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у стратегії безпеки торгово-розважальних центрів України в умовах збройної агресії..... 9

Н. Осташко

Заробітна плата під час простою: юридичні та бухгалтерські аспекти 21

М. Пиресев

Фінансова інтеграція бізнесу та об'єднаних територіальних громад:
механізми залучення альтернативного фінансування
та оцінка вартості на прикладі діяльності підприємств 31

Н. Трусова, А. Трусова

Вплив євроінтеграційних процесів на розвиток туристичного потенціалу України..... 45

О. Власков

Особливості інноваційного розвитку підприємств харчової галузі
в кризових умовах в Україні..... 61

В. Бугайчук, С. Ситняківська, Т. Гайдучо, С. Кубра, І. Грабчук

Стратегічні орієнтири розвитку бізнесу
в умовах повоєнної відбудови економіки в Україні..... 74

В. Кузьома

Порівняльний аналіз прозорості фінансової звітності «Нафтогаз України»
та OMV Group (Австрія): емпіричний підхід 96

CONTENTS

A. Brynzylo

Integration of crisis management into the security strategy
of shopping and entertainment centres in Ukraine in conditions of armed aggression9

N. Ostashko

Salary during downtime: Legal and accounting aspects 21

M. Pyriesiev

Financial integration of businesses and amalgamated territorial communities:
Mechanisms for attracting alternative financing
and cost assessment based on the example of enterprise activities 31

N. Trusova, A. Trusova

Impact of European integration processes
on the development of tourism potential in Ukraine 45

O. Vlaskov

Features of innovative development
of food industry enterprises in crisis conditions in Ukraine 61

V. Buhaichuk, S. Sytniakivska, T. Haiduchok, S. Kubrak, I. Grabchuk

Strategic guidelines for business development
in the context of post-war economic reconstruction in Ukraine 74

V. Kuzoma

Comparative analysis of financial reporting transparency of Naftogaz of Ukraine
and OMV Group (Austria): Empirical approach 84

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Integration of crisis management into the security strategy of shopping and entertainment centres in Ukraine in conditions of armed aggression

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Abstract. The study aimed to determine the effectiveness of comprehensive risk management measures and the resilience of shopping and entertainment centres in Ukraine during armed aggression. The methodology included a documentary analysis of emergency response plans and evacuation protocols, a study of the media, and a case analysis of specific shopping and entertainment centres, which made it possible to assess the practices of arranging shelters, warning systems, fire safety, and staff rotation in different regions of the country. The study determined that risk management measures in shopping and entertainment centres in Ukraine include a combination of shelters, warning systems, crisis plans, data backup, communication and psychological support, which ensure the preservation of personnel, property and operations during wartime. Systematic implementation of the instructions (including training, staff rotation and interaction with government services) increased the effectiveness of the response and minimised losses. The results of the case study determined that Forum Lviv has created a shelter with an autonomous power supply that ensures operation during power outages. Riviera Shopping City has created a shelter system for more than 200 people. In particular, the Karavan shopping centre in Kharkiv was subject to numerous regular shelling attacks, which caused the shelter to be stocked with water and medical supplies. Passage in Dnipro also faced potential threats of mining and missile strikes, which had required improvements to the warning and video surveillance systems, as well as the equipment of shelters and regular staff training. It was recommended to disseminate organisational practices (designation of responsible persons, staff rotation and digital warning systems) as a standard for managing the security of shopping and entertainment centres. The practical significance lies in the fact that the results of the study can be used to improve crisis management strategies and enhance the security of shopping and entertainment centres in Ukraine in the context of armed aggression

Keywords: risk management; rapid response; evacuation procedures; threat monitoring; security technologies

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Introduction

The integration of crisis management into the security strategies of shopping and entertainment centres (SECs) in Ukraine is relevant in the context of armed aggression, when the increased likelihood of emergencies, including terrorist threats, shelling and evacuation challenges, threatens the lives of visitors, staff and the economic stability of facilities. Shopping and entertainment centres, as locations of mass gatherings and strategic economic platforms, require a systematic approach to security planning, which involves the development and implementation of effective procedures for responding to crisis events, the adaptation of technological solutions for monitoring, access control and communication channels with state and private response services.

Research devoted to risk management and operational response in conditions of military conflict has revealed complex interactions between state strategies, technological systems, and socio-economic security mechanisms. The topic was addressed by many researchers, who have interpreted its aspects in different ways. For example, A. Bahinskyi & O. Zaiets (2023) studied the strategies of the parties in the war between Russia and Ukraine and noted that effective risk management was based on a combination of military, economic and information measures. The study found that the use of information systems and social and economic security mechanisms was a key factor in the stability of the conflict. M. Chovančík & O. Krpec (2023) analysed the processes of the collapse of the European defence industry in Central and Eastern Europe during the war in Ukraine, finding that the lack of integrated risk management systems led to delays in the production of critically needed equipment and logistical resources. The researchers emphasised that strategic monitoring of threats and timely response to signals of supply chain disruptions mitigated the negative impact on the defence capabilities of the region.

In the field of security at the European Union level, S. Cincă (2024) analysed security policy priorities for the period 2019-2023 and identified preventive threat monitoring, strengthening crisis centre coordination mechanisms, and using technological solutions to control and respond to emergencies as key measures. The study noted that the integration of digital platforms has significantly improved the efficiency of operational procedures and ensured the timely evacuation of the population in crisis regions. R. Hellberg & M. Lundmark (2025), in the study of the transformation of European defence supply chains, demonstrated that the use of adaptive technologies and digital monitoring systems reduced the risk of delays in providing military and civilian structures with the necessary resources. The study noted that the technologies predicted critical disruptions, optimised supply routes, and adjusted operational plans promptly in response to changes in the threat environment.

A case study of IT-Integrator in Ukraine was conducted by O. Kukuruza *et al.* (2024) and demonstrated that the integration of digital tools into the risk and crisis management system can be used to respond quickly to changes in

economic and security conditions. The study noted that predictive analytics, alert and evacuation planning systems increased the resilience of the enterprise to external threats, while minimising financial and human losses. Economic security measures during the elimination of the consequences of armed aggression were studied by L. Sorokina *et al.* (2023). The study noted that comprehensive risk management included planning evacuation procedures, controlling resources, monitoring potential threats, and implementing modern security technologies. The analysis revealed that the rapid response was based on close coordination between government agencies, businesses, and civil society organisations, which made it possible to quickly mobilise the necessary resources and protect critical infrastructure. L.S. Peláez (2023) examined the internal security challenges of the European Union after the Russian invasion of Ukraine, highlighting integrated threat monitoring and crisis scenario forecasting systems. The study noted that the development of unified emergency response protocols included clear algorithms for evacuation procedures, the distribution of responsibilities among member states, and the introduction of innovative security technologies, which increased the speed and accuracy of decision-making in critical situations.

M. Rabinovych (2025) analysed the differentiated integration of the European Union (EU) to respond to crises, particularly in the case of Ukraine. The study demonstrated that adaptive coordination mechanisms between states contributed to effective risk management and the organisation of operational measures, including evacuation procedures and control of potential threats. The study emphasised that the use of modern digital technologies significantly improved the accuracy of forecasts and the speed of decision-making at various levels of management. Certain aspects of responding to external threats and crises in EU countries were examined by V. Tumalavičius & A. Kriviņš (2024), noting that systematic monitoring of threats and integrated action planning reduced the negative consequences of emergencies. The study determined that operational procedures included not only military and police measures, but also evacuation planning, critical infrastructure security, and the implementation of early warning technologies, which increased the level of citizen safety. D. Varakin *et al.* (2024) studied adaptive strategies for managing decision-making in business during armed conflict. The study noted that the integration of risk management, predictive analytics, and security technologies ensure quick response to threats, optimise staff evacuation processes, and continuous operation of business in crises. The results demonstrated that a combination of alert technologies, resource management systems, and external threat monitoring increased the resilience of business processes.

Despite the aspects highlighted by previous studies, gaps were identified in the application of integrated crisis management specifically for shopping and entertainment

centres in Ukraine during armed aggression. The study aimed to assess the effectiveness of comprehensive risk management measures and the level of resilience of shopping and entertainment centres in Ukraine during armed aggression, particularly in different regions of the country. The objectives of the study were to analyse the state and challenges of shopping and entertainment centres in Ukraine during armed aggression; to identify comprehensive risk management measures in shopping and entertainment centres in Ukraine in conditions of armed aggression; and to formulate regional recommendations for adapting shopping and entertainment centres to military risks.

Materials and Methods

The study was conducted in three stages using a set of empirical methods. The first stage was a documentary analysis, which verified the information reported in the media and identified the level of formalisation of risk management. Official emergency response plans, evacuation drill protocols, briefing logs, fire system and shelter inspection reports, as well as local government orders on the construction of protective structures and cooperation with the State Emergency Service of Ukraine (SES) were studied. These included Resolution of the Cabinet of Ministers of Ukraine No. 223 "On Approval of the State-Level Emergency Response Plan" (2018), "Organisation and implementation of evacuation measures in the absence of documents" (State Emergency Service of Ukraine, 2024), and Sample of the Fire Extinguisher Registration Journal (n.d.). The study also addressed the Order of the Ministry of Defence of Ukraine No. 685 "On Approval of the Regulations on Fire Safety in the System of the Ministry of Defence of Ukraine" (2014) and Order of the Ministry of Internal Affairs of Ukraine No. 879 "On Approval of the Form of the Inspection Report of the Object of the Fund of Protective Structures of Civil Defence" (2024). The analysis of documents revealed regional differences, assessed the compliance of the measures implemented with national standards and international recommendations, and identified practices that ensure effective adaptation to military risks. In addition, a set of measures for managing risks in shopping and entertainment centres in conditions of armed aggression was described, including the construction of shelters with autonomous resources, the configuration of multi-level warning systems, the introduction of staff training and rotation practices, and the construction of fire stations to ensure the safety of visitors and employees.

The second stage involved conducting a case study with comparative elements, which made it possible to assess how different regions of Ukraine are adapting to new threats and what practices are highlighted in the public information space. The comparison was conducted between the largest and most visited shopping centres in different regions of Ukraine: Forum Lviv (Lviv), Riviera (Odesa), Passage (Dnipro) and Karavan (Kharkiv). This comparison reflected risk management practices in the western, southern and eastern regions of the country. The analysis covered

the dynamics of the state of danger in conditions of armed aggression and was based on national news resources. For Forum Lviv, materials on actions in emergencies and the presentation of fire protection systems were considered (We invite you..., 2018; Actions during emergency..., 2022). In the case of Riviera, the consequences of a missile strike on the shopping centre and the restoration of the second section after the shelling were studied (Zubar, 2022; Riviera Shopping City..., 2023). For Passage in Dnipro, reports of mining and the results of the facility inspection were analysed (Kuzemko, 2025). For Karavan in Kharkiv, data on the evacuation of people due to a false report of a bomb threat and the impact of martial law on the shopping centre's economy were considered (Tsvetkova, 2021; "Black Friday" and..., 2024).

The third stage examined the Business Continuity Plan as an option for ensuring business continuity in crises. In addition, the study identified regional practices for adapting to military risks, assessed the effectiveness of security measures, determined the dynamics of implementing innovative warning and shelter systems, and formulated recommendations for optimising personnel management and engineering security systems.

Results

Comprehensive risk management measures in shopping and entertainment centres in Ukraine in the context of armed aggression. In shopping and entertainment centres in Ukraine, risk management in conditions of armed aggression is conducted based on a comprehensive approach, which includes the construction of shelters, the organisation of multi-level warning systems, the provision of fire safety, and staff training. State standards, in particular Resolution of the Cabinet of Ministers of Ukraine No. 223 (2018), define clear algorithms for action in emergencies, including rocket attacks, fires and terrorist threats. They provide for the zoning of premises for evacuation, minimum distances between shelters and places of mass gathering, and the appointment of persons responsible for coordinating measures. In particular, in regions at higher risk (Kharkiv, Kyiv, Odesa), shelters are equipped with autonomous power sources with a capacity of at least 5 kW, a 72-hour supply of drinking water, and ventilation systems capable of supplying air for 200-500 people at a time. All evacuation routes must be marked with lighting that facilitates movement even in a smoke-filled environment. The evacuation process is also organised using digital and administrative mechanisms. The use of standard staff lists, QR access cards and mobile applications for notification quickly identifies people and directs them to safe areas (State Emergency Service of Ukraine, 2024). In addition, multi-level alarm systems are being introduced to automatically notify staff and visitors of a threat, including sirens, push notifications and voice announcements.

To ensure fire safety, shopping centres are equipped with fire stations, automatic extinguishing systems and fire extinguishers, in accordance with the requirements of

Sample of the Fire Extinguisher Registration Journal (n.d.). The minimum area of the fire station is 50-70 m² for facilities with more than 1,000 visitors, and there must be at least two emergency exits per shelter. Regular checks of the technical condition of equipment, monthly and quarterly inspections of fire extinguishers and automatic extinguishing systems ensure continuous monitoring of the serviceability of engineering systems. Personnel management includes ongoing training, briefings and shift rotation to maintain emergency preparedness. Staff training covers evacuation procedures, first aid and actions in case of fire, rocket attack or other threats. In addition, shopping centre administrations conduct regular evacuation drills, which improve coordination between staff and civil protection services, thereby increasing the effectiveness of safety measures (Resolution of the Cabinet..., 2018; State Emergency Service of Ukraine, 2024).

The arrangement of shelters following the Order of the Ministry of Defence of Ukraine No. 685 (2014) and the Order of the Ministry of Internal Affairs of Ukraine No. 879 (2024), which stipulates that each shelter must

be equipped with an autonomous power supply, ventilation, a 72-hour supply of water and food, lighting and two emergency exits, was highlighted. Shelter inspections are conducted quarterly using standardised forms, which are used for monitoring the technical condition of structures, the availability of supplies, and the serviceability of engineering systems. Any deficiencies identified are remedied within 30 days, ensuring that the facility is always ready to respond to emergencies. A multi-level warning system, combined with autonomous shelters and fire stations, provides comprehensive protection against the risks arising during military operations. The use of digital warning systems and personnel cards reduces evacuation time, lowers the probability of injuries and ensures efficient coordination between different services. In the eastern regions, shopping centres use more advanced technical solutions for shelters, while in the western regions, staff training and integrated warning systems are prioritised. Table 1 shows the main categories of measures and specific instructions for businesses in wartime, aimed at reducing risks to staff, infrastructure and operations.

