagement. The objectives are as follows:

1. To analyse personnel management methods in crisis situations, particularly those requiring psychological adaptation and resilience.
2. To examine the impact of crisis conditions on employee motivation levels and identify the most effective approaches to sustaining their engagement in work processes.
3. To develop recommendations for improving work processes to ensure high productivity under martial law, considering psychological factors.

Materials and methods. To examine employee productivity during wartime, a sample of 750 specialists was selected (250 employees from each company), all of whom worked in the following organisations: LLC "Blago", RIEL Corporation, and LLC "Molodist" [22]. The sample consisted of 70% male and 30% female respondents, aged between 25 and 50 years. Employees were selected based on the principle of sample representativeness to ensure diversity in experience and competencies within the companies. All participants were employed in organisations operating under martial law.

Company documents were analysed, including an interview with the Chief Executive Officer of "Blago", Roman Korzhak [32], annual reports of RIEL [29, 31], and an interview with the Chief Executive Officer of "Molodist", Anton Myronchuk [22, 3]. The study adhered to the ethical requirements of the World Medical Association Declaration of Helsinki [40], ensuring confidentiality and voluntary participation.

The theoretical foundation of the study is based on the works of D.Y. Milne [21] and TalkSpace [38]. The study also examined the advantages of widely used project management systems, including Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and Business Performance Management (BPM). These systems were selected due to their adaptability to the specific characteristics of the Ukrainian market and their ability to support companies even in crisis situations.

Survey questions were formulated using three methodologies: T.H. Holmes & R.H. Rahe [13], Zamire (as modified by A. Rean [28]), and behavioural interviews. Responses to questions based on T.H. Holmes and R.H. Rahe's stress resilience and adaptation assessment methodology allowed for an evaluation of employees' adaptation to stressful conditions and their ability to cope with crises during wartime. Responses derived from Zamire's motivation survey (as modified by A. Rean [28]) were used to assess the key motivational factors influencing employee productivity during the war. Behavioural interview responses identified the key factors behind productivity changes in crisis situations. The survey questions aimed to evaluate employee productivity, considering psychological, motivational, and organisational aspects deemed critical during wartime. The survey questions included:

1. How often do you experience stress due to changes in working conditions during the war?
2. How do you assess your ability to adapt to changes at work during the war?
3. Do you think that the level of stress at work affects your productivity?
4. What methods do you use to reduce stress at work during wartime?
5. How have your emotional responses to work tasks changed during the war compared to the pre-war period?
6. How have your motivational factors changed before and after the war began?
7. To what extent do you feel engaged in your work during wartime?
8. How has the war affected your intrinsic motivational factors?
9. Have your work-related goals changed during the war?
10. What factors most motivate you to work during wartime?
11. How would you assess your work effectiveness in wartime conditions?

A SWOT analysis of the strategies employed by four companies was conducted to examine their impact on labour productivity during wartime conditions. A case study method was used to analyse the experiences of these companies. The productivity of employees in construction companies was assessed based on labour productivity growth rates, product quality levels, and labour profitability. These criteria not only facilitated the monitoring of employee effectiveness but also enabled an evaluation of the overall impact of their activities on the company's success. Labour profitability indicates how effectively resources were utilised to achieve economic outcomes. In construction companies, this was typically measured by profit per employee or the cost-

effectiveness of wage expenditure. Labour productivity growth rates were a key indicator as they measured the speed at which the volume of completed work increased per unit of time. In construction companies, this was assessed by the number of completed projects per month or the volume of completed work, measured in square or cubic metres. Monitoring productivity changes by comparing work volumes before and during wartime enabled an evaluation of how well teams adapted to new conditions.

An analysis was conducted on the use of systems such as Zoho CRM, Building Information Modelling, Asana, Trello, and Slack. Assessing employees' attitudes towards changes in the work environment and management practices allowed for the determination of the effectiveness of current strategies and areas for improvement. Based on the findings, recommendations were developed for employers on optimising work processes with a focus on employees' psychological well-being. These recommendations were integrated into a strategy that contributed to increased productivity and efficiency in each company. For each strategic element, objectives, achievement indicators, and corresponding measures were defined.

Results.

Approaches to labour productivity analysis during wartime. Labour productivity determines the effectiveness of task completion and the achievement of specific goals through the use of resources. However, in wartime, this concept may shift due to the impact of factors such as stress, instability, and physical danger, which often reduce employees' emotional resilience and, consequently, their overall work performance. As noted by D.Y. Milne [21], employees' emotional and psychological well-being directly influences their ability to perform tasks, make decisions, and manage work processes effectively. One of the primary aspects of improving labour productivity in wartime is companies' adaptation to new realities. This involves a rapid shift to remote work and the adjustment of corporate processes to work in conditions of limited access to offices or even in the face of physical danger. In addition, during a crisis period, the innovative adaptation of companies to new technologies that could assist in personnel management and improve work efficiency is crucial.

In Ukraine, some companies, particularly in the IT sector, actively implemented automated systems for monitoring and managing work processes. Project management software, video conferencing, and online learning platforms became essential tools for maintaining employee productivity during the war. Their use helped preserve operational stability and facilitated task flexibility. From a management strategy perspective, flexibility and adaptation are especially important during wartime. Leaders have to react quickly to changes, make prompt decisions regarding employee safety, and adjust working conditions accordingly. Particular attention is given to the role of leadership in wartime. Leaders who guide their teams through periods of uncertainty and stress, support employees, understand their needs, and respect their psychological well-being, enhance employee engagement considerably. This is crucial not only for maintaining productivity but also for preserving the company's reputation in the labour market.

Managers who apply a comprehensive approach to organising work and supporting employees' psychological health can maintain high levels of productivity even during a crisis. Best practices for increasing productivity during the war include the use of digital tools to support communication, the introduction of psychological support programmes, rapid adaptation to new working conditions, and high flexibility in decision-making processes.

Impact of crisis conditions on employee motivation: psychological aspect. Fear for the future, uncertainty regarding the stability of the company, and reductions in financial and resource capabilities often lead to decreased levels of engagement and job satisfaction. During this period, employees may feel a lack of support from management, which also affects their attitude towards

task completion. However, proper management and communication during a crisis can help maintain or even increase motivation through team support and clarity of goals.

Survey results from employees of four construction companies in Ukraine demonstrated differences in adaptation to martial law and the impact of these conditions on stress levels, motivation, productivity, and emotional state (Table 1). The stress levels among employees varied depending on the company. In LLC "Blago," nearly half of the respondents reported feeling stressed only occasionally, while one in five experienced stress frequently, indicating a moderate level of stress. In the RIEL Corporation, nearly a quarter of respondents stated that they often felt stressed, and half experienced stress only occasionally, indicating tension within the team.

Table 1

Survey results of the study participants, %

No.	Question	Response options	LLC "Blago"	RIEL Corporation	LLC "Molodist"
1	How often do you experience stress due to changes in work conditions during the war?	Often	22	23	30
		Occasionally	48	49	60
		Rarely	15	26	5
		Never	15	2	5
2	How do you assess your ability to adapt to changes at work during the war?	Very well	19	30	25
		Well	21	20	30
		Satisfactory	50	20	20
		Poorly	10	30	25
3	Do you think that the level of stress at work affects your productivity?	Yes, substantially	22	15	14
		Yes, but not strongly	28	35	30
		No, it does not	25	17	30
		I am unsure	25	33	26
4	What methods do you use to reduce stress at work during wartime?	Psychological support	15	25	38
		Communication with colleagues	35	35	32
		Other (please specify) – rest, physical exercises	50	40	30
5	How have your emotional responses to work tasks changed during the war compared to the pre-war period?	Became more stressful	14	19	22
		Motivation decreased	14	31	32
		Anxiety increased	58	32	26
		Remained unchanged	14	18	20
6	How have your motivational factors changed before and after the war began?	Motivation decreased	50	55	40
		Motivation remained the same	39	35	50
		Motivation increased	0	5	0
		Motivation changed, but slightly	11	5	10
7	To what extent do you feel engaged in your work during wartime?	Very engaged	40	35	45
		Moderately engaged	40	50	55
		Slightly engaged	20	15	0
		Not engaged at all	0	0	0

End Table 1

No.	Question	Response options	LLC "Blago"	RIEL Corporation	LLC "Molodist"
8	How has the war affected your intrinsic motivational factors?	Motivation decreased	60	50	55
		Work goals have changed	40	40	40
		It had a positive effect on motivation	0	0	0
		The motivation remained unchanged	0	10	5
9	Have your work-related goals changed during the war?	Yes, the goals changed considerably	36	35	25
		Changed, but only slightly	24	55	25
		Not changed	20	5	35
		I am unsure	20	5	15
10	What changes in work organisation have occurred in your company during the war?	Expansion of remote work	22	25	45
		Changes in work processes	38	35	50
		Introduction of new technologies	20	15	5
		Shorter working day	20	25	0
11	How do you assess your work effectiveness under martial law?	Decreased substantially	25	50	15
		Decreased slightly	15	10	20
		Remained stable	20	20	35
		Improved	25	20	15
		I am unsure	15	0	15

Source: compiled by the author.

The highest percentage of respondents who rated their adaptability as "satisfactory" was observed in LLC "Blago" (50%), which may indicate a relatively smooth adaptation process within this company. In contrast, one-third of respondents at RIEL rated their adaptability as "poor", highlighting challenges in this organisation. At LLC "Molodist," half of the respondents assessed their adaptability as "good", suggesting a positive adjustment to change among employees.

The impact of stress on productivity was predominantly significant. Respondents at LLC "Blago" reported a considerable influence of stress on their work efficiency. Meanwhile, the situation appeared more favourable at RIEL, where only 15% of employees reported stress as a major factor affecting their performance. The most resilient workforce was observed at LLC "Molodist", where 30% of employees indicated that stress did not affect their productivity, suggesting a stable psychological climate within the company. The survey results provide several key insights into the impact of war on working conditions and employee motivation. The majority of respondents across all companies reported that the war had altered their emotional responses to work-related tasks. Most participants experienced increased anxiety, decreased motivation, or heightened stress levels. This suggests that the war exerted a substantial impact on employees' psychological and emotional well-being, leading to greater pressure and uncertainty in the workplace. Adaptation to workplace changes during the war was evaluated inconsistently. While most respondents reported having adjusted to new conditions, reduced motivation and persistent stress remained significant factors. Some participants described their adaptability as satisfactory,

whereas others indicated that adaptation was slow and accompanied by difficulties, such as a lack of psychological support and excessive workloads.

Furthermore, the manner in which companies implemented changes in their organisational structures played a crucial role. The widespread adoption of remote work emerged as one of the most noticeable responses, demonstrating organisational flexibility in adapting to crisis conditions. Many companies also modified work processes to ensure both safety and effectiveness under restrictive circumstances. In terms of motivational factors, the majority of respondents reported a decline in motivation during the war, likely due to economic uncertainty, concerns about the future, and a lack of clear workplace objectives. Changes in motivational drivers were also evident in employees' reassessment of their professional goals, often influenced by a diminished sense of stability and long-term career development.

The assessment of work efficiency further demonstrated a decline in overall productivity across all companies, primarily due to stressful conditions and procedural adjustments. However, some respondents reported that their performance remained stable or even improved, which may indicate a high level of adaptability in certain cases. Overall, the survey findings demonstrate that the war had a profound impact on working conditions, employees' emotional well-being, and motivation. For organisations, this underscores the importance of supporting employees and fostering a stable and supportive work environment amidst uncertainty and stress. Indicators of stress, motivation, productivity, and emotional stability suggest that companies that provide better employee support, such as LLC "Blago" and LLC "Molodist", and actively work towards stabilising organisational processes achieve more favourable outcomes under wartime conditions.

Analysis of management strategies. During the war, construction companies implemented a range of measures to optimise operations, reduce costs, and adapt to the new circumstances. At LLC "Blago", for example, project management software was introduced to enhance work efficiency. This tool facilitated the organisation of tasks, monitoring of deadlines, and real-time tracking of project progress, thereby minimising communication costs and process disruptions. In addition, the company adopted software solutions for construction planning and resource management, such as Buildertrend. This enabled more efficient allocation of materials, timely assessment of resource needs, and improved budget control. Consequently, the implementation of these technological solutions contributed to more streamlined construction workflows, reducing time spent on reporting and coordination among teams.