Table 1. Key instructions for businesses during wartime to reduce risks

Category of events	Specific instructions	Description/purpose
Physical staff protection	Arrangement of shelters with water and food supplies, and an autonomous power supply	Ensures the safety of employees and visitors during shelling or bombing
	Marking and maintaining evacuation routes	Facilitates rapid and organised evacuation in emergencies
	Regular training and education of personnel	Increases employee readiness to act in crises
Organisational measures	Development of a crisis response plan and HSC (Higher Specialised Council)	Provides a sequence of actions to minimise losses and maintain operational activities
	Identification of responsible persons for each critical process	Ensures coordination and rapid decision-making during emergencies
	Rotation of shifts and staff rotation	Reduces health and safety risks for employees, maintains business continuity.
Technical and engineering measures	Installation of warning systems and alarm sensors	Rapid notification of personnel about danger
	Inspection and maintenance of fire protection systems, fire extinguishers, and automatic extinguishing systems	Reducing the risk of fire spread and ensuring the safety of facilities
	Critical data backup	Protection against information loss and ensuring the possibility of resuming operations
Communication and coordination	Organisation of rapid information channels (SMS, email, instant messengers)	Ensures timely notification of employees and customers
	Establishment of contacts with government agencies, police, and the State Emergency Service	Improves the effectiveness of interaction and response to threats
Psychological and social support	Provision of psychological support to staff	Reduces stress, improves responsiveness
	Support for vulnerable groups, including internally displaced persons and persons with disabilities	Respect for human rights and ethical standards in crises

Source: compiled by the author

Thus, the set of risk management measures in shopping centres in Ukraine includes the installation of shelters with autonomous resources, the configuration of multi-level warning systems, regular training and rotation of personnel, and the installation of fire stations. These measures ensure compliance with national standards and international recommendations, increase the level of safety for visitors and employees, and guarantee effective adaptation to conditions of armed aggression.

The state and challenges of shopping and entertainment centres in Ukraine during armed aggression. Business in Ukraine during the Russian full-scale armed aggression faced difficult conditions, which affected all segments of the economy, including shopping and entertainment centres. Shopping centres, which before the war served not only a commercial but also a social function, were forced to adapt to the constant threat of shelling, mining, evacuations, energy crises and a decline in the purchasing power

of the population. Crisis management integration includes a set of measures aimed at ensuring the safety and sustainability of organisations in emergency conditions. It covers the development of response strategies for various types of threats, including military, man-made and natural disasters, as well as the identification of critical processes and resources to ensure business continuity. Integration includes the construction of physical protective structures, such as shelters and fire stations, the configuration of multi-level warning systems, and the organisation of evacuation and staff rotation plans. In addition, integration includes employee training, training simulations and the formation of rapid response teams.

Coordination with government agencies, emergency services and local authorities, as well as the use of technological solutions for monitoring threats and managing information, are essential components. The integration of crisis management provides a comprehensive approach to minimising risks, protecting human life and health, and maintaining the stability of organisations. Personnel management involves identifying individuals responsible for critical processes, organising the rotation of key employees, and conducting regular training and crisis scenario simulations, which provide practice for staff to respond under pressure and reduce response times. In addition, specialised crisis management teams are created to monitor the implementation of security procedures, analyse incidents and update the action plan in response to new risks. This approach integrates physical, technical, and organisational measures into a single shopping centre security management system, minimises financial and reputational losses, maintains the stability of business processes, and ensures the safety of staff and visitors even in the difficult conditions of war.

The first object of analysis, Forum Lviv, demonstrates an example of the adaptation of the retail business in the relatively safe western region. Despite the absence of large-scale destruction, the threat of missile strikes remained constant. Back in 2018, the administration implemented an extensive firefighting and security system, which in 2022-2025 was supplemented with shelters for visitors and staff, evacuation training and a rapid response system during air raid alerts (*We invite you...*, 2018; *Actions during emergency...*, 2022). During one of the drills in June 2024, more than 500 people were evacuated from the shopping centre within five minutes, demonstrating the effectiveness of the training. According to RAU, Forum Lviv also implemented an autonomous power supply system, which ensured uninterrupted operation during power outages in the autumn of 2023 (Dudka, 2025). Thus, businesses in Lviv have adapted to the war by proactively implementing security technologies and crisis procedures, minimising risks for customers and employees.

The opposite situation is illustrated by Riviera Shopping City near Odesa, which was directly hit by a missile strike in July 2022. As a result of the attack, the complex suffered significant damage, with over 4,000 square metres

of retail space destroyed and surrounding residential buildings damaged (Zubar, 2022). After that, the shopping centre's administration implemented a large-scale programme of restoration and reinforcement of protection. In 2023, the reconstruction was completed, and in 2024, a decision was made to build shelters for the shopping centre's staff (*Riviera Shopping City...*, 2023). Despite significant losses, Riviera Shopping City continued to operate, setting an example of business resilience in the southern region amid constant shelling and economic instability.

Passage in Dnipro also faces constant threats. In June 2025, several popular shopping centres in the city, including Passage, were mined by unknown persons, resulting in a large-scale evacuation and hours of building inspections (Kuzemko, 2025). Although no explosive devices were found, the incident caused significant losses due to work stoppages, loss of revenue, and panic among visitors. Such incidents complicate business operations, forcing companies to invest heavily in additional security, video surveillance systems, and staff training in crises. Dnipro, as the country's industrial and logistics centre, is under constant threat of missile strikes, which further exacerbates uncertainty for the retail sector. Shopping centres are actively implementing comprehensive risk management measures in the context of armed aggression to increase the safety of visitors and staff and minimise financial losses. The Passage building in Dnipro is equipped with several underground shelters designed for the complete evacuation of visitors and employees in case of danger, and the warning system automatically notifies of an emergency via loudspeakers and mobile applications. Staff regularly undergo training on how to respond to emergencies, including evacuation, first aid and preventing panic among visitors. In addition, the shopping centre has integrated a video surveillance system, access control and firefighting depots, ensuring quick response to any threats.

The situation at Karavan in Kharkiv is challenging, as the shopping centre is under constant shelling. In 2021, there was a false bomb threat, which caused 350 people to be evacuated from the shopping centre (Tsvetkova, 2021). Since the start of the full-scale war, such incidents have become more frequent, creating additional psychological pressure on customers and staff, as well as causing financial losses. Kharkiv, being a frontline city, lives under constant artillery shelling, which forces businesses not only to respond to immediate danger but also to counter disinformation campaigns aimed at destabilising the situation. As part of the security strategy, a shelter with access to water and medical supplies was constructed, and the warning system was synchronised with local civil protection services. Employees undergo regular training on how to act during artillery shelling, evacuation and working under psychological pressure, and there are fire stations and medical points on the centre's premises to ensure a rapid response to emergencies. The facility practises staff rotation during dangerous periods, evacuation scenario planning, regular training and cooperation with local rescue services to

improve preparedness for crisis events. Thus, shopping and entertainment centres implement a comprehensive system of measures to protect people, infrastructure and business

processes during military threats. Table 2 reflects the potential threats to shopping and entertainment centres and the security strategies implemented.

Table 2. Comparative characteristics of threats and security strategies in shopping and entertainment centres in Ukraine

shopping centre	City	Threats	Implemented safety strategies
Passage	Dnipro	Mining, missile strikes	Underground shelters, a warning system, staff training, video surveillance, and fire stations
Karavan	Kharkiv	Constant shelling	Shelter with water and medical supplies, a synchronised warning system, staff training, and medical stations
Forum Lviv	Lviv	Possible missile strikes	Visitor shelters, a warning system, staff training, and the implementation of an autonomous power supply system, which ensured uninterrupted operation during power outages
Riviera	Odesa	Mining, missile strikes	Warning system, staff training, video surveillance, fire stations, shelters with water supplies, heating and ventilation

Source: compiled by the author based on L. Panchenko (2022), D. Andritsou *et al.* (2025), Shopping mall losses during the war: dozens of damaged facilities and 90 days of downtime (2025)

Table 2 demonstrates the territorial differentiation of the war's impact on the infrastructure of shopping and entertainment centres in Ukraine. All four shopping centres demonstrated effective risk management in the context of armed aggression. Passage and Riviera protected shelters and warning systems, as well as staff training. Karavan additionally integrated medical stations and water supplies for long-term stays in shelters due to constant shelling. Forum Lviv, being relatively safe, integrated minimum safety strategies by creating shelters. The strategies implemented made it possible to avoid serious damage and minimise financial losses, while increasing staff preparedness and visitor safety.

The generalised results suggest that regional retail structures have varying levels of vulnerability. Overall, the situation is challenging. Despite the general decline in purchasing power, shopping centres have become a place of social integration during power outages, providing people with basic needs such as heat, light and access to the internet ("Black Friday" and..., 2024). This ensured that visitor numbers remained at 70-80% of pre-war levels in large cities in western and central Ukraine. Thus, the conditions in which businesses operate, particularly shopping and entertainment centres, are characterised by multidimensional challenges: from immediate physical danger in the southern and eastern regions to information threats and energy crises in the centre and west of the country. An analysis of the above cases shows that successful operation is only possible with flexible adaptation, investment in security and maintaining customer confidence. At the same time, the experience of shopping centres such as Riviera, Forum Lviv, Passage and Karavan demonstrates varying degrees of preparedness for crises and highlights the need for a systematic approach to risk management in the retail sector in wartime.

Regional recommendations for adapting shopping and entertainment centres to military risks. Analysis of various regional cases determined that the effectiveness of security measures largely depended on the integration of technological solutions, coordination between shopping centre management and local authorities, and systematic

planning of evacuation and emergency procedures. In particular, the use of automated threat monitoring systems, such as video surveillance with analytics, motion sensors, and access control, ensured a rapid response to potentially dangerous situations, reducing the risk of injuries from panic or structural collapse. The results showed that shopping centres that implemented multi-level alert systems with automatic voice messages, SMS and push notifications for staff and visitors demonstrated greater effectiveness in responding quickly to threats. At the same time, adaptation of engineering shelter systems proved necessary: in regions with active hostilities, projects were implemented to equip specialised protective zones with autonomous power sources, ventilation systems and backup communication channels. Such solutions ensured the safety of visitors and staff for long periods of time during emergencies.

The study confirmed that training and regular drills for shopping centre employees on evacuation procedures, behaviour during shelling, and first aid increase the speed and effectiveness of actions in crises. It is recommended to implement staff rotation systems to reduce psychological stress and avoid burnout, as well as to create clear protocols of responsibility for different areas of the facility. A comprehensive approach to forming rapid response teams, including security specialists, engineers and administrators, facilitated rapid decision-making and minimised damage. The effectiveness of such decisions was increased when combined with traditional control methods, such as physical security and patrolling of critical areas. Regional characteristics revealed the need for a differentiated approach to security planning. In the southern and eastern regions, where the risk of shelling was high, shelter and evacuation routes were prioritised, while in the western regions, threat warning systems and psychological training of personnel were prioritised. This confirmed the importance of adapting security standards to specific geographical and social conditions, which improves efficiency of measures with limited resources. Coordination between shopping centre management and local authorities, emergency services and law enforcement agencies significantly increased the

effectiveness of security measures. It is recommended to implement joint planning systems, real-time information exchange and regular joint training. This ensures unified action in crises and reduces the risk of material losses and injuries among staff and visitors.

Autonomous power supply, water supply, emergency lighting, and backup communication channels ensure operation of shopping centres in a limited autonomous mode during emergencies. It is necessary to develop scenarios for operating in various risk conditions, providing for a phased response depending on the level of threat and the time required for evacuation. Comprehensive integration of measures aimed at ensuring the safety of staff and visitors has proven highly effective in minimising risks during military operations. These measures include systematic training, the development and implementation of emergency response procedures, the use of technological innovations, the provision of backup resources and coordination with government agencies. All these elements form a robust security management model that is adapted to specific regional conditions and risk levels. It is recommended that comprehensive communication procedures be developed as part of the Business Continuity Plan (BCP) to promptly inform employees, partners and customers about emerging threats and response measures, using multi-level channels such as mobile applications, SMS, email, public address systems and corporate web portals. It is necessary to identify the persons responsible for each critical process who coordinate actions during crises and ensure compliance with security procedures. The plan should include measures to restore operations after crisis incidents, including data backup, relocation of critical equipment to alternative locations, rental of temporary offices or warehouses, and restoration of supply chains. Regular training and crisis simulations provide practice under pressure and reduce response times, while the creation of specialised crisis management teams in large companies ensures control over the implementation of the plan, analysis of incidents, and updating of procedures in line with new risks. Thus, the implementation of BCP is an effective tool for improving business resilience, reducing the probability of financial and reputational losses, ensuring staff safety, and maintaining the stability of business processes in any crisis conditions.

In conclusion, the study confirmed that a comprehensive approach combining technological innovations, staff training, engineering security systems and coordination with government agencies can significantly increase the resilience of shopping and entertainment centres to military risks. The recommendations developed can be used by shopping and entertainment centre administrations and management bodies to further optimise security measures and ensure the protection of the life and health of staff and visitors.

Discussion

The effective implementation of crisis procedures depended on a combination of preliminary risk assessment, the development of rapid response protocols, and the use

of modern security technologies, which demonstrated a direct correlation between the level of preparedness of commercial infrastructure facilities for emergencies and the systematic approach to threat monitoring and regular staff training. The data obtained corresponded to the conclusions of A.M. Friede (2022), emphasising that regional security strategies in response to external shocks, in particular conflict situations in Ukraine, largely depend on the ability of organisations to quickly adapt and coordinate actions between public and private structures. Similarly, D. Fiott (2023) noted that crises in the military and political spheres stimulated the integration of defence and civil protection systems at the European Union level, which coincides with the identified trends of increased interaction between security agencies and shopping and entertainment centre administrations. The reliability of warning systems and evacuation procedures contributed to a reduction in response time during simulated emergencies. This result coincided with the study by G. Albertari & E. Principe (2023) on the effectiveness of the organisation of temporary crisis structures in Europe using the example of refugees from Ukraine. In both cases, the key factor for success was the awareness of staff of the role of procedures and a precise definition of responsibilities, which confirmed the importance of the socio-psychological aspects of crisis management. Similar conclusions were drawn by C. Cotroneo & S. Leonard (2025) in a study on the role of large technology companies in providing military protection and civil security during the Russian-Ukrainian conflict. Both studies emphasised the potential of digital solutions in improving the effectiveness of operational response. These observations echoed the findings of a study by L. Dominelli (2025) on ethical behaviour during the provision of assistance in the context of the armed conflict in Ukraine. The study demonstrated that systematic training and rehearsal of procedures created a sense of confidence among staff, which reduced the risk of errors in real-life situations.