The implementation of remote communication platforms such as Slack and Microsoft Teams enabled continuous connectivity among employees, irrespective of their physical location. This ensured uninterrupted communication, even in the context of constrained resources or remote working conditions during wartime. The optimisation of construction material supplies was achieved through the renegotiation of the majority of agreements in favour of local suppliers, thereby reducing dependency on external deliveries. RIEL prioritised the adoption of advanced software solutions to automate key business processes, particularly inventory monitoring and procurement management. This reduced material costs by improving demand forecasting and optimising order volumes. The integration of digital tools also expedited the supply coordination process, facilitating accelerated logistics operations and mitigating risks associated with supply disruptions. Furthermore, the enhancement of supply chain management systems enabled more efficient coordination between suppliers, warehouses, and production units, thereby improving overall company productivity and ensuring a more agile response to market demand fluctuations. The SWOT analysis demonstrates that all three companies possess strengths that sustained their competitiveness during wartime (Table 2).

LLC "Blago" and RIEL Corporation leveraged experienced professionals and well-established logistics processes to ensure the efficient execution of construction projects. LLC

"Molodist" placed emphasis on innovative solutions that enhance energy efficiency. LLC "Blago" encountered financial constraints due to economic instability, rising construction material costs, and the overall decline in consumer purchasing power. However, the company actively sought investors by offering flexible collaboration terms and forward-looking projects that align with market demands. This strategy facilitated continued construction activities and the development of new residential complexes despite financial challenges. RIEL Corporation maintained a strong reputation in Ukraine's real estate sector, as evidenced by its achievements and industry recognition. According to rankings compiled by Forbes Ukraine and LUN, RIEL secured the second position among Ukrainian developers in terms of the number of residential units delivered. Since early 2023, the company has completed 3,209 apartments across eight residential complexes located in Kyiv and Lviv [4].

Table 2

SWOT analysis of management strategies in companies adapting to martial law

Company	Strengths	Weaknesses	Opportunities	Threats
LLC "Blago"	Experienced personnel. Utilisation of modern technologies such as 3D modelling, Building Information Modelling (BIM), and drones for construction site monitoring. Flexibility in construction planning.	Limited financial resources. Dependency on suppliers. High market competition.	Attracting investors. Utilisation of government support programmes. Market expansion through reconstruction projects.	Decline in purchasing power. Rising cost of materials. Political instability.
RIEL Corporation	Strong market reputation. Well-developed logistics system.	High operational costs.	Expansion of residential construction. Participation in government tenders and investment projects.	Legislative changes complicating business operations. Exchange rate fluctuations.
LLC "Molodist"	Innovative approach to project design. Energy-efficient solutions. Stable partnerships. Improved quality control measures and use of certified materials.	Lack of large-scale projects. Shortage of skilled labour.	Growing demand for environmentally sustainable buildings. Partnerships with international companies.	Economic crisis impact. High risks due to market instability.

Source: compiled by the author based on data from [3, 30, 32].

All companies encountered difficulties, including financial constraints, a shortage of skilled labour, and market instability. The issue of dependency on suppliers and material costs was particularly acute, as it could affect the timely completion of projects. Opportunities for companies included attracting investors, utilising government programmes, and entering international markets. The successful exploitation of these opportunities enabled construction enterprises to mitigate financial risks and enhance productivity. However, threats such as economic crises, legislative changes, and declining purchasing power could complicate business operations substantially.

Molodist focused on improving the quality of its work by implementing an internal quality control system and the use of certified materials, which entailed the introduction of several

requirements for suppliers of construction materials. Specifically, the company introduced mandatory certification for all procured materials, a requirement that was previously absent [22]. Certificates of compliance with safety and environmental standards became obligatory. For instance, in the case of concrete supply, the company began requiring quality certificates confirming compliance with international standards DSTU EN ISO No. 12572:202x "Hygrothermal performance of building materials and products – Determination of water vapour transmission properties – Cup method" [8]. Similarly, for insulation materials, compliance certificates ensuring adherence to environmental safety and efficiency standards were mandated [19].

Furthermore, Molodist adopted an innovative approach to design, prioritising the integration of advanced architectural solutions with the functionality of residential spaces. The primary emphasis was placed on the use of modular structures, which facilitated cost optimisation and reduced project completion timelines. The company's energy-efficient solutions included heat recovery systems, the insulation of facades with modern thermal insulation materials, and the installation of energy-efficient windows with triple glazing. In addition, projects incorporated solar panels to partially power shared spaces and smart home systems that optimise energy consumption in individual apartments.

All companies faced resource limitations due to war; however, they successfully addressed supply chain disruptions by shifting towards local resources and seeking alternative transportation methods (Fenyuk *et al.*, 2024). Alternative supply routes for construction materials included rail transport instead of road transport, which helped reduce fuel costs and delivery times, and the organisation of maritime transport for large shipments of materials. Moreover, mixed transport methods (a combination of rail and road transport) were employed, and new suppliers were sought to reduce dependency on a single source.

Blago, faced with resource constraints due to war, was compelled to reduce investment in new projects and cut operational costs [3]. Similarly, RIEL encountered challenges arising from market instability in the real estate sector, yet it managed to offset these constraints through process optimisation and the implementation of new project management technologies. Molodist was forced to reduce the number of new construction projects; however, this did not compromise the quality of project execution due to a more efficient allocation of available resources.

Labour productivity analysis. The assessment of employee productivity within construction companies was conducted based on key criteria: the rate of labour productivity growth, the quality of output, and labour profitability. These criteria not only facilitated the monitoring of employee effectiveness but also enabled an evaluation of the overall impact of their activities on the company's success. In the case of Blago, labour productivity increased due to the implementation of new technical solutions and the optimisation of work processes. Similarly, RIEL experienced an increase in labour productivity through the adoption of more efficient project management methods, particularly by utilising modern project planning and monitoring software such as Asana.

The rate of labour productivity growth in Molodist was particularly significant, owing to the introduction of new technologies and working methods, which allowed for an increase in completed work volumes while maintaining high-quality standards. Product quality was another crucial criterion, as in the construction sector, it encompassed not only the provision of high-quality materials but also the execution of work to a superior standard. Molodist established a strong reputation in the industry due to its internal quality control system, which involved thorough inspections at every stage of construction and the exclusive use of certified materials. According to an internal analysis by RIEL [30], the company reported an 8% increase in profitability as a result of optimised logistics and reduced material costs through favourable supplier agreements.

At Blago, labour profitability improved due to an increase in construction project volumes and the enhanced efficiency of equipment and workforce utilisation. The number and scale of

construction projects vary depending on the company's size and specific business focus. For instance, a construction company may undertake several to dozens of projects annually, ranging from small-scale individual buildings to large infrastructure or commercial developments. Project volume can be assessed in terms of cost, area, or the amount of work completed, enabling a precise evaluation of the resources required for execution. Improved efficiency in equipment utilisation within a company can be achieved through several factors. For example, Blago owns its own fleet of construction equipment, which helps to reduce rental costs and ensures greater control over maintenance and operational expenses. In addition, upgrading its technical fleet, such as acquiring more modern and energy-efficient machinery, can greatly lower operating costs and enhance productivity. In cases where a company rents equipment, securing rental discounts or favourable leasing terms can also contribute to improved profitability.

The assessment of labour productivity within construction companies was conducted using key criteria, including the rate of labour productivity growth, product quality, and labour profitability. The first criterion includes indicators such as the number of completed projects per month or the volume of completed work measured in square or cubic metres. This criterion helps determine how efficiently a company completes projects within a given time frame. In addition, product quality must be considered, as it involves not only high-quality execution but also the use of certified materials and compliance with construction standards. Product quality is also measured through the defect rate, the percentage of rejected work, and the compliance index with regulatory construction norms. The third criterion is labour profitability, which is determined by the amount of profit generated per unit of the wage fund. This measure allows for an assessment of how effectively a company utilises its workforce in relation to the profit obtained. Regarding specific companies, including RIEL, "Blago", and "Molodist", their productivity before and after the onset of the war was evaluated based on these criteria. In 2021, RIEL successfully completed 85,977 m² of construction in the OK'LAND residential complex and 17,424 m² in the Bereh Dnipra residential complex [29]. These figures indicate a high pace of construction; however, following the onset of war in 2022, output levels declined due to disruptions in the supply of building materials and workforce migration [31]. As a result, productivity decreased by 30%, yet the quality of work improved, as indicated by an increase in the compliance index with construction standards and stable costs associated with defect rectification. Regarding profitability, RIEL demonstrated an 8% increase, primarily due to optimised logistics processes and reduced material costs achieved through favourable agreements with suppliers.

At Blago, labour productivity increased as a result of the implementation of new technical solutions and the optimisation of work processes. Overall, in 2022, Blago Developer successfully completed a substantial volume of construction, delivering new residential complexes, finalising the construction of hundreds of apartments, and executing large-scale architectural projects. These projects involved the use of over 415,000 ceramic blocks, 1.051 million aerated concrete blocks, more than 60,000 m³ of concrete, and the installation of thousands of windows and doors [14]. This enabled a considerable expansion in completed work while maintaining high quality. Simultaneously, profitability increased due to the improved efficiency of machinery usage and the expansion of construction projects. The number and scale of projects varied depending on the company's operational focus, while cost optimisation for equipment contributed to enhanced labour efficiency. The company MOLODIST demonstrated substantial growth in productivity through the adoption of new technologies and work methods, allowing for an increase in completed work while maintaining high quality. Notably, in 2022, the MOLODIST Investment Group received the honorary award in the "Construction Company of 2024" category from the Confederation of Builders of Ukraine. This recognition highlights the company's contribution to the construction sector and the nation's recovery efforts. In 2022, it was among the first companies in the Kyiv

region to resume construction, and by 2024, it ranked among the top 10 most active construction companies according to Forbes Ukraine and LUN. In recent years, the company commissioned 1,563 apartments across four residential complexes, marking only the beginning of its achievements. The results of its operations in 2023–2024 include the successful completion of apartments in the Atmosfera, Molodist, Olimp, and Irpin City residential complexes, market leadership in the Kyiv region's real estate sector, and active participation in state programmes such as "YeOselya" and "YeVidnovlennia".

The company maintained product quality through an internal control system that involved inspections at every stage of construction and the use of exclusively certified materials. The general analysis demonstrated that all companies employed similar methods to assess efficiency, focusing on specific measurable indicators. All firms experienced changes in labour productivity and profitability, particularly due to external economic factors associated with the war. However, each company implemented distinct strategies to improve its performance, enabling adaptation to crisis conditions. A comparison of the productivity of the construction companies RIEL, Blago, and Molodist before and after the outbreak of war demonstrates substantial changes in their operational efficiency due to external circumstances and internal adaptation strategies (Table 3).

Table 3

Comparative analysis of construction company productivity

Criterion	RIEL	Blago	Molodist
Productivity growth rate	Pre-war – 85,977 m ² completed in the OK'LAND residential complex, 17,424 m ² in the Bereh Dnipro residential complex	Pre-war – Increased productivity due to new technical solutions, involving over 415,000 ceramic blocks, 1.051 million aerated concrete blocks, and more than 60,000 m ³ of concrete	Pre-war – Considerable growth due to the implementation of new technologies and methods
	Post-war – Decline of 30% due to supply disruptions and workforce migration	Post-war – Increased productivity through optimised work processes	Post-war – Expansion in output while maintaining high quality
Product quality	Pre-war – High quality, logistical optimisation	Pre-war – High-level execution, use of certified materials	Pre-war – Strong reputation maintained through internal quality control
	Post-war – Improvement in construction standards compliance index, fewer defects	Post-war – Use of certified materials, quality control at every stage	Post-war – Enhanced quality through rigorous control and material certification
Labour profitability	Pre-war – Profitability increased due to project volume growth	Pre-war – Increased efficiency through improved machinery use	Pre-war – Profitability growth driven by innovative technologies
	Post-war – Profitability increased by 8% due to reduced material costs	Post-war – Improved efficiency through equipment upgrades and process optimisation	Post-war – Profitability growth due to internal quality control

Source: compiled by the author based on [14, 29, 31].

Prior to the war, all three companies exhibited strong productivity growth. RIEL delivered substantial construction volumes, while Blago achieved productivity gains through the adoption of new technical solutions and process optimisation. Meanwhile, Molodist continued its rapid development by implementing advanced technologies, which enabled not only an increase in completed work but also the maintenance of high product quality. For all companies, product quality remained a key priority, encompassing the use of certified materials and rigorous quality control at every stage of construction. RIEL maintained steady profitability growth by optimising material costs and improving logistical processes. Blago increased profitability by enhancing machinery and workforce efficiency. Molodist, leveraging innovative technologies and control systems, ensured consistently high profitability across all project phases.