The integration of crisis management involved both horizontal and vertical coordination links, which were consistent with the findings of M.G.A. Viceré (2021), analysing external crisis management through the mechanisms of the EU and the Organisation for Security and Cooperation in Europe (OSCE) during the Ukrainian conflict. Similar to commercial infrastructure facilities, international structures applied a comprehensive approach that involved interaction between different levels of management and resource optimisation. The study determined that the reliability of physical security in shopping and entertainment centres directly depended on the use of advanced surveillance and access control technologies. This conclusion was supported by P. Genschel (2022), noting that in the field of European security, the combination of technological solutions and strategic planning provided more robust protection for critical infrastructure facilities. In both cases, the key factor remained the ability to adapt to unpredictable conditions. The study determined that a combination of monitoring protocols, early warning systems and staff

training reduced the risk of emergencies and accelerated the recovery of operations after crisis events. These findings correlated with the results of V. Anghel & E. Jones (2023), noting that European structures that quickly implemented crisis mechanisms demonstrated greater resilience in response to the pandemic and military threats. Optimising evacuation procedures and preparing staff for complex emergency scenarios reduced response time lags.

The analysis of the results in the context of the economic impact of the conflict was consistent with the conclusions of a study by P. Halmaj (2024) and D. Andrienko *et al.* (2025) on the economic consequences of Russian aggression and noted significant pressure on commercial structures, including shopping and entertainment centres. The study determined that facilities that conducted systematic risk planning demonstrated greater economic stability, confirming the importance of comprehensive approaches. The study demonstrated the effectiveness of polycentric models of response to emergencies. O. Keudel & O. Huss (2025) studied local communities facing internal displacement and emphasised the role of coordination between different structures in ensuring resilience. Shopping and entertainment centres that integrated a polycentric approach were more effective in organising evacuations and interacting with emergency services, which correlated with international practices. The study determined that technological security measures significantly increased the effectiveness of threat monitoring. A. Kwiatkowski (2023) studied the security of Eastern flank states and emphasised the importance of integrating modern technologies into security strategies. The use of video surveillance systems, sensors, and risk assessment algorithms identified threats in a timely manner and reduced negative consequences. Strategic planning of crisis measures in commercial structures coincided with the conclusions of D. Lewis (2022), noting that effective conflict management requires adaptive strategies that combine military, economic and information components. The study determined that shopping and entertainment centres that developed emergency scenarios and trained staff ensured a higher level of preparedness and safety for visitors. M. Mańka-Szulik *et al.* (2023) studied anti-crisis measures in Poland and noted the effectiveness of training and practical exercises in improving the preparedness of organisations. Case studies showed that similar approaches in Ukrainian shopping and entertainment centres increased the effectiveness of responses to emergencies and reduced the probability of panic among visitors.

A study of coordination between government agencies and commercial entities confirmed that systematic interaction reduced risks and increased responsiveness, which was consistent with the findings of a study by V. Pastor (2021) in a study of environmental and infrastructure security issues in Eastern Europe, noting that a comprehensive approach, including planning and adaptive management, increased the overall resilience of systems. The integration of such practices in shopping centres made it possible to ensure stable operations even in the direct military threat.

The economic aspects of crisis management proved to be key, which was consistent with the findings of A. Shuhali (2023) demonstrated that supply stability and financial support had a critical impact on the resilience of Ukrainian industrial enterprises. In the case of shopping and entertainment centres, this confirmed the need for economic support for security measures to implement preventive and crisis strategies. The study determined that communication management during crises significantly reduced the level of disorientation among staff and visitors, which was consistent with the findings of C. Zhang & T. Zhou (2023), emphasising the importance of transparent channels for stabilising the social situation during the Ukrainian crisis. In shopping and entertainment centres, timely information and effective communication channels contributed to faster evacuation and organisation of assistance. In particular, the ability of management to adapt proved to be a component of effective strategies, which was consistent with the findings of M.R. Uygur & B. Peyravi (2025), emphasising the role of adaptive management in maintaining business resilience in Ukraine and Lithuania. Management flexibility provided rapid changes in strategy following the dynamics of the conflict. The international situation confirmed the importance of adapted strategies, which were consistent with the research of J. Weiwei (2023), highlighting a comprehensive approach in Central and Eastern European countries that combined civil and military aspects and ensured effective integration of preventive and crisis measures. The results revealed uneven preparedness of facilities for crises, which was consistent with the observations of C. Welt (2020), noting that the conflict with Russia created uneven pressure on economic and commercial structures, manifesting itself in differences in planning, staff training and the use of threat monitoring technologies. Thus, the integration of crisis management not only ensured security and economic stability but also increased social trust, which was consistent with international research in the field of integrated risk management.

Conclusions

Comprehensive risk management measures include the construction of shelters with autonomous resources, multi-level warning systems, fire safety measures, staff training, shift rotation and coordination with government services. Shelters are equipped with an autonomous power supply of at least 5 kW, a 72-hour supply of drinking water and food, ventilation systems capable of serving 200-500 people at a time, and two emergency exits. Evacuation routes are marked with lighting, and digital alert systems, mobile applications, and QR cards are used for quick identification of personnel, which provides coordination between services and reduces evacuation time. Fire safety is ensured by a 50-70 m² depot for facilities with more than 1,000 visitors, regular inspections of fire extinguishers and automatic extinguishing systems.

The implementation of such measures ensures a comprehensive approach to minimising risks, preserving

human life and health, maintaining the stability of shopping centres and business continuity in conditions of military action. The experience of Forum Lviv, Riviera, Passage, and Karavan demonstrates varying degrees of preparedness for crises and highlights the need for a systematic approach to risk management in the retail sector during armed aggression. All four shopping centres, Forum in Lviv, Riviera in Odesa, Passage in Dnipro and Karavan in Kharkiv, have implemented comprehensive security measures to reduce risks and protect against potential threats. Firstly, protective shelters were arranged in specially designated areas, ensuring quick evacuation of visitors and staff in case of danger. Secondly, emergency warning and notification systems were established to ensure that everyone in the building was promptly informed. Thirdly, regular staff training was conducted on how to act in crises, including evacuation, first aid and coordination with security. In addition, all shopping centres provided quick access to firefighting equipment to respond to fires and other emergencies. These measures were necessary due to various levels of threat: in Kharkiv due to constant shelling, in Dnipro and Odesa due to possible bombings and the risk of missile strikes, and in Lviv due to the

potential threat of a missile strike on a large shopping centre located in a relatively safe region, as a place where large numbers of people gather. This made it possible to minimise financial losses, ensure the safety of visitors and staff, and maintain the functioning of the shopping centre even in conditions of armed aggression.

The limitation of the study is that the analysis covered only large shopping and entertainment centres in Ukraine and did not consider the activities of small and regional retail outlets, which may have different approaches to risk management. Prospects for further research include studying the impact of digital technologies and automated monitoring systems on the effectiveness of crisis management in small and medium-sized retail establishments.

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Інтеграція кризового управління у стратегії безпеки торгово-розважальних центрів України в умовах збройної агресії

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Анотація. Мета дослідження полягала у визначенні ефективності комплексних заходів управління ризиками та стійкості торгово-розважальних центрів України під час збройної агресії. Методологія включала документальний аналіз планів реагування на надзвичайні ситуації та протоколів евакуацій, вивчення засобів масової інформації, кейс-аналіз конкретних торгово-розважальних центрів, що дозволило оцінити практики облаштування укриттів, налаштування систем оповіщення, пожежної безпеки та ротації персоналу у різних регіонах країни. Було визначено, що заходи управління ризиками в торгово-розважальних центрах України включає поєднання укриттів, систем оповіщення, кризових планів, резервного копіювання даних, чіткої комунікації та психологічної підтримки забезпечує бізнесу збереження персоналу, майна та операцій під час війни. Систематичне виконання інструкції (зокрема тренувань, ротації персоналу та взаємодії з державними службами) підвищило ефективність реагування й мінімізувало втрати. Результати кейс-аналізу визначили, що у Forum Lviv створено укриття з автономним електропостачанням, що забезпечує роботу під час відключень світла. У Riviera Shopping City було створено систему укриттів для понад 200 осіб. Зокрема, у Харкові торговий центр Karavan зазнавав численних регулярних обстрілів, що зумовило укомплектувати укриття запасами води та медикаментами. Passage у Дніпрі також стикався з потенційними загрозами замінування та ракетних ударів, що вимагало удосконалення системи оповіщення та відеоспостереження, а також обладнання укриття та регулярних тренінгів персоналу. Рекомендовано поширювати організаційні практики (визначення відповідальних осіб, ротацію персоналу та цифрові системи оповіщення) як стандарт управління безпекою торгово-розважальних центрів. Практичне значення полягає у тому, що результати дослідження можуть бути використані для удосконалення стратегій кризового управління та підвищення безпеки торгово-розважальних центрів України в умовах збройної агресії

Ключові слова: ризик-менеджмент; оперативне реагування; евакуаційні процедури; моніторинг загроз; безпекові технології

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Salary during downtime: Legal and accounting aspects

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Abstract. The study was devoted to a comprehensive analysis of the legal regulation and accounting of wage payments to employees during downtime in Ukraine under martial law. A systemic approach was used in the research, combining a formal-legal method for analysing legal regulation, a documentary analysis method for studying enterprise accounting records, and generalisation methods for identifying the specifics of analytical accounting and classification of payments during downtime. As a result of the conducted study, theoretical foundations of a differentiated approach to remuneration during downtime depending on its causes were defined, and principles for documenting various types of downtime under martial law were systematised. The specifics of accounting representation of payments for downtime were established, including features of analytical accounting by causes and employee categories. Theoretical approaches to classifying labour-cost expenses during downtime according to Accounting Regulation (Standard) 16 were substantiated, and principles for forming enterprises' accounting policies regarding the reflection of compensatory payments were determined. Within the research, proposals for maintaining accounting of payments during downtime were developed using accounts 23, 91, 92, 93, and 94 of accounting, with detailing through analytical subaccounts according to downtime causes. Differences in documentation approaches depending on the type of downtime (force majeure, power outages, evacuation measures, etc.) were analysed, considering primary documentation requirements. Recommendations for enterprises were formulated regarding classification of downtime types and adaptation of internal accounting policy according to the specifics of activity and operational conditions. The practical significance of the study lay in forming a conceptual basis for developing internal accounting standards for remuneration during downtime and improving the legal regulation of labour relations under martial law

Keywords: forced downtime; compensatory payments; labour relations; documentation; analytical accounting; wartime; force majeure

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Introduction

The operation of enterprises in Ukraine under martial law was accompanied by changes in the organisation of economic activities and labour relations. Enterprises faced the need for temporary suspension of operations due to infrastructure damage, disruption of logistics chains, energy-supply limitations, and other wartime factors. This raised questions regarding proper legal documentation and accounting of remuneration during downtime under new conditions.

Issues of labour-relations organisation and personnel management in conditions of economic instability were studied by I. Buriak *et al.* (2022), who analysed trends in managerial and business technology development in the context of the modern Ukrainian economy. The authors emphasised the importance of adapting personnel processes to crisis conditions and the necessity of revising traditional approaches to labour organisation. I. Semets-Orlova *et al.* (2022) examined the functioning of public administration during wartime, identifying key problems in ensuring transparency and efficiency of administrative processes that directly affected labour-relations regulation under crisis conditions.

L. Shevchenko *et al.* (2024) focused on relevant aspects of accounting in Ukraine, analysing modern challenges for the accounting system and proposing ways to overcome these challenges. The authors considered the adaptation of accounting procedures to non-standard situations, including remuneration under crisis conditions. O. Kravchenko & Y. Ahafonova (2024) analysed the specifics of wage accounting under martial law, identifying problematic aspects and proposing theoretical approaches for the resolution. The researchers examined classification of payments for downtime for accounting and taxation purposes.

Problems of payroll accounting and labour relations during martial law were also discussed by O. Podolianchuk (2022), who analysed the theoretical foundations of concluding and paying for labour and civil-law contracts under martial law, identifying key differences in the legal regulation of various labour-relation forms and the impact on accounting procedures. T. Shterma *et al.* (2024) examined organisational-legal and accounting-analytical aspects of wage accrual, substantiating the need for a comprehensive approach to reflecting labour-cost expenses under instability.

Remuneration and its accounting in the general context were explored by S. Drobyazko (2020) and H. Zhuravel *et al.* (2023). S. Drobyazko investigated theoretical foundations of organising payroll accounting, defining conceptual principles for building remuneration systems across enterprises of various ownership forms. The author systematised approaches to classifying labour-cost expenses and substantiated principles for the reflection in accounting. H. Zhuravel *et al.* studied accounting as an element of practical economic theory, defining conceptual bases for generating accounting information for managerial decision-making.

Specific features of enterprise operations under economic instability and the impact on accounting processes

were analysed by H. Umantsiv *et al.* (2023), who studied the valuation of intangible assets in the context of economic uncertainty in Ukraine. The authors substantiated the need to adapt accounting methods to conditions of uncertainty and emphasised the importance of maintaining reliability principles in accounting information. O. Skasko & I.-L. Mohyla (2023) considered the theoretical foundations of tax policy in Ukraine, systematising principles, levels, and models of taxation directly related to wage regulation during downtime and its fiscal implications.

Specific aspects of documenting downtime and wage payments in crisis conditions were studied by N. Gurina & A. Bestiuk (2021), who analysed remuneration accounting organisation at enterprises and identified main problems and solutions. T. Hurenko (2022) examined the specifics of payroll and labour-relations accounting during wartime, emphasising the importance of accurate documentation of payments under extraordinary circumstances.