Following the outbreak of war, all companies experienced changes in their operations. RIEL's productivity growth rate declined by 30% due to disruptions in the supply of building materials and workforce migration. However, the company was able to improve its compliance index with construction standards, indicating a heightened focus on product quality in times of crisis. Meanwhile, Blago maintained positive results by enhancing efficiency through optimised work processes, the adoption of new equipment, and strengthened quality control measures. Similarly, Molodist sustained high productivity levels, preserving its reputation by maintaining rigorous quality control and implementing innovations. Changes in labour profitability were less pronounced but nonetheless significant. RIEL's profitability increased by 8% due to optimised material costs and logistics. Blago's profitability improved through enhanced efficiency in equipment usage and the expansion of construction projects. Molodist maintained a high level of profitability by introducing new technologies and ensuring consistently high product quality. Thus, each of the companies continued to develop and adapt its strategies to the new conditions. Notably, despite challenges such as reduced construction volumes and rising costs, these companies managed to sustain or even enhance their profitability and productivity through innovation and process optimisation. Therefore, declining project volumes and increasing expenses emerged as the primary challenges during the wartime period. However, their adaptive strategies enabled them to maintain stability in adverse conditions.

Recommendations for enhancing labour productivity. To sustain high productivity levels during a state of war, it is essential to consider not only organisational factors but also psychological aspects that affect employee efficiency. In crisis situations, the working environment must be adapted to new realities to minimise the negative impact of stress and ensure team stability. It is crucial to identify specific methods for improving work processes. One of the key strategies for enhancing employee productivity is the implementation of flexible working arrangements. During wartime, employees may face various domestic challenges, such as power outages or the necessity to fulfil responsibilities outside the office. Allowing employees to adjust their work schedules to accommodate personal needs can help reduce stress levels, thereby positively impacting productivity.

War exerts psychological pressure on employees, potentially leading to emotional burnout and decreased motivation. The introduction of mental health support programmes, such as psychological counselling, support groups, or stress management webinars, can help stabilise employees' emotional well-being. For instance, TalkSpace [38] recommends allowing employees to take breaks as needed, which may include encouraging five-minute rest periods or a lunch break without requiring online connectivity during working hours.

In times of crisis in Ukraine, it is crucial to provide employees with clear instructions and realistic objectives. Uncertainty exacerbates anxiety and reduces productivity. Therefore, managers should clearly define expectations and establish achievable tasks that can be completed with limited resources. For instance, instead of large-scale projects, work should be divided into smaller tasks

with specific deadlines. During periods of crisis, it is particularly important to provide employees with positive feedback and recognition for their achievements. This approach helps maintain motivation and strengthens their sense of purpose within the organisation. Managers should conduct regular performance evaluations, highlight employees' successes, and express gratitude for their contributions to overall results. The practice of acknowledging even minor achievements greatly enhances team engagement.

Employees require additional knowledge and skills to adapt to changing conditions. It is essential to ensure access to educational resources, training sessions, and professional development courses. For example, during periods of uncertainty, employees may benefit from training in stress management, digital technologies, or crisis management. This not only enhances their competencies but also reinforces their self-confidence.

One of the most effective strategies for improving productivity in situations where office access is restricted is the introduction of digital platforms for workflow management. Project management systems such as ERP, CRM, and BPM facilitate real-time team coordination, ensuring transparency and access to critical documents. These systems help minimise task delays and enhance communication efficiency among employees. They also enabled businesses to integrate resource management, automate processes, and respond swiftly to changes in uncertain conditions. In times of crisis, fostering a sense of unity and support among employees is of paramount importance. Managers should organise regular team meetings, even in an online format, to discuss ongoing developments and address challenges faced by employees. Such meetings help mitigate feelings of isolation, encourage peer support, and create an atmosphere of trust and collaboration. Thus, improving work processes during wartime requires a comprehensive approach that incorporates both technical solutions and psychological support measures. Implementing these strategies not only sustains organisational stability but also maintains high levels of employee engagement and productivity despite challenging circumstances.

The issue of declining employee motivation remains one of the most pressing challenges for Ukrainian enterprises, particularly in the context of war. A survey analysis demonstrated that a substantial proportion of employees experience stress and diminished motivation due to constant changes in working conditions and uncertainty about the future. Most respondents reported that high stress levels adversely affect their productivity. Findings also indicate that employee motivation factors shifted compared to the pre-war period, with workplace goals frequently being adjusted in response to external circumstances. Among the most common challenges are reduced employee engagement in work processes, increased anxiety, and decreased initiative. Moreover, organisations do not always provide sufficient support for their employees amid ongoing changes and crises, exacerbating the problem.

One of the key factors influencing employee productivity is their ability to adapt to new conditions. However, survey results show that not all employees possess a high level of adaptability. A considerable proportion of employees rate their adaptability as merely satisfactory or even poor, highlighting the need for additional support measures. Furthermore, different companies employ various strategies to support their employees, yet these initiatives are often inconsistent and fail to address the specific needs of individual staff members.

To address this issue, businesses must implement a comprehensive employee motivation strategy that considers both psychological and organisational aspects. Firstly, it is essential to provide regular psychological support for employees, which will help reduce stress and anxiety levels. Psychological support can include individual consultations with specialists and group training sessions on stress management and emotional resilience. Secondly, companies should review their approaches to organising work, including implementing flexible schedules and remote work for employees who require them. Furthermore, it is crucial to ensure transparent

communication between management and employees regarding company changes and their impact on work processes. Thirdly, a system of material and non-material incentives should be developed, considering the individual needs of employees.

During wartime, loyalty bonuses, family support programmes, and compensations for additional risks faced by employees in war conditions become particularly important. Loyalty bonuses are calculated based on an employee's length of service, achievements, and contributions to the company's success. The two most common approaches are: a fixed bonus amount or one based on specific criteria, such as the length of service and stability of results. Bonuses are typically paid to permanent employees who have been with the company for over a year and demonstrate consistent performance and a high level of engagement. Payments are usually made once a year, for example, at the end of the financial period, as a reward for long-term collaboration. Compensation for additional risks during wartime is also considered. It covers risks related to physical danger and working in combat zones or in unstable economic conditions. The amount of compensation depends on the level of risk and the scope of responsibilities, and payments may be linked to actual working conditions and the level of responsibility. For example, the “Monolit” construction company implemented a bonus system for exceeding targets and achieving high results, which motivates employees to achieve better performance.

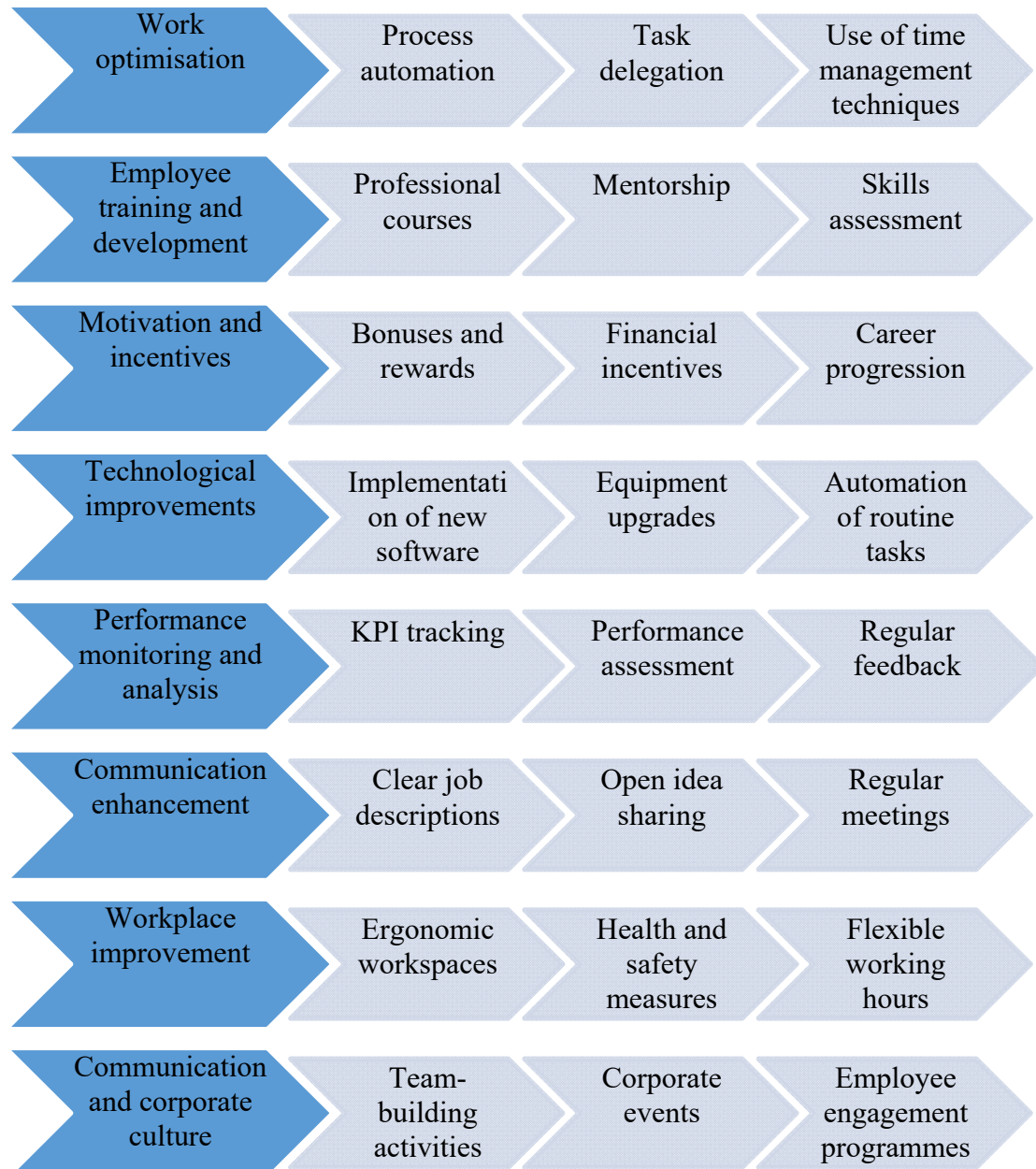
To improve internal project management processes, companies can apply several strategies. Firstly, it is advisable to implement project management systems (such as ERP systems or specialised software solutions) that automate project monitoring, resource allocation, and timeline management. This helps reduce human error and increases the accuracy of outcome predictions. Secondly, optimisation of production resource costs can be achieved through regular analysis of procurement and suppliers, the use of alternative materials or technologies that reduce costs, and the implementation of sustainable development principles, such as reducing energy or water consumption. An important aspect is also improving communication between different departments and contractors to effectively manage projects, which helps reduce delays and increase profitability.

Labour productivity can be increased, for example, within 6–12 months through the conclusion of more favourable agreements, which include bonuses for achieving specific work volumes, additional discounts on materials or services, and terms that ensure better cost savings through long-term contracts or partnerships with suppliers. These agreements have become more advantageous due to conditions that provide greater flexibility in operations and cost optimisation, thereby enhancing the efficiency of production processes. Thus, to improve employee motivation in times of crisis, it is necessary to implement comprehensive measures, including psychological support, organisational changes, and an incentive system. This not only reduces stress levels among employees but also enhances their productivity and engagement in work processes, even in the context of martial law.

Adapted personnel management strategy. The strategy for increasing productivity among study participants during wartime includes a set of actions aimed at maintaining the company's operational efficiency, supporting employee morale, adapting to new conditions, and ensuring safety (Figure 1).

Reducing the time required for information transfer between different management levels contributes to improved communication. A successful indicator is a 15% reduction in decision-making time over six months. In construction companies, decisions are typically made by construction managers, project coordinators, or site managers, who are responsible for organising work processes and coordinating with other departments. They may manage dozens or even hundreds of construction workers, depending on the project scale. The success indicator for reducing decision-making time is the reduction of delays at each work stage, thus accelerating the overall construction process. In particular, an important tool for improving management processes

in the construction industry is the implementation of CRM systems for effective management of relations with clients, contractors, and partners.



Source: compiled by the author.

Figure 1. Key elements of the productivity enhancement strategy and measures for their implementation

Systems such as Zoho CRM or Salesforce enable the automation of processes, order tracking, and document flow, greatly simplifying communication and enhancing work efficiency. Furthermore, mobile applications for managing construction projects, such as Procore or Buildertrend, allow for real-time project management, progress monitoring, cost tracking, and tracking task deadlines, facilitating more accurate plan execution and reducing decision-making time. The implementation of such technologies increases the efficiency of work processes and reduces the likelihood of errors.

The primary goal of staff training and development is to enhance qualifications for the effective use of modern equipment and technologies. The success indicator is a 15% increase in task completion using new technologies over nine months. To achieve this, training on the operation of new equipment is organised, a mentoring programme is introduced where senior employees train newcomers, and online courses on the latest construction technologies, such as Building Information Modelling, are conducted. There is also a need to accelerate the training of staff to replace mobilised workers [32].