The analysis of available studies revealed that the regulation of labour relations during downtime under martial law and the theoretical foundations for adapting accounting models to reflect special compensatory payments required further research. Existing publications on this topic did not propose a comprehensive theoretical approach combining legal and accounting aspects of payments during downtime caused by wartime emergencies. There were no theoretical justifications for classifying labour-cost expenses during downtime according to its causes, nor conceptual approaches to forming enterprise accounting policies for reflecting such payments under constantly changing wartime legislation.

The purpose of the study was to theoretically substantiate comprehensive approaches to the legal regulation and accounting of wage payments during enterprise downtime under martial law. To achieve this goal, the following tasks were defined: to analyse the legal framework for regulating remuneration during downtime, considering amendments introduced during martial law; to study the theoretical foundations of documenting downtime and wage payments under such conditions, considering different organisational-legal forms of enterprises; and to systematise the principles for reflecting wage operations during downtime in accounting, considering the causes.

Materials and Methods

The study of theoretical foundations of remuneration during downtime under martial law was conducted from January to April 2025. The methodological basis of the research was a comprehensive approach to examining the legal and accounting aspects of remuneration during downtime, which allowed this issue to be viewed as a complex system of interconnected theoretical elements and conceptual interrelations in the context of labour-relations transformation under crisis conditions.

The research was based on theoretical analysis of key legal acts regulating labour relations and accounting in Ukraine. In particular, the provisions of the Labour Code

of Ukraine (1971) and the Law of Ukraine No. 108/95-VR (1995), which defined the foundations of labour guarantees and remuneration, were studied. The research considered the Resolution of the Cabinet of Ministers of Ukraine No. 221 (2022), which established the specifics of remuneration under martial law. In the field of accounting, Accounting Regulation (Standard) 16 “Expenses” was analysed, which defined the principles of expense classification by function (Order of the Ministry of Finance of Ukraine No. 318, 1999). The Tax Code of Ukraine (2010) was also examined, particularly regarding taxation of payments during downtime, as well as the Law of Ukraine No. 2136-IX (2022), which regulated the procedure for calculating social contributions. Additionally, the Law of Ukraine No. 996-XIV (1999) was considered, as it established the general principles for forming accounting policies.

To achieve the research aim, a complex of general-scientific and specific methods was applied, ensuring a comprehensive theoretical understanding of the issue. The systemic approach enabled consideration of remuneration during downtime as a set of interconnected legal and accounting elements functioning within a unified labour-relations system and influencing theoretical concepts of remuneration under extraordinary conditions. The methods of analysis and synthesis were applied to study separate theoretical aspects of the researched issue and to form an integral conceptual understanding of the remuneration system during downtime, considering the interdisciplinary nature of the study and the need for integrating legal and accounting approaches.

The formal-legal method was used for theoretical analysis of the legal framework regulating remuneration during downtime, in order to identify conceptual foundations of legal regulation. Theoretical analysis of legislative amendments introduced after the full-scale invasion and the impact on labour-law concepts and remuneration principles was conducted.

The method of documentary analysis of accounting procedures was applied to study the specifics of maintaining primary documents and accounting records of enterprises for documenting and reflecting remuneration operations during downtime under martial law. This method made it possible to identify specific requirements for documentary support of downtime, to analyse the structure of document circulation, and to develop recommendations for organising analytical accounting of payments during downtime. Documentary analysis included the study of primary-document forms, accounting registers, procedures for the completion and storage, and internal-control processes ensuring the reliability and completeness of accounting information on compensatory payments under extraordinary conditions.

Results and Discussion

The legal regulation of remuneration during downtime was based on the provisions of general labour legislation and special acts adopted considering the peculiarities of martial law (Amosha *et al.*, 2021). The analysis of legal acts regulating remuneration during downtime made it possible to identify the main provisions, summarised in Table 1.

Table 1. Key legal acts regulating remuneration during downtime in Ukraine

Legal act	Main provisions regarding remuneration during downtime
Labour Code of Ukraine, Art. 113	Downtime not caused by the employee is paid at a rate not lower than two-thirds of the tariff rate of the established grade (salary). Downtime caused by the employee is not paid
Law of Ukraine No. 108/95-VR “On Remuneration of Labour”, Art. 12	Establish minimum state guarantees in remuneration, including payment for downtime not caused by the employee
Resolution of the Cabinet of Ministers of Ukraine No. 221 “Certain Issues Regarding the Remuneration of Employees of State Bodies, Local Government Bodies, Enterprises, Institutions, and Organisations Financed or Subsidised from the Budget under Martial Law”	Define specific features of remuneration for employees of state bodies, local self-government bodies, and enterprises finance from the budget under martial law, including downtime caused by military actions
Law of Ukraine No. 2136-IX “On the Organisation of Labour Relations under Martial Law”	Establish peculiarities of suspension of the employment contract, which is essentially a type of downtime, and the procedure for remuneration under such conditions

Source: compiled by the author based on the Labour Code of Ukraine (1971), Law of Ukraine No. 108/95-VR (1995), Law of Ukraine No. 2136-IX (2022), Resolution of the Cabinet of Ministers of Ukraine No. 221 (2022)

The analysis of the legal acts presented in the table showed a multi-level system of regulating remuneration during downtime in Ukraine. The basic act was the Labour Code of Ukraine (1971), which established the fundamental principle of paying for downtime not caused by the employee at a rate of no less than two-thirds of the tariff rate and the complete absence of payment for downtime caused by the employee. The Law of Ukraine No. 108/95-VR (1995) complemented this regulation by enshrining state guarantees

of the minimum level of remuneration during downtime. The Resolution of the Cabinet of Ministers of Ukraine No. 221 (2022) introduced special regulation for martial law conditions, granting heads of budgetary institutions additional powers for organising work while maintaining minimum pay guarantees. The Law of Ukraine No. 2136-IX (2022) introduced a new legal institution – the suspension of the employment contract – which by its legal nature was close to downtime but had distinct remuneration

regulations. Such a system of legal acts created a comprehensive yet complex regulatory framework that required coordination between different levels of legal norms.

The study of theoretical foundations for applying legal acts under martial law revealed specific features of

documenting and remunerating downtime depending on its causes. To systematise this information, a comparative analysis of remuneration procedures during downtime depending on various circumstances was conducted; the results were presented in Table 2.

Table 2. Procedure for remuneration during downtime depending on its causes

Cause of downtime	Remuneration amount	Documentation	Peculiarities of remuneration under martial law
Downtime due to reasons beyond the control of the employer and employee (force majeure circumstances)	Not less than 2/3 of the tariff rate (salary)	Order on declaration of downtime, act of beginning and end of downtime	Possibility of setting a lower pay rate (but not below the minimum wage) in case of impossibility to provide employees with work due to military actions
Downtime due to employer's fault	Not less than 2/3 of the tariff rate (salary)	Order on declaration of downtime, act of beginning and end of downtime, documents confirming downtime reasons	Mandatory payment of at least 2/3 of the tariff rate (salary) even under martial law
Downtime due to employee's fault	Not paid	Act on downtime due to employee's fault, employee's explanatory note	Not paid regardless of martial law conditions
Suspension of the employment contract	May be unpaid	Order on suspension of employment contract, employee notification	Specific form of employment relationship suspension introduced by Law of Ukraine No. 2136-IX "On the Organisation of Labour Relations under Martial Law"
Downtime due to destruction of production facilities caused by hostilities	At employer's discretion	Order on declaration of downtime, act on damage/destruction of property due to hostilities	Possibility of applying the 2/3 rule or setting another amount at the employer's discretion

Source: compiled by the author based on the Labour Code of Ukraine (1971), Law of Ukraine No. 108/95-VR (1995), Resolution of the Cabinet of Ministers of Ukraine No. 221 (2022)

The analysis of the presented table revealed a complex, differentiated system of legal regulation of remuneration during downtime under martial law. The most protected category in terms of payment guarantees remained employees experiencing downtime due to the employer's fault, who retained the unconditional right to receive at least two-thirds of the tariff rate (salary) even under martial law. This reflected the fundamental labour-law principle assigning the risks of business activity to the employer. The opposite situation occurred in cases of downtime caused by the employee, where, regardless of martial-law conditions, the principle of non-payment persisted, emphasising the employee's personal responsibility for violating labour discipline (Edvardsson & Durst, 2021).

The most legally complex case was the regulation of downtime due to force majeure, where legislation provided for the possibility of lowering the remuneration level below the standard two-thirds of the tariff rate, but limited by the minimum wage, provided that the force majeure was properly documented (Mikos & Zych, 2019). In such cases, the procedure required an order, an act, and, if necessary, a

certificate from the Chamber of Commerce and Industry of Ukraine. Within the regulatory system, the institution of suspension of an employment contract had a similar legal nature to downtime but applied different remuneration approaches, including possible non-payment. In this case, documentation included the employer's order and employee notification. Downtime due to the destruction of production facilities caused by hostilities was regulated by provisions under which the remuneration amount was determined by the employer's decision, differing from other types of downtime with fixed compensation levels. Documentation could include damage acts, photo evidence, and inventory records (Sas *et al.*, 2023).

The process of documenting downtime under martial law had its specific features compared to normal enterprise operation. Primarily, it concerned the need for clear identification and documentary confirmation of downtime causes, since these determined the procedure for calculating and paying wages (Kalivoshko *et al.*, 2022; Hamouche, 2023). Based on the conducted research, a package of documents required for documenting downtime depending on its causes was summarised (Table 3).

Table 3. Documentation of downtime depending on its causes

Cause of downtime	Main documents	Additional documents	Specifics of documentation under martial law
Force majeure circumstances (military actions, missile strikes)	Order on declaration of downtime, act of beginning of downtime, employee notification	Certificate from the Chamber of Commerce and Industry of Ukraine confirming force majeure, damage reports, photo/video evidence	Need for a detailed description of the causal link between military actions and the impossibility of continuing work

Table 3, Continued

Cause of downtime	Main documents	Additional documents	Specifics of documentation under martial law
Lack of power supply	Order on declaration of downtime, act confirming power outage, downtime log	Certificates from energy suppliers, outage acts, time-of-outage records	Maintaining daily records of power-outage periods, especially for recurring interruptions
Inaccessibility of workplaces due to evacuation	Order on declaration of downtime, order of local authorities on evacuation	Lists of evacuated employees, documents confirming change of residence	Possibility of remote documentation; simplified procedure
Destruction or damage of production facilities	Order on declaration of downtime, act on damage/destruction of property, inventory sheets	Expert assessments of losses, insurance documents, photo/video evidence	Need for detailed inventory of damaged assets for accounting and tax reporting
Suspension of the employment contract	Order on suspension of employment contract, employee's application (if available)	Employee notifications, confirmation of notification receipt	Need for documentary confirmation of the impossibility of providing work and salary payments

Source: compiled by the author based on N. Gurina & A. Bestiuk (2021)

The analysis of the table confirmed a differentiation of approaches to documenting downtime depending on its causes under martial law conditions. Downtime caused by force majeure circumstances required the most extensive document package, including a certificate from the Chamber of Commerce and Industry of Ukraine and photo/video evidence of damage, which were necessary to substantiate the connection between military events and the impossibility of performing work. In the case of power outages, recording the duration of interruptions and maintaining downtime records were of key importance for accurate compensation calculation.

Documenting downtime due to evacuation implied simplified procedures and remote processing, consistent with the specific features of enterprises operating in combat zones. In the event of destruction of production facilities, documentation included damage inventory, expert reports, and other materials required for accounting of losses and possible insurance compensation. The institution of suspension of an employment contract was distinguished by relatively lower record-keeping requirements but required clear documentation of the reasons for the employer's inability to provide employees with work and salary payments, which distinguished it from the classical concept of downtime (Hakim *et al.*, 2021; Hamouche, 2023).

Studies of motivational factors in labour relations conducted by F. Edeh *et al.* (2023), and Z. Cullen & R. Perez-Truglia (2022) revealed psychological mechanisms of how accounting transparency affected employee performance. Similar conclusions were drawn by I. Liadskyi & T. Diadyk (2023), who emphasised the importance of managing social intelligence to optimise labour-market pricing and improve the balance between economic efficiency and employee motivation. The analysis of the relationship between fairness of remuneration and organisational behaviour confirmed the importance of clear principles for calculating and accounting for compensation payments. The results obtained within this study aligned with these theoretical provisions: it was found that clear regulation of actions

in cases of force majeure or power disruptions created pre-conditions for forming a transparent accounting system that reduced the risk of employee demotivation. Establishing fixed rules for documenting downtime and determining the amount of payments depending on circumstances was seen as a factor increasing trust in the employer.

Institutional aspects of wage regulation analysed by V. Krokmal & O. Parkhomenko-Kutsevil (2022) revealed mechanisms of interaction between state regulation and corporate accounting practices. The provisions regarding coordination among different levels of wage management correlated with this study's findings, particularly in determining multi-level legal influence on the formation of accounting policy during downtime. The analysis of the legal and regulatory framework confirmed the simultaneous effect of general guarantees stipulated by the Labour Code of Ukraine and special provisions introduced under martial law, which created challenges in harmonising accounting procedures.

The assessment of the technological potential of artificial intelligence in the accounting sphere, conducted by S. Cao *et al.* (2024), indicated new opportunities for automating accounting practices of compensation payments. The conclusions obtained in this study confirmed the relevance of such approaches: in cases of force majeure, particularly wartime or evacuation, the implementation of digital accounting systems with algorithms for classifying causes of downtime enabled rapid adaptation of accounting policy to changes in the external environment. This demonstrated the relevance of using intelligent technologies to substantiate compensation payments, especially in conditions requiring additional supporting documentation (Toledo, 2025).

According to Accounting Standard (Regulation) 16 "Expenses", approved by Order of the Ministry of Finance of Ukraine No. 318 (1999), expenses were recognised by the functional purpose – production, administrative, selling, and other operating expenses. In cases of enterprise downtime, classification of employee wage expenses depended on the reason for downtime and the personnel's functional purpose. If the downtime was of a production

nature (for instance, due to lack of raw materials or equipment failure), wage expenses for downtime of main-production employees were classified as direct production costs (para. 9). These were included in the cost of products, works, or services.