Motivation and stimulation involve increasing employee interest in performing their duties to a high standard. The success indicator for increasing motivation is a 20% rise in the number of tasks completed on time over one year. The introduction of a performance-based reward system, including "Employee of the Month" with either material or non-material rewards, and improvement of working conditions by establishing rest areas on construction sites, is planned. Rewards are provided for meeting project deadlines, adhering to safety standards, ensuring high-quality task execution, effective resource utilisation, and achieving set goals (such as completing projects on time or within budget).

However, some construction companies maintain reward systems to preserve worker motivation and ensure high-quality work execution. Currently, due to the ongoing war, many construction companies are facing financial difficulties, which affect their ability to implement additional motivational measures and improve working conditions. Investing in comfortable working conditions can contribute to increased employee productivity and loyalty to the company, which is a crucial factor during challenging times. Regarding the creation of rest areas on construction sites, their establishment contributes to boosting employee morale and productivity. These areas may include comfortable benches with backrests, sunshades, and spaces for eating and resting. Technological improvements, as part of the strategy, are aimed at reducing the time and resources spent on routine operations. The effectiveness indicator is a 15% reduction in operation costs within one year. As part of this strategy, the implementation of Building Information Modeling (BIM) technology and the use of robotic equipment, such as automated plastering systems, is planned.

Labour productivity monitoring and analysis aimed at regular assessments of work effectiveness and timely adjustments is another critical element. In the construction sector, key performance indicators include adherence to construction schedules, material and labour costs, labour productivity, quality of work, number of defects and rework, on-site safety, equipment and material utilisation rates, and compliance with environmental regulations and standards. The indicator for success is the achievement of established key performance indicators at 100% on a quarterly basis. Among the proposed actions is the implementation of weekly task performance reviews involving line managers (in construction, the equivalents of line managers may include foremen, site managers, or construction supervisors, who are responsible for managing workers, organising processes, and overseeing the execution of tasks on the construction site), the development of a feedback system through anonymous surveys (the mechanism for organising anonymous surveys within the company includes using online platforms with secure channels to collect responses and creating dedicated channels that guarantee confidentiality, where employees can provide feedback without fear of being identified), regular employee meetings, and the use of specialised programmes such as Trello or Asana to track progress. Specifically, regular team-wide meetings should be held, for example, once a month, where supervisors meet with subordinates to discuss current issues, while company leaders can organise meetings with top managers for strategic discussions and with construction workers for information exchange and motivation.

The objective of improving communication within the organisation is to enhance information exchange between employees and management, which will contribute to reducing

errors and improving work coordination. The success indicator is a 25% reduction in misunderstandings within internal processes and a 15% increase in employee satisfaction with communication over the course of the year. To achieve this goal, modern digital platforms for internal communication, such as Slack or Microsoft Teams, can be introduced to hold regular feedback meetings and organise training sessions to develop skills in effective communication and active listening.

The goal of the improvement of working conditions is to provide a comfortable environment for employees, which will help reduce absenteeism and accidents. The effectiveness indicator is a 10% reduction in absenteeism over the year. The strategy includes the establishment of mobile sanitation units and catering points on construction sites, such as field kitchens, permanent food stations, or catering services, to ensure compliance with sanitary and hygienic standards. This also includes the introduction of regular medical examinations for employees, with annual health check-ups covered by the company's insurance scheme. Employees are given a paid day off for the examination. Moreover, the plan includes enhancing workplace safety by making it mandatory for all employees to undergo mandatory safety training, take knowledge tests after completing the training, and install video surveillance on construction sites to monitor compliance with safety regulations. Updating personal protective equipment is also an important measure in this regard. Specifically, helmets, which have an average service life of 3–5 years, undergo an annual inspection and are replaced after impact or damage. Gloves and protective footwear are issued to employees every 3–6 months, depending on operating conditions. All these measures aim to create a safe and comfortable working environment, which will contribute to higher productivity and reduce the incidence of injuries and absenteeism.

Communication and corporate culture are crucial aspects of the strategy for ensuring effective performance and achieving high results in the design and implementation of construction projects. In the construction industry, clear and rapid communication between different levels, managers, engineers, workers, and material suppliers, is essential. This helps avoid errors and delays and reduce costs. Corporate culture, in turn, creates an atmosphere of trust and mutual support, which fosters high employee motivation and team development. The introduction of open communication channels and cultural values such as safety, honesty, and respect helps construction companies maintain efficiency and stability, even in the face of challenging projects and crisis situations. Thus, the implementation of the proposed strategy will help maintain a high level of employee productivity, support their motivation, reduce stress, and ensure effective adaptation to changes occurring in the context of war.

Discussion. The enhancement of employee productivity during martial law is an effective means of maintaining organisational stability. This aligns with the findings of O. Yaroshenko *et al.* [41], who noted that the adaptation of labour regulations during martial law, including the development of new approaches to personnel management, contributes to the preservation of labour productivity. These results confirm that the development of clear employee support policies minimises the negative impact of martial law.

The study showed that psychological support for employees and flexibility in work schedules are key factors in enhancing their productivity. These conclusions align with the work of G.J. Soputan [35], who emphasised that adapting working conditions during crisis situations, such as a pandemic, is also effective in maintaining productivity. This highlights the universality of approaches focused on flexibility and psychological support. Moreover, G.J. Soputan also indicated that teamwork is critical for providing integrated services in crisis conditions. Furthermore, this study demonstrated that the IT sector shows greater flexibility in adapting to martial law due to technological solutions and remote working.

This study indicates that organisational culture plays a crucial role in enhancing employee productivity during martial law. This concurs with the conclusions of T. Olakunle [24], who found that a positive organisational culture reduces stress among employees and increases their productivity. The researcher underscored the importance of transparent communication, corporate solidarity, and adapting company values to changing circumstances, which is particularly relevant in times of crisis.

This study also demonstrated that a conducive working environment, even under martial law, is of great importance. In particular, maintaining basic working conditions, such as access to necessary resources, forms the foundation for stable employee performance. This aligns with the findings of G. Zhenjing *et al.* [42], who showed that the working environment affects employee productivity through a multifactorial mediation model. They emphasised the importance of ensuring comfort and stability in working conditions. These results are also consistent with the findings of A. Rahman *et al.* [27], who highlighted the importance of creating comfortable working conditions to improve productivity. They also noted that even minimal improvements in working conditions can contribute to increased employee effectiveness, as evidenced in this study.