If, however, employees were idle for reasons unrelated to the production process – for example, due to administrative decisions (changes in management structure, temporary suspension of operations for organisational reasons) – the corresponding wage expenses were to be classified as administrative expenses (para. 18 of the Accounting Regulation (1999)). If the downtime was related to sales or other functions (for instance, marketing or logistics departments), the wage expenses were recorded under selling or other operating costs depending on the respective unit's function. Thus, when recording expenses, the accountant was required to maintain analytical accounting of downtime causes, ensuring proper classification of expenses and reliable information for management analysis. This was crucial not only for preparing financial statements but also for further managing labour efficiency under conditions of production risk, organisational transformation, or temporary reduction of activity (Washienko, 2021). Alongside correct classification, accounting for payments during downtime also required fulfilment of tax and social obligations. Taxation conditions for such payments remained unchanged even under martial law. According to para. 164.2.1, Article 164 of the Tax Code of Ukraine (2010), amounts accrued to employees during downtime were included in the taxable base of personal income tax at a rate of 18% (para. 167.1). Specifically, under para. 164.2.1 of para. 164.2, Article 164, the total monthly (annual) taxable income of a taxpayer included income in the form of wages accrued (including for periods of forced downtime). Thus, amounts accrued for the period of downtime as part of wages (at no less than two-thirds of the tariff rate or salary, according to Article 113 of the Labour Code of Ukraine (1971)) were subject to personal income tax

in the general manner. It was also important to note that the military levy introduced by Law of Ukraine No. 2120-IX (2022) also applied to downtime payments. The military levy rate was 1.5%. Since payments for downtime were classified as wages, the payments were subject to the military levy under the general rules.

As for the single social contribution, under para. 1, part 1, Article 7 of Law of Ukraine No. 2464-VI (2010), the base for calculation of the single contribution was the accrued wage amount. According to part 5, Article 8 of the same law, the employer's contribution rate was 22%. Accordingly, even during downtime, the employer was required to calculate the single contribution from the paid amount (no less than two-thirds of the tariff rate) unless the employee was dismissed or on unpaid leave. It was also important that during martial law, certain benefits provided by Law of Ukraine No. 2120-IX (2022) applied to sole proprietors and specific taxpayer categories, but these benefits did not cancel the employer's obligation to pay the single social contribution on employee downtime payments.

Within the socio-political context in Ukraine caused by military actions, many enterprises were forced to halt production or transfer employees to downtime mode. However, labour guarantees and tax obligations concerning remuneration remained relevant (Sakun *et al.*, 2021). The practical application of these norms during wartime demonstrated the need for a balanced approach to compliance with labour law and simultaneous tax discipline. Failure to properly tax during downtime could be considered a violation of employee labour rights and result in financial liability for the employer. Under these conditions, the company's accounting policy gained special importance and had to adapt to the changed economic and legal reality (Prugberger & Román, 2022). Considering the requirements of Accounting Regulation (Standard) 16 "Expenses" and the norms of the Tax Code of Ukraine (2010) and Labour Code of Ukraine (1971), key principles for forming accounting policies for labour-cost recognition during downtime were identified (Table 4).

Table 1. Principles of forming enterprise accounting policy under martial law (regarding labour-cost expenses during downtime)

Principle	Essence	Justification
Classification of expenses depending on downtime causes	Labour expenses during downtime are classified by type: production, administrative, other operating	According to Accounting Regulation 16, expenses are classified depending on the activity within which the downtime occurs
Compliance with labour guarantees	Preservation of the employee's average wage according to Article 113 of the Labour Code of Ukraine	Regardless of downtime causes, the employee has the right to payment; the enterprise must account for this in its accounting policy
Adaptability to unforeseen conditions	Prompt change of accounting policy during martial law, with an approved internal order	Law of Ukraine No. 996-XIV "On Accounting and Financial Reporting in Ukraine" provides for the possibility of changing accounting policy in cases of force majeure
Tax consistency	Recognition of wage expenses as deductible expenses reducing taxable profit	The Tax Code of Ukraine allows inclusion of these expenses in tax deductions subject to documentary proof
Transparency of accounting decisions	Reflection of methodological approaches in the accounting-policy order	Ensures legal certainty for internal and external audit
Use of reserves	Possibility of creating reserves to ensure payments during downtime	Allows partial compensation of financial burden during force majeure

Source: compiled by the author based on the Labour Code of Ukraine (1971), Order of the Ministry of Finance of Ukraine No. 318 (1999), and Law of Ukraine No. 996-XIV (1999), Tax Code of Ukraine (2010)

At the chart-of-accounts level, regulated by the Order of the Ministry of Finance of Ukraine, labour-cost expenses were recorded under account 92 “Administrative Expenses”, 93 “Selling Expenses”, and 94 “Other Operating Expenses”, as well as account 23 “Production” for direct production costs. During downtime, depending on the causes, corresponding labour-cost expenses of main-production employees were recorded through subaccounts to account 23, which corresponded to direct production costs. Expenses related to administrative or sales staff were recorded in subaccounts according to the functional affiliation – within accounts 92 and 93. To ensure analytical accounting by downtime causes, additional subaccounts or analytical cards were used to reflect, for instance, expenses due to technical, organisational, force-majeure, or wartime downtime. This division enabled not only detailed expense accounting but also management control, efficiency analysis, and compensation planning (Ocheretko & Khokhlova, 2018).

The analysis of the legal framework, methodological principles, and practical recommendations revealed that existing documents recommended detailed accounting of expenses using a functional approach; however, public sources and methodological materials lacked clear guidelines for organising such accounting at the level of accounts and subaccounts. Comparison with the results of studies by K. Bagrii *et al.* (2024) confirmed that in the context of digitalisation, accounting reached a new level of transparency and analytical capacity through Enterprise Resource Planning systems and automation of accounting procedures. At the same time, it was found that in Ukrainian practice, a systematic description of functional classification of downtime expenses remained insufficiently developed and required further methodological detailing. This aligned with the general provisions of the research, which emphasised the need for flexible and adaptive accounting that considered wartime specifics and modern information-system capabilities.

The importance of local legal regulation was confirmed by J. Burnyagina (2018), who highlighted the role of internal corporate acts in ensuring legality and reducing legal-risk exposure. The results of this study confirmed that forming accounting policy with clearly defined procedures for accrual and classification of downtime expenses was one of the key elements of legal and organisational support of accounting under martial law. Comparison with M. Chang *et al.* (2008) concerning the impact of user experience in ERP systems on analytical accounting quality reflected the importance of aligning technical capabilities with internal methodological instructions. The methodological approaches analysed by I. Herasymovych *et al.* (2023) supported the view of the need for systemic accounting engineering, which involved designing accounting-action scenarios and expense provisioning. This study confirmed that applying such principles enhanced compliance of accounting procedures with regulatory requirements and improved financial-risk management.

Based on the research results, several practical, action-oriented solutions were proposed to improve payroll

accounting during downtime (Sanders *et al.*, 2024). Firstly, it was advisable to develop internal regulations classifying types of downtime according to the causes (production, administrative, force majeure), followed by defining accounting approaches for each type. Such detailing ensured correct expense reflection in corresponding accounts (23, 91, or 94), which in turn contributed to more accurate enterprise financial results. Moreover, it was recommended to standardise documentation of downtime by specifying date, duration, cause, manager’s order, and payment decision – reducing risks of data distortion in primary records. To enhance accounting transparency, introducing separate analytical subaccounts under account 66 was advisable to record payments related to forced downtime separately. It was also important to establish information coordination between HR, accounting, and planning-economic departments to ensure timely collection and processing of downtime data. Improved accuracy in accounting for such operations contributed not only to correct expense reporting in financial statements but also to informed managerial decision-making on cost optimisation during periods of reduced production load.

Conclusions

The analysis of the legal framework confirmed significant changes in labour relations regulation, particularly concerning remuneration during downtime. Legislative norms set out in the Labour Code of Ukraine, Law of Ukraine No. 108/95-VR, and Resolution of the Cabinet of Ministers of Ukraine No. 221 defined a differentiated approach to payment depending on the reasons for work suspension. New instruments, including the mechanism of employment-contract suspension, substantially expanded regulatory tools under extraordinary conditions. The study of documentation mechanisms for downtime showed increased necessity for recording reasons related to hostilities, occupation of territories, or destruction of production facilities. Emphasis was placed on the need for proper documentation of supporting evidence – such as certificates from the Chamber of Commerce and Industry, inspection reports, and supplier notifications. At the same time, the absence of unified requirements for document forms led to inconsistency in recording approaches, complicating practical implementation of accounting procedures.

The examination of how downtime payments were reflected in accounting revealed deficiencies in applying functional expense classification and the absence of a unified analytical-accounting model for such operations. It was found that systematisation of analytical information required detailing by types of downtime and employee groups to ensure transparency in expense formation and linkage to the sources. Use of analytical subaccounts and internal subdivision-level differentiation was an essential condition for reliable accounting in crisis conditions. It was established that for different downtime types (force majeure, evacuation, power outages, etc.), a specific document package was formed. This required enterprises to

maintain flexibility when preparing internal regulations. It was concluded that classification of labour-cost expenses during downtime depended not only on employees' functional role but also on the downtime cause. This approach aligned with the requirements of Accounting Regulation (Standard) 16 regarding functional breakdown of expenses into production, administrative, selling, and other operating categories. Accounting reflection of expenses under accounts 23, 91, 92, 93, and 94 with analytical subaccount detailing was proposed, enabling expense recording according to the specific source or type of downtime (technical, organisational, force-majeure, wartime, etc.). Such an approach improved accuracy of financial-report formation and managerial decision-making efficiency.

Taxation aspects revealed that payments for downtime were generally subject to personal income tax, military levy, and single social contribution. However, in practice, exceptions existed – particularly for mobilised employees or those in temporarily occupied territories – requiring cautious calculation of tax obligations and documentation of such individuals' legal status. Practical recommendations were developed for enterprises to: create a downtime-type classifier reflecting causes and production

impact; adapt accounting policies to martial-law conditions with internal regulatory approval of changes; implement analytical-accounting mechanisms through subaccounts and ERP systems for real-time cost control; and standardise downtime documentation procedures with coordinated action between HR, accounting, and planning-economic departments.

Promising directions for further research included developing sectoral guidelines for downtime remuneration accounting, adapting European short-time work programme experience, and forming integrated accounting-analytical systems ensuring not only compliance with accounting standards but also the sustainability of labour relations during periods of economic instability.

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Conflict of Interest

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Заробітна плата під час простою: юридичні та бухгалтерські аспекти

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Анотація. Дослідження присвячено комплексному аналізу нормативно-правового регулювання та бухгалтерського обліку виплати заробітної плати працівникам під час простою в Україні в умовах воєнного стану. У дослідженні використано системний підхід, що поєднує формально-юридичний метод для аналізу нормативного регулювання, метод документального аналізу для вивчення облікових реєстрів підприємств, а також методи узагальнення для виявлення особливостей аналітичного обліку та класифікації виплат під час простою. У результаті проведеного дослідження визначено теоретичні засади диференційованого підходу до оплати праці під час простою залежно від його причин та систематизовано принципи документального оформлення різних видів простою в умовах воєнного стану. Встановлено специфіку бухгалтерського відображення виплат за час простою, включаючи особливості аналітичного обліку за причинами виникнення та категоріями працівників. Обґрунтовано теоретичні підходи до класифікації витрат на оплату праці під час простою відповідно до Положення (стандарту) бухгалтерського обліку 16 та визначено принципи формування облікової політики підприємств щодо відображення компенсаційних виплат. У межах дослідження розроблено пропозиції щодо ведення обліку виплат за час простою з використанням рахунків 23, 91, 92, 93, 94 бухгалтерського обліку, із деталізацією за аналітичними субрахунками відповідно до причин простою. Проаналізовано відмінності у підходах до документального оформлення простою залежно від його типу (форс-мажорні обставини, відключення енергопостачання, евакуаційні заходи тощо), з урахуванням вимог до первинної документації. Сформульовано рекомендації для підприємств щодо класифікації видів простою та адаптації внутрішньої облікової політики відповідно до специфіки діяльності та умов функціонування. Практичне значення дослідження полягає у формуванні концептуальної основи для розробки внутрішніх стандартів обліку оплати праці під час простою та вдосконалення нормативно-правового регулювання трудових відносин в умовах воєнного стану.

Ключові слова: вимушений простій; компенсаційні виплати; трудові відносини; документування; аналітичний облік; воєнний час; форс-мажорні обставини

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Financial integration of businesses and amalgamated territorial communities: Mechanisms for attracting alternative financing and cost assessment based on the example of enterprise activities

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Abstract. The study aimed to assess the effectiveness of public-private partnership programmes for Ukrainian communities and enterprises. To achieve this goal, a segmented analysis of official statistical indicators reflecting the financial potential of Ukrainian communities for the period 2020-2024 was used. A general trend of low local budget execution was identified, which did not exceed 100.72% during the period under review. The analysis found that 70.1% of amalgamated territorial communities (ATCs) in Ukraine are financially viable. The study determined that a hybrid form of public-private partnership is the most promising mechanism for alternative financing in the Ukrainian context. Business participation in such projects has demonstrated a significant economic effect: partner enterprises have invested between UAH 1.6 and UAH 3.8 million in the development of local infrastructure and production capacities, achieving profitability of 10-12% and return on sales of up to 15%. In addition, businesses have expanded their sales markets (entering national retail chains), optimised costs and increased the added value of their products. For communities, this meant an increase in the financial capacity index from 1 to 5 points, budget over-performance of up to 103% and the creation of 8-20 new jobs, which ensured stable growth in tax revenues and long-term socio-economic effects. For communities with low and critical levels of financial capacity (29.9% of all Ukrainian communities), the introduction of a hybrid model was proposed, in which private partners provide the main funding. The results of the study can be used by local authorities in Ukraine to develop effective models for the financial integration of businesses into the community

Keywords: local government bodies; private partners; public-private partnership; hybrid model; infrastructure

Introduction

In the context of decentralisation of power in Ukraine, the issue of the financial capacity of amalgamated territorial communities (ATCs) is becoming increasingly relevant.