M.A. Shafi *et al.* [33] highlighted the critical impact of the physical working environment on employee productivity in manufacturing companies. This is in line with the results of the current study regarding the impact of working conditions, particularly rest zones and dining areas, on employee stress levels and productivity. Regular performance monitoring enabled managers to identify problem areas timely and implement measures to enhance work efficiency. This finding aligns with the study conducted by W. Windarko *et al.* [39], who examined key performance indicators such as average task completion time, error rates in work processes, and employee engagement levels. They highlighted that the implementation of standard operating procedures contributes to increased discipline, ensures process stability, and positively influences overall performance across various industries. Furthermore, the authors emphasised the importance of regularly reviewing these indicators to adapt to changes in the working environment.

A flexible approach to working time management had a positive impact on employee productivity. Specifically, this included recommendations for implementing remote work, which provides employees with greater autonomy. This conclusion is consistent with the study by L. Ma & R. Ye [20], who demonstrated that time allocation strategies for employees contributed to increased efficiency, particularly in cases where commuting time was significant. The reduction in commuting time enhanced motivation and reduced burnout, which, in turn, improved overall work performance.

The findings of this study also indicate that employee motivation, through both financial and non-financial incentives, plays a crucial role in enhancing productivity. O.O. Olasanmi *et al.* [25] noted in their analysis that effective management of motivational factors, such as bonuses, career progression, and recognition, can substantially improve productivity in manufacturing companies. The results of O.O. Olasanmi *et al.* [25] are consistent with this study, demonstrating that even in exceptional circumstances, employees value incentives that acknowledge their contributions. This aligns with the conclusions of A.M. Damnjanovic *et al.* [6], who argued that insufficient employee motivation can lead to reduced productivity and even increase the risk of business failure. This study identified effective motivational approaches, such as bonuses, recognition of achievements, and career development opportunities. Another key aspect identified in this study is the importance of employee training and development in maintaining productivity during martial law. The results indicate that providing opportunities for professional development helps employees adapt to new conditions and sustain high performance levels. This finding aligns with the work of Q.A. Almaamari & H.I. Alaswad [2], who asserted that investment in employee training is a key factor in enhancing productivity and organisational efficiency.

This study also demonstrated that improving employees' digital literacy is critically important in the context of martial law. This conclusion is supported by Y. Sytnyk & H. Zakharchyn [37], who emphasised the importance of integrating modern technologies into HR management during wartime. The use of digital tools for work organisation allows for process optimisation and minimises productivity losses. Notably, the findings of this study highlight the importance of an individualised approach to employee management, considering their needs and personal circumstances during martial law. A similar conclusion was drawn by M.S. Islam [15], who stressed the importance of considering individual factors that influence productivity in public sector institutions. Furthermore, this study confirmed that teamwork and communication play a crucial role in maintaining employee productivity. Effective communication between employees and management contributes to stress reduction and improved coordination. This is supported by R. Esther Martina & B.N. Kumar [10], who noted that the effective use of technology and adaptability among IT sector employees contribute to maintaining stable productivity levels even in unstable conditions.

In the context of martial law, strategic human resource management assumes particular importance. T. Stroiko *et al.* [36] emphasised the importance of adapting HR strategies to wartime conditions, including flexible work scheduling, psychological support for employees, and the creation of a personnel reserve. This study similarly highlights these aspects, confirming that an effective HR strategy can help maintain productivity even under the most challenging circumstances.

S. Singh *et al.* [34] in their bibliometric analysis, noted that contemporary research on employee productivity focuses on the integration of technological innovations and social aspects. The findings of this study align with S. Singh *et al.* [34] assertion that the use of digital tools, such as online collaboration platforms, is a crucial component in sustaining productivity. Moreover, G. Zhenjing *et al.* [42] argued that a multifactorial approach to performance management is the most effective but requires substantial effort for its implementation. The results obtained by G. Zhenjing *et al.* [42] are consistent with the complex and multi-layered strategy for improving labour productivity developed in this study.

Overall, the results of this study corroborate the findings of the authors discussed while also contributing to a deeper understanding of how employee productivity can be maintained under martial law. The importance of organisational culture, incentives, adaptation of the work environment, and strategic human resource management is supported by this study and previous research, highlighting the universal relevance of these factors across various contexts.

Conclusions. This study confirmed the impact of war on employees' psychological well-being and motivation. The decline in the number of highly motivated employees and the increase in the proportion of those with moderate motivation levels indicate reduced engagement with work, primarily due to stress factors and uncertainty about the future, which negatively affected overall productivity. Most respondents maintained a moderate level of intrinsic motivation. The application of stress resilience and motivation assessment methodologies allowed identifying levels of emotional burnout, determining the risks of declining engagement, and proposing strategies for their mitigation. The study established that ensuring regular feedback, fostering a corporate culture of support, and implementing digital solutions to optimise work processes greatly enhance employee performance.

Monitoring productivity changes by comparing work volumes before and during wartime allowed for an assessment of the team's adaptation to new conditions, considering emotional and physical challenges. It was uncovered that the level of stress induced by changes in working conditions during the war had a considerable impact on productivity and employees' ability to adapt. Respondents reported a decline in intrinsic motivation and shifts in work-related goals during

the war, which emerged as key factors influencing their effectiveness. The most common adaptation measures during wartime included the introduction of remote work and the optimisation of work processes within companies. Among employees of Blago LLC, 48% reported experiencing stress occasionally. Regarding adaptability, 50% of Blago LLC employees rated their ability to adjust as satisfactory, indicating the need for improvement in this aspect within the company.

In RIEL Corporation, 50% of respondents reported a substantial decline in work efficiency, suggesting difficulties in adapting to new conditions. Changes in motivation levels during the war were particularly noticeable in Blago LLC and RIEL Corporation, where 50% and 55% of respondents, respectively, reported decreased motivation. It was discovered that effective personnel management under martial law requires a comprehensive approach that considers psychological and organisational factors. The SWOT analysis demonstrated that all examined corporate strategies possess their respective strengths, weaknesses, opportunities, and threats in the context of adaptation to martial law. Blago LLC successfully optimised internal processes through the implementation of new project management technologies; however, it faces challenges in maintaining employee motivation. RIEL Corporation demonstrated effective adaptation by automating logistical processes, yet the high level of stress among employees and a considerable decline in productivity indicate the need for additional support measures. Molodist LLC stands out for its stable productivity and employee motivation, though it requires improvements in adapting to changes in internal processes. A key limitation of this study was the relatively small sample of employees and companies. Future research could focus on the outcomes of personnel management strategy adaptation within specific industries under martial law.

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