Standard sources of revenue for local budgets are limited to a fixed list of taxes and transfers, which does not always ensure the sustainable development of communities, especially

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in conditions of martial law, migration challenges and infrastructure restoration needs. In this context, the study and implementation of alternative sources of funding is relevant.

The international scientific community has already studied possible alternative sources of funding for communities. The financial security of communities was analysed by M. Skoryk *et al.* (2023). According to the observations of scientists, in the first months of the Russian full-scale invasion of Ukraine in 2022, there was a significant reduction in funding, which made it impossible to implement territorial development projects. This problem can be solved by attracting additional sources of funding, namely by obtaining grant revenues. The possibility of sustainable development of ATCs was studied by M. Zabash-tanskyi & I. Sydor (2023). The researchers concluded that the sustainable development of Ukrainian communities is possible through the implementation of public-private partnerships (PPPs) with the expansion of areas of implementation. At the same time, as of 2023, organisational problems, in particular licensing procedures and documentation preparation, have slowed down the pace of PPP implementation across the country.

H. Nørsgaard & A.A. Thuesen (2021) analysed community development in Denmark. As a result of their research, the scientists concluded that an effective tool for providing financial support to communities is to involve residents in competitive programmes and project initiatives. This creates conditions for attracting extra-budgetary funds for the development of rural communities. The expansion of rural citizen participation in Poland was studied by D. Bednarska-Olejniczak *et al.* (2021). As a result of their analysis, the researchers noted that grants are one of the effective methods of financing communities. The study proved that participation in grant programmes contributes to increasing residents' activity and interest in the development of their own communities. This leads not only to the development of local Polish communities but also to an increase in social activity and civic capacity among the population. However, V. Wu (2021) came to the opposite conclusion. Analysing community philanthropy as one of the mechanisms for financing communities, the study confirmed its effectiveness based on empirical data. At the same time, the study noted that philanthropy is used mainly in communities with a high level of social capital. Thus, in practice, a dilemma arises: attracting extra-budgetary funds contributes to the development of rural communities, but to obtain alternative sources of funding, it is necessary to have already established social capital that is attractive to investors.

Crowdfunding is substantial in the development and implementation of projects for rural development. B. Keegan (2021), researching fundraising technologies as a tool for additional community financing, confirmed their effectiveness but also highlighted potential risks. According to the findings, regular large charitable contributions can reduce the level of autonomy of communities, creating dependence on external resources. In academic discussions, increasing attention is being paid to business

participation in financial integration with communities through PPP mechanisms. Thus, T. Liu & P. Fong (2025), comparing the experiences of China and New Zealand, confirmed that the effectiveness of PPP projects largely depends on a well-prepared business model. The researchers emphasised that it is a well-founded business case that ensures the long-term economic feasibility of cooperation between the private sector and local authorities, minimising financial risks and increasing the investment attractiveness of territories. This conclusion is relevant in the context of Ukrainian realities, where communities need additional mechanisms for integrating enterprises into development projects.

Similar conclusions were reached by M. Negrych *et al.* (2024) in a study on the gradual development of PPPs in Ukraine. The study emphasised that infrastructure projects that create synergy between business interests and community needs have the greatest potential. At the same time, the study determined that the key problem remains the inconsistency of legislative procedures with international standards, which complicates the attraction of foreign investors to Ukrainian territorial projects. In this context, the study by N. Petrukha (2024) on the prospects for PPP development in the field of infrastructure reconstruction is relevant. The study demonstrated that Ukrainian communities could develop by utilising the potential of business in the energy, transport, housing and utilities sectors. The study emphasises that cooperation between the private sector and local authorities not only ensures the modernisation of infrastructure but also creates conditions for sustainable economic growth in the regions. O. Tymkiv & D. Barabas (2025) analysed the prospects of involving Ukrainian enterprises in European financial programmes. The study noted that business participation in EU grant and investment initiatives opens additional development opportunities for communities. According to their analysis, joint projects between municipalities and enterprises within the framework of European instruments contribute to strengthening the integration of the Ukrainian economy with the European space and provide communities with access to alternative sources of capital.

Despite many studies, a single alternative approach to attraction of financial resources for community development is not developed. Specifically, a source of funding that can be successfully implemented in practice in most communities. The study filled the scientific gap and highlighted a real example of an alternative source of funding that can be successfully implemented in practice for the further development of communities and businesses simultaneously.

The study aimed to assess the effectiveness of the financial integration of enterprises and ATCs within PPPs. To achieve this goal, the following tasks were performed: the financial potential of ATCs across the country and the feasibility of involving PPPs in local budgets were determined; the possible form of PPP involvement for Ukrainian communities and enterprises was established; and the effectiveness of PPPs for communities and enterprises was determined.

Materials and Methods

The empirical basis of the study was based on official statistical data for 2020-2024, which characterised the financial potential of ATCs in Ukraine. The unit of analysis in this study was ATCs in Ukraine. The inclusion criterion was the availability of official statistical data on financial capacity. The exclusion criterion was a change in the administrative status of the community. The study considered all ATCs, with the exception of 107 communities that acquired the status of temporarily occupied in 2024 (Decentralisation, 2025b). To compare the financial indicators of ATCs with the all-Ukrainian and average values, regions were also included in the comparative analysis as units of analysis.

Segmented and comparative analysis was applied based on the following indicators: general fund revenue per capita in the ATC, capital expenditure per capita in the ATC on average across the country, and the share of capital expenditure (Decentralisation, 2021; 2025a). The level of planned revenue execution by items in local budgets before the start of Russia's full-scale invasion of Ukraine and the dynamics of changes in alternative financing among Ukrainian ATCs were considered (Ministry of Finance of Ukraine, 2025). For a more detailed analysis, the dynamics and structural changes in local budget borrowing were determined. A comparative analysis was applied to the level of planned revenue execution by items in the country's local budgets after the start of the Russian full-scale invasion of Ukraine and the ratio of tax revenues to non-tax revenues of local budgets, which were executed according to the revised annual plan. The comparison used a classification of communities' financial capacity levels (high, optimal, satisfactory, low, critical) based on an integral indicator of communities' financial capacity (Decentralisation, 2025b).

To evaluate alternative financing mechanisms, a case study method was used, which involved researching the implementation of the project "Development of organic berry farming in the territorial communities of Rivne Region". The project was implemented under a public-private partnership (PPP) model and covered the Korets, Hoscha, Ostroh and Pryvilne communities in the Rivne region. The private partners were: RSN-Trade LLC (2025) (Ukraine), partner of the Korets community; Polissya Organic AGRO SFG (2025) (Ukraine) – partner of the Hoshcha community; Ostrog Agro LLC (2025) (Ukraine) – partner of the Ostroh community; Organic Berry FG (2025) (Ukraine) – partner of the Pryvilne community. The case analysis was conducted based on official statistical data and open industry sources from the Decentralisation portal (2025a, 2025b), materials from K. Shor (2024), as well as open reports and analytical publications from PPP participants.

To assess the project's impact on community development, a comparative analysis of the financial capacity of four ATCs (Koretska, Hoschanska, Ostrozka, and Pryvilnenska) was conducted for the period 2021-2023, covering the project implementation period. The assessment of financial capacity was conducted using an adapted version of Ken Brown's 10-point test, available on the Decentralisation

portal (2024). In this model, financial capacity was determined by several key financial ratios (Kazuk, 2023): low level – from -10 to -1 points; satisfactory – 0-4; optimal – 5-9; high ≥ 10 points.

The study was limited by incomplete access to detailed statistical indicators of the effectiveness of implementing the hybrid PPP model for individual enterprises (in particular, RSN-Trade LLC). Therefore, the comparison of the effectiveness of partnerships for these companies is presented mainly in the form of qualitative indicators, supplemented by available financial data. After analysing the financial potential of ATCs across the country and real-life successful examples of attracting alternative financing, the final stage of the study involved comparing the main approaches that may be appropriate for attracting alternative forms of financing for financially capable and financially weak ATCs.

Results

As of 2020, 872 ATCs were operating in Ukraine, with an average general fund income per capita of UAH 5,200.6. As of 2024, the total number of ATCs was 1,331, and the average income per capita in ATCs was 8,182.8 UAH. The highest figures were recorded in the Kyiv region, namely in the Prystolychna, Borshchahivska and Kozinska ATCs, namely UAH 69,644, UAH 65,368.3, and UAH 58,824.8, respectively. The minimum indicators in 2024 were recorded in the Luhansk region, namely in the Kolomyichiska and Krasnorichenska ATC, at UAH 510.2 and UAH 280.1, respectively, as well as in the Zaporizhzhia region in the Malotokmachanska ATC at UAH 435.6. These minimum indicators are due to prolonged hostilities in the Luhansk and Zaporizhzhia regions. The growth rate of this indicator for the period 2020-2024 was 57.34%. In 2020, 31.4% of communities out of the total number showed per capita income indicators above the average, and in 2024, the same indicator was 39.3%. Therefore, it is possible to conclude that the per capita income of the general fund shows that, even despite the Russian full-scale invasion of Ukraine, the percentage of ATCs that can support themselves through resources generated within the ATC territory increased by 7.9% between 2020 and 2024 (Decentralisation, 2021; 2025a).

To demonstrate the identified imbalances, the structure of local budget revenues by main items in the pre-war period was examined. An analysis of Ukraine's official statistics leads to the conclusion that, in practice, there was a low level of implementation of planned revenues by items in the country's local budgets before the start of Russia's full-scale invasion of Ukraine (Table 1).

In the pre-war period (2020-2021), local budget revenue performance remained uneven. In 2020, total revenue amounted to 98.16% of the revised annual plan, indicating a budget shortfall of 1.84%. Only non-tax revenues exceeded the planned indicators (+0.98%). In 2021, the situation improved somewhat: the overall revenue performance indicator rose to 100.64%, exceeding the planned value for

the first time (+0.64%). This overperformance was primarily driven by tax revenues (+4.4%) and non-tax revenues (+2.85%). At the same time, all other revenue items – income from capital transactions, transfers from government bodies, international aid and special-purpose funds – did not reach the planned levels in 2020-2021, which

indicates their limited role in forming the revenue base of local budgets during this period. An analysis of Ukraine's official statistics leads to the conclusion that, in practice, there has also been a low level of implementation of planned revenue in the national and local budgets since the start of the Russian-Ukrainian war in 2022 (Table 2).

Table 1. Revenues of Ukrainian local budgets by item in 2020-2021

Income source	2020			2021		
	RAP, billion UAH	CP, billion UAH	CFRAP	RAP, billion UAH	CP, billion UAH	CFRAP
Additional income	289.21	285.57	98.73	332.1	346.71	104.4
Untaxed income	21.25	21.46	100.98	26.43	27.18	102.85
Income from capital transactions	4.08	3.47	85.13	4.48	3.46	77.41
From government bodies	164.75	160.18	97.22	213.21	202.73	95.08
From the EU, foreign governments, international organisations, and donor institutions	0.18	0.15	83.58	0.04	0.03	82.05
Target funds	0.82	0.65	79.12	0.75	0.57	76.12
Total	480.3	471.48	98.16	577	580.70	100.64

Note: RAP – revised annual plan, CP – completed in the period, CFRAP – completed following revised annual plan. The information is provided without the temporarily occupied territories and the Autonomous Republic of Crimea

Source: compiled by the author based on the Ministry of Finance of Ukraine (2025)

Table 2. Revenues of Ukrainian local budgets by item for the period 2022-2024

Income source	2022			2023			2024		
	RAP, billion UAH	CP, billion UAH	CFRAP	RAP, billion UAH	CP, billion UAH	CFRAP	RAP, billion UAH	CP, billion UAH	CFRAP
Additional income	389.98	393.46	100.89	424.74	434.54	102.3	423.22	441.09	104.22
Untaxed income	23.08	22.04	95.5	35.34	36.51	103.3	41.68	43.6	104.62
Income from capital transactions	3.77	2.28	60.38	3.17	3.62	104.17	5.64	4.85	86.11
From government bodies	174.58	136.75	78.33	204.36	177.39	86.8	201.11	187.93	93.44
From the EU, foreign governments, international organisations, and donor institutions	0.22	0.23	102.34	0.81	0.2	24.4	2.36	1.43	60.44
Target funds	0.71	0.34	48.25	0.45	0.35	77.85	0.61	0.62	101.34
Total	592.33	555.1	93.71	668.88	652.61	97.56	674.62	679.53	100.72

Note: the information is provided without the temporarily occupied territories and the Autonomous Republic of Crimea

Source: compiled by the author based on the Ministry of Finance of Ukraine (2025)

In 2022-2024, local budget revenue performance remained unstable and was characterised by deviations from planned targets. In 2022, the overall revenue performance rate was only 93.71%, indicating a significant shortfall (-6.29%). In 2023, the situation improved somewhat, but execution remained below plan (97.56%), and in 2024, for the first time since the start of the war, the figure reached 100.72%. Among individual items, tax revenues remained a stable source of revenue during 2022-2024, exceeding the planned indicators by 0.89-4.22% each year. Starting in 2023, non-tax revenues were added to this group, exceeding the plan by 3.3% in 2023 and 4.62% in 2024. The rest of the revenue items, however, showed unstable results. Revenues from capital transactions in 2022 amounted to only

60.38% of the plan, although in 2023 there was an over-performance (104.17%), but in 2024 there was another decline (86.11%). Transfers from government bodies were systematically under-performed (78.33-93.44%). Revenues from the EU and international organisations were particularly unstable: in 2022, they exceeded the plan (102.34%), but in 2023, they declined to 24.4%, and in 2024, they partially recovered to 60.44%. Targeted funds fluctuated from 48.25% in 2022 to 101.34% in 2024. Thus, in 2020-2024, tax revenues remained the main source of stability for local budgets, while other items proved to be unstable and could not compensate for the shortfall.

As for the ratio of tax revenues to non-tax revenues, in 2022 this indicator was 17.85, in 2023 it decreased to 11.9,

and in 2024 to 10.12. This means that at the beginning of the full-scale invasion in 2022, for every UAH 1 of non-tax revenues, there were 17.85 UAH of tax revenues, while in 2024, this ratio decreased to UAH 10.12 per UAH 1 of non-tax revenues (Ministry of Finance of Ukraine, 2025). Thus, between 2022 and 2024, there was an increase in the share of non-tax revenues in the total volume of local budgets, indicating their real growth. It is worth paying attention to the ratio of tax revenues to non-tax revenues, which was implemented according to the revised annual plan for 2022-2024. In 2022, this indicator was 1.05, and in 2024, it was 0.99. From 2023 to 2024 inclusive, non-tax revenues were implemented more effectively than tax revenues. These statistics indicate that the role of non-tax revenues in the ATC has increased, and, at the same time, the structure of local budget revenues started to balance in the context of the war.

A substantial indicator of financial capacity is the level of capital expenditure per capita. Capital expenditure per capita in ATCs averaged UAH 1,244.5 in 2020. In 2024, this figure increased by 66.8% to UAH 2,075.8. Only 381 communities had capital expenditures above the average in 2024, which is 28.63% of the total number of ATCs in Ukraine. The dynamics of the share of ATC capital expenditures in total expenditures for the period 2020-2024 were declining and decreased by an average of 2.43% across the country. In 2020, the average share of capital expenditures in ATCs was 14.9%, and in 2024 it was 12.47%. At the same time, in 2024, only 37.34% of all ATCs in Ukraine had a share of capital expenditures above the average. Thus, in 2024, only about one-third of Ukrainian ATCs had a higher-than-average level of the analysed indicator, while during 2020-2024, the capacity of ATCs to ensure socio-economic and infrastructural development decreased (Decentralisation, 2021, 2025a). The average level of general fund revenues per capita in ATCs, the ratio of tax and non-tax revenues, capital expenditures per capita in ATCs, and the share of ATC capital expenditures in total expenditures directly affect the financial capacity of communities. The analysed statistical data on these indicators highlight the advisability of increasing alternative financing for communities, as it is not always possible to increase ATC financing by attracting tax or non-tax revenues.

Overall, alternative sources of local budget financing in Ukraine increased 1.7 times between 2020 and 2024 (from UAH 3.62 billion in 2020 to UAH 6.28 billion in 2024). Revenues from capital transactions for the same period increased from 3.47 billion to 4.85 billion. Financial assistance from the EU, foreign governments, international organisations and donor institutions increased overall during the period 2020-2024 from 0.17 billion in 2020 to 1.43 billion in 2024. At the same time, revenues under aid programmes from the EU, foreign governments, international organisations and donor institutions increased from UAH 0.001 billion to UAH 0.52 billion in 2024, while grants increased sixfold (from UAH 0.15 billion in 2020 to UAH 0.91 billion in 2024). The main reason for the increase in alternative financing was the Russian-Ukrainian

war (Ministry of Finance of Ukraine, 2025). During the period 2020-2024, the structure of local budget borrowing changed significantly. Local budget borrowing in 2020 amounted to UAH 7.75 billion, namely: domestic borrowing (loans and bonds) UAH 7.34 billion, and external borrowing from foreign creditors UAH 0.41 billion. In 2024, local budget borrowing decreased by 44.9% and amounted to UAH 4.27 billion, of which domestic borrowing in the form of loans and bonds amounted to 1.2 billion UAH, and external borrowing from foreign creditors amounted to UAH 3.07 billion.

Despite the upward trend in attracting alternative sources of funding to local budgets, incorporating the financial capacity of communities, it is advisable in practice to implement PPPs as an alternative source of attracting additional funds to communities. PPP – a form of cooperation between local government bodies and private entities in the national economy, aimed at utilising the strengths of participants to achieve common goals (Giti *et al.*, 2020; Muliar *et al.*, 2022). As of 31 December 2024, 200 PPP agreements had been concluded in Ukraine, of which 11% are being implemented in practice, while 83.5% are not being implemented due to non-performance or termination of the agreement. At the same time, 5.5% of PPP agreements across the country have been suspended due to the start of Russia's full-scale invasion of Ukraine (Ministry of Economy, Environment and Agriculture of Ukraine, 2025). The implementation of PPPs is essential for Ukraine in the context of the Russian-Ukrainian war. On the one hand, there is a constant need for Ukrainian communities to improve and develop their infrastructure. On the other hand, since the start of the full-scale invasion in 2022 and up to and including 2025, in de-occupied ATCs or towns, villages and settlements under constant Russian shelling, infrastructure restoration is a substantial element of the further functioning and development of settlements.

In theory, three models of PPP involvement in infrastructure financing can be implemented: municipal, hybrid and private models. Each PPP model requires one of the main conditions to be met for its successful implementation in practice (Ruiters & Matji, 2016). Of the above models, the municipal model is not feasible for Ukrainian communities, as its effectiveness has only been demonstrated in practice with sufficient budgetary funding and effective management of financial resources. This makes it impossible to effectively implement the municipal PPP model in the Ukrainian context, as in 2024, there was still a low level of achievement of the financing revenue plan in the ATC (Ministry of Finance of Ukraine, 2025). The private PPP model is also not effective for implementation in Ukraine, as this model can only be effective in practice if the financial market is sufficiently developed. Russian full-scale invasion of Ukraine, the SARS-CoV-2 coronavirus pandemic, the unstable dynamics of the national currency exchange rate, and the imperfect Ukrainian financial system have caused a financial crisis in the country and contributed to the deterioration of the financial market (Gataullina, 2023). Such

conditions make it impossible to effectively use the private PPP model for Ukrainian communities.

A hybrid model is appropriate for Ukraine's ATCs. The hybrid model is based on cooperation between local authorities and entrepreneurs (Ruiters & Matji, 2016). In practice, the advantages of PPP were confirmed during the implementation of the project "Development of organic berry farming in the territorial communities of Rivne region" – the first PPP agreement in Ukraine on organic production (Shor, 2024). This project was created in 2021 as part of the programme "Organic Trade for Development in Eastern Europe". The project ran until 2024. The goal of the PPP was to support the export of organic products by creating berry supply chains, increasing production and trade in organic products to improve Ukraine's competitiveness in the international market. Due to the outbreak of the Russian-Ukrainian war in 2022, it was impossible to implement this project in the first quarter of 2022, so its implementation was postponed until the end of the same calendar year. In other words, the full-scale invasion had a significant impact on the small number of PPP projects that had been developed in Ukraine, as the postponement of the PPP project slowed down the implementation of alternative financing mechanisms. The main participants in this PPP project were Ukrainian ATCs, namely the Koretska, Hoshchanska, Ostrozka and Pryvilnenska communities in the Rivne region. The main partners were the Ukrainian company RSN-Trade LLC and the German company Organic Life GmbH. During the year, the National University of Water and Environmental Engineering also became a partner in the project, ensuring the continuity of the educational process. During the project, training for the community was developed and implemented, consisting of theoretical basics and practical skills in organic berry growing. The

community did not take on any financial investment obligations but participated in the formation of requirements for land and training plots. At the beginning of the project, the Pryvilnenska community allocated 0.3 hectares of land for the training and research process, on which planting work was already underway in 2023. Private partners provided the community with a tractor and equipment for it. More than 15 hectares were certified under the PPP project for the cultivation of organic berries, namely raspberries. In 2023, 10 tonnes of berries were harvested. It is worth noting that between 2022 and 2023, Ukrainian companies involved in raspberry exports increased their exports of frozen goods by 29%, reaching a record 40,600 tonnes per year. In other words, the implementation of the project "Development of organic berry growing in the territorial communities of the Rivne region" simultaneously provided Ukrainian enterprises exporting frozen products with the opportunity to meet market demand.

Along with berry cultivation, the project provided for the construction of a quick-freezing plant with a capacity of 80 tons per year to create added value. As a result of this project, not only has the infrastructure been improved and training provided to the population on growing organic berries, but four jobs have been preserved through the creation of a training process, and 20 new jobs have been created in a new workshop based in the old vegetable factory in the village of Ozhyn, 10 km from the berry plot. The goal was to create jobs specifically in rural areas for women and young people. The total budget for the project was 384,370 CHF, of which 100,000 CHF was invested by OT4D. RSN-Trade LLC further marketed the berries in the EU (Shor, 2024). During the implementation of the project, the financial capacity of the ATCs participating in the PPP agreement changed (Fig. 1).

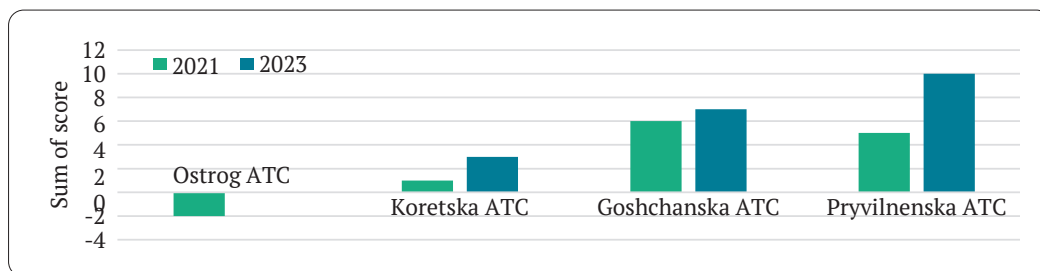


Figure 1. Change in the financial capacity of ATCs in the Rivne region for the period 2021-2023 that participated in the PPP project "Development of organic berry farming in territorial communities of Rivne region"

Source: compiled based on data from Decentralization (2024)

Figure 1 demonstrates that the financial capacity indicators of the Ostroh and Koretska ATCs in 2023 increased by 2 points compared to 2021, before the start of the PPP implementation. The financial capacity of the Hoshcha ATC for 2021-2023, i.e., after the implementation of the PPP project, increased by 1 point, while that of the Pryvilnenska community increased by 5 points. It is also worth noting other determinants that could have affected the financial capacity of the four communities analysed for

the period 2021-2023, but in general, there is a tendency for the indicator to increase after the implementation of the PPP project. To show in more detail the relationship between the financial results of communities and the activities of their business partners, it is useful to refer to a comparative analysis (Table 3). It shows that the impact of PPP was not limited to an increase in the financial capacity index but had a broader economic and social effect for both parties to the cooperation.

Table 3. Comparative analysis of the financial capacity of communities and the performance of PPP participants in the Rivne region

Community	Partner company	Key community indicators (2021-2023)	Key performance indicators of the enterprise (2021-2023)	Mutual effect of PPP
Koretsk	RSN-Trade LLC	<ul style="list-style-type: none"> Change in financial capacity: Score +2 Capital community investments: 1.8 million UAH (infrastructure upgrades, land preparation) 	<ul style="list-style-type: none"> Income: +12% Investments in the project: 2.5 million UAH Return on sales: 15% 	<ul style="list-style-type: none"> 8 new jobs were created Increase in local budget revenues by 1.2 million UAH
Goshchansk	Polissya Organic AGRO SFG	<ul style="list-style-type: none"> Change in financial capacity: Score +1 Volume of alternative resources attracted: 1.1 million UAH (grant funding) 	<ul style="list-style-type: none"> Investments: 1.6 million UAH (purchase of seedlings, equipment) Expansion of sales markets: access to the GoodWine and EkoLavka networks 	<ul style="list-style-type: none"> Increase in tax revenues by 0.9 million UAH Social impact: training of 60 community members
Ostrog	Ostrog Agro LLC	<ul style="list-style-type: none"> Change in financial capacity: Score +2 Capital expenditures: 2.3 thousand UAH/resident 	<ul style="list-style-type: none"> Income: +10% Optimisation of cost structure (7% reduction in production costs) 	<ul style="list-style-type: none"> Infrastructure development (road to the logistics centre) 12 new jobs were created
Pryvilnensk	Organic Berry FG	<ul style="list-style-type: none"> Change in financial capacity: Score +5 Budget implementation: 103% 	<ul style="list-style-type: none"> Harvested crop: 10 tonnes of raspberries (2023) Investments in the freezing plant: 3.8 million UAH 	<ul style="list-style-type: none"> 20 new jobs were created Equalisation of community income through new tax revenues

Source: compiled by the author based on data of Decentralisation (2025a), K. Shor (2024)

An analysis of the data presented in Table 3 demonstrates a more detailed assessment of the mutual influence of communities and enterprises within the framework of PPP implementation in the Rivne region. A comparison of indicators reveals a clear correlation between the investment activity of partner enterprises and the growth of financial capacity of communities. In the Korets community, cooperation with RSN-Trade LLC demonstrates a balanced effect: the community made capital investments of UAH 1.8 million in infrastructure modernisation and land preparation, which contributed to a 2-point increase in financial capacity. At the same time, the company increased its profitability by 12% and invested UAH 2.5 million in the project, achieving a return on sales of 15%. This partnership resulted in the creation of 8 new jobs and an increase in local budget revenues by UAH 1.2 million, highlighting the mutual benefits of financial integration. In the Goshcha community, cooperation with Polissya Organic AGRO SFG demonstrated that even moderate community investments and the attraction of grant resources in the amount of UAH 1.1 million contribute to increased financial capacity (+1 point). By investing 1.6 million UAH in the purchase of seedlings and equipment, the enterprise was able to expand its sales markets by entering the GoodWine and EkoLavka chains. The mutual effect was manifested in an increase in tax revenues by UAH 0.9 million and the training of 60 community residents, which creates long-term social capital.

For the Ostroh community, cooperation with Ostrog Agro LLC highlights the importance of capital expenditure per capita (2,300 UAH/capita) as a mechanism for increasing financial capacity (+2 points). The company optimised its cost structure, reducing production costs by

7% and increasing profitability by 10%. The integration resulted in the creation of 12 new jobs and the development of road infrastructure, which improves logistical accessibility for businesses. The Privilnenska community and Organic Berry FG are the most notable examples of mutual benefit: the community increased its financial capacity by 5 points and exceeded its budget (103%), while the company invested UAH 3.8 million in a freezing facility, harvesting 10 tonnes of raspberries. The partnership created 20 new jobs and levelled the community's income through new tax revenues, while creating opportunities for added value and a stable market for the company. Thus, a comparative analysis shows that the implementation of PPP in the Rivne region provides a synergistic effect: communities receive infrastructure improvements and additional budget revenues, while enterprises gain profitability, investment efficiency, cost-effectiveness and access to new markets. This approach demonstrates the practical feasibility of implementing a hybrid PPP model in conditions of limited budget resources.

In the context of the effectiveness of implementing the hybrid form of PPP in communities in the Rivne region and considering all the advantages of the hybrid PPP model for businesses and communities, as presented in Table 3, it is possible to conclude that two forms of this model are appropriate for implementation in Ukrainian ATCs: "design-build-finance-operate" (DBFO) and "design-build-operate" (DBO). The difference between these models lies in the practical implementation of the stages, as indicated by the name of the model itself (Feghaly *et al.*, 2021; Modi *et al.*, 2022). In the DBFO model, the three stages, namely design, construction and operation, are conducted in practice

by a private partner, who also finances the fourth stage. In this case, the community does not participate in the initial financing, but formulates project requirements and provides partial financing only after the project has been implemented. In the DBO model, the two stages, namely design and construction, are financed by the community, while the operation is conducted by a private partner (Ruiters & Amadi-Echendu, 2022). Therefore, the higher the level of financial capacity of the community, the more appropriate it is to implement DBO. Therefore, in the selection of one of the two forms of the hybrid PPP model, Ukrainian communities should rely on their level of financial capacity. Based on official statistics on the financial capacity of ATCs across Ukraine, it is possible to conclude that in 2024, 70.1% of ATCs out of the total number of communities in the country had a high, optimal or satisfactory level of

financial capacity. Specifically, 456 Ukrainian ATCs had a high level of financial capacity, 284 had an optimal level, and 242 had a satisfactory level. At the same time, 29.9% of ATCs had a low and critical level of financial capacity. Specifically, 218 ATCs in Ukraine had a low level of financial capacity as of 2024, and 131 ATCs had a critical level (Decentralisation, 2025b). Therefore, recommendations on the feasibility of implementing one of the two forms of the hybrid PPP model depend precisely on the financial capacity of Ukrainian communities. It is not advisable to implement DBO in 29.9% of communities that had low and critical levels of financial capacity in 2024. However, it is worth highlighting DBFO as a form of hybrid PPP model. The distribution of ATCs by the advisability of implementing hybrid PPP models by region of Ukraine based on ATC financial capacity indicators for 2024 is shown in Figure 2.

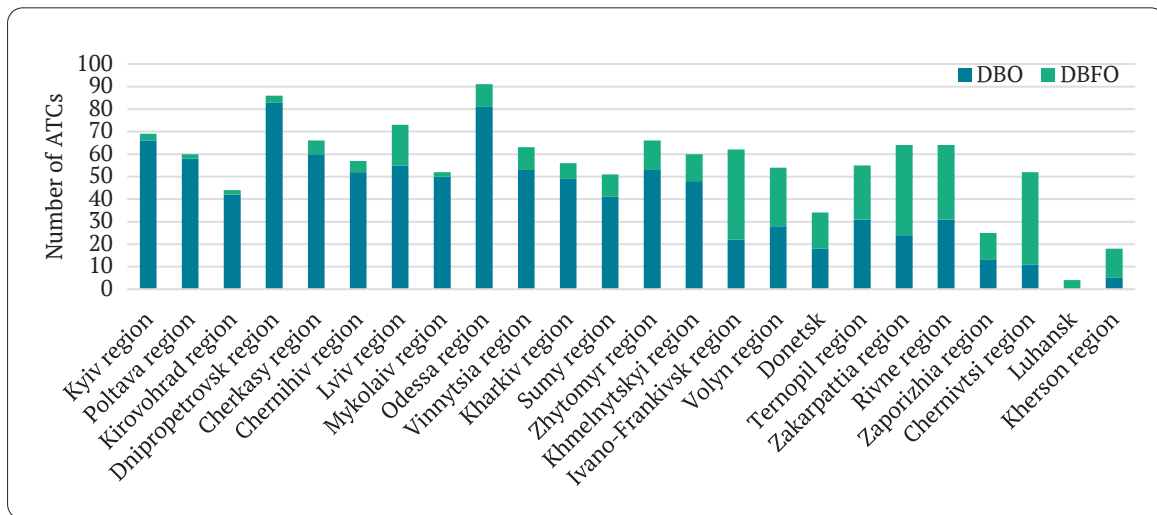


Figure 2. Distribution of ATCs by the feasibility of implementing hybrid PPP models across regions of Ukraine based on ATC financial capacity indicators for 2024

Note: DBO implementation is applied to ATCs with average and above average financial capacity, while DBFO is applied to ATCs with low or critical financial capacity

Source: compiled by the author based on Decentralisation (2025b)

Analysing the total number of ATCs in Ukraine by financial capacity by region, as shown in Figure 3, and the feasibility of implementing DBO or DBFO, the following conclusions can be drawn. As of 2024, all 69 ATCs in the Kyiv region had a financial capacity ranging from satisfactory to high. Therefore, all 69 ATCs in the Kyiv region should implement DBO. During the same period in the Luhansk region, all 4 ATCs had low and critical levels of financial capacity, so it is advisable to implement the DBFO form of the hybrid PPP model in such communities. In all other regions of Ukraine, there are several types of ATCs with levels of financial capacity ranging from high to critical. Therefore, based on the analysis of the financial capacity indicator for 2024, it can be concluded that DBO is advisable for 96.7% ATCs in Poltava region, 96.5% of ATCs in Dnipropetrovsk region, 95.9% of ATCs in Kirovohrad region, 93.9% of ATCs in Cherkasy region, 91.3% of ATCs in Chernihiv and Lviv regions, 89.1% of the ATCs in the Odesa

region, 87.5% of the ATCs in the Kharkiv region, 86.8% of the ATCs in the Mykolaiv region, 85.7% of the ATCs in the Sumy region, 84.1% of the ATCs in the Vinnitsia region, 80.3% of the ATCs in the Zhytomyr region, and 79.9% of the ATCs in the Khmelnytskyi region. Accordingly, DBFO is appropriate for implementation in 3.3% of ATCs in Poltava region, 3.5% of ATCs in Dnipropetrovsk region, 3.1% of ATCs in Kirovohrad region, 6.1% of ATCs in Cherkasy region, 8.7% of ATCs in Chernihiv and Lviv regions, 10.9% of ATCs in Odesa region, 12.5% of ATCs in Kharkiv region, 13.2% of ATCs in Mykolaiv region, 14.3% of ATCs in Sumy region, 15.9% of ATCs in Vinnitsia region, 19.7% of ATCs in Zhytomyr region, and 20.1% of ATCs in Khmelnytskyi region. The financial capacity of ATCs in other regions is significantly lower, which also requires the implementation of DBO, but to a lesser extent, namely: 56.3% of ATCs in the Ternopil region, 52% of ATCs in the Zaporizhzhia region, 52.9% of ATCs in the Donetsk region, 51.9% of ATCs

in the Volyn region, 48.5% in Rivne region, 36.9% of ATCs in Zakarpattia region, 35.5% of ATCs in Ivano-Frankivsk region, 21.1% of ATCs in Chernivtsi region and 27.6% of ATCs in Kherson region. Accordingly, DBFO is feasible for implementation for 43.7% of ATCs in Ternopil region, 48% of ATCs in Zaporizhzhia region, 47.1% of ATCs in Donetsk region, 48.1% of ATCs in Volyn region, 51.5% of ATCs in Rivne region, 63.1% of ATCs in Zakarpattia region, 64.5% of ATCs in Ivano-Frankivsk region, 78.9% of ATCs in Chernivtsi region, and 72.4% of ATCs in Kherson region. Thus, there is a general trend towards the advisability of implementing DBO rather than DBFO throughout Ukraine.

However, the DBFO model enables local authorities to improve infrastructure and transfer most of the risks to a private partner. At the same time, the company can implement large-scale projects with a long-term perspective, which provides a steady income. Therefore, the DBO model provides the following opportunities for local authorities: control over the financial resources of the project with minimal interference in the design and management process, and high-quality projects due to competition between private partners in the market. For companies, the advantages are lower risks than in DBFO and guaranteed profitability (Ruiters & Amadi-Echendu, 2022). Therefore, the choice between DBO and DBFO among Ukrainian ATCs depends on the type of project, the duration of the hybrid PPP contract, the distribution and transfer of risks, the established requirements, etc. However, preferences for the implementation of DBO or DBFO will have positive consequences for both community development and the private partner.

Discussion

Based on an analysis of the performance indicators of the ATC revenue plan across Ukraine and the average income per ATC resident across the country, the average level of expenditure per resident of the ATC, the ratio of tax and non-tax revenues to local budgets, as well as the indicators of the share of capital expenditures of Ukrainian communities on average across the country, the study determined that for Ukrainian ATCs, attracting alternative sources of funding is not just an advantage, but a necessity. Since approximately 30% of ATCs out of the total number of Ukrainian communities are financially weak. The presence of financially weak ATCs is characteristic of all regions of the country, except for Kyiv, excluding the temporarily occupied and annexed Ukrainian territories as of 2024. The importance of strategic planning based on the evaluation of previous development programmes has been emphasised in academic research by O. Karyy *et al.* (2019), which provided a conceptual foundation for assessing the effectiveness of community development strategies.

The analysis concluded that it is feasible and advisable for Ukrainian ATCs to implement PPPs as one of the possible options for attracting alternative financing based on statistical indicators of the financial capacity of Ukrainian communities. Exploring the possibilities of PPPs in more detail, R. Osei-Kye *et al.* (2021) noted the possibility of building

homes for the elderly in villages. The effectiveness of PPPs for the development of Spanish transport infrastructure was confirmed by L. Garrido & J. Vassallo (2020). PPP is also appropriate for the development of schools, hospitals, railways, housing, and energy infrastructure, as highlighted by I. Akomea-Frimpong *et al.* (2024) and G. Pinilla-De La Cruz *et al.* (2022) in an analysis of alternative financing for infrastructure projects. These data partially confirm the results of this study regarding the feasibility of implementing PPPs in Ukraine in various areas of infrastructure restoration during the war. However, analysing the simplicity of implementing PPPs for infrastructure restoration, T. Mandiriza *et al.* (2021) determined that this form of alternative financing is more complex, as it is accompanied by a range of problems: mismatch between cost and quality, regulatory complexity and political interference. In their analysis of PPP implementation in China, S. Zhang *et al.* (2015) determined that problems can be avoided by simultaneously implementing institutional changes alongside PPP implementation. However, analysing the roles of PPP stakeholders, T. Mandiriza & D. Fourie (2023) found that companies are primarily interested in maximising profits, which slows down the implementation of PPPs.

As a result of researching the mechanisms of interaction between private partners and local authorities in community development, three PPP models were identified, namely municipal, private and hybrid models. By examining the possibility of implementing the three models in practice and comparing them with the Ukrainian reality in 2024, the study found that the municipal PPP model is not feasible for Ukrainian communities because, as the results of the thematic study showed, the main condition for the successful implementation of such a model was a high level of budgetary funding for communities. As of 2024, Ukraine's actual revenue collection correlated with planned targets and was close to the 2021 figure, i.e., to the pre-war period. In addition, during the period 2020-2024, Ukrainian communities managed to fulfil the plan for tax and non-tax revenues only within the range of 0.98-4.62 points. At the same time, the ratio of tax revenues to non-tax revenues, which was achieved according to the revised annual plan for 2022-2024, decreased by 0.06 points. Given these facts, it can be concluded that the fully municipal PPP model is not the most optimal option out of the three possible models.

The private model, effectively implemented in the thematic study, was not considered in detail for Ukrainian communities, since the main condition for its implementation is a developed financial market, which in Ukrainian reality is not highly developed and has many problematic issues that need to be addressed as a matter of priority. In the context of the Russian-Ukrainian war and the constant need to rebuild infrastructure, it is advisable to implement a hybrid PPP model in Ukrainian reality. The study determined that the implementation of PPP is possible in other areas of community development, not limited to infrastructure aspects. As shown by the experience of implementing

PPPs in the Korets, Hoscha, Ostroh and Pryvilne communities in the Rivne region, the implementation of PPPs affects not only the development of the infrastructure of the ATC but also the preservation and creation of jobs and the education of the population, which ultimately leads to an increase in the financial capacity of communities. Following the implementation of the hybrid PPP project "Development of organic berry farming in the territorial communities of Rivne region", the financial capacity of each of the participating communities increased from 1 to 5 points for 2021-2023. At the same time, RSN-Trade LLC has gained opportunities to ensure a steady supply of products for export, diversify product sales, invest in the development of community infrastructure, and enter new product markets.

Analysing the effectiveness of the hybrid PPP model, A. Sinkala *et al.* (2022) confirmed its effectiveness for the implementation of infrastructure projects. However, the researchers noted that the implementation of the hybrid PPP model is accompanied by a large number of institutional problems related to the processes of its approval in practice. T. Musekiwa *et al.* (2025) reached similar conclusions, noting that the lack of transparency and burdensome legal frameworks affect the joint management of the hybrid PPP model. Other scholars, such as O. Sebitlo *et al.* (2022), highlighted that the dominance of the state in the creation of strategic infrastructure and its politicisation directly affects the reduced use of PPP.

As determined, each partner enterprise is substantial in increasing profitability, return on investment, investment activity, and job creation. For example, RSN-Trade LLC invested about 2.5 million UAH, achieved a profitability of +12%, a return on sales of 15%, and created 8 new jobs; this had a direct financial impact on the community through an increase in local budget revenues of approximately UAH 1.2 million. Organic Berry FG invested more than UAH 3.8 million in a freezing plant, harvested raspberries, created 20 jobs, and the community received income equalisation and a budget surplus of 103%. Such results confirm that business within PPPs can be a driving force for economic impact when it has access to investment and an effective sales market. These results are confirmed in international literature. A. Kumar *et al.* (2022) found that in projects in India, the key factors for the profitability of PPP companies are the size of investments, the effective use of leverage, and the ability to attract innovative technologies.

The results of the study showed that the main criterion for the successful implementation of the hybrid model is the high financial capacity of the ATC in the case of DBO, or of the private partner in the case of DBFO. The analysis determined that for ATCs with high, optimal or satisfactory financial capacity, it is advisable to implement the DBO form, and for ATCs with low and critical financial capacity, the DBFO form. In the Ukrainian context, it is advisable to implement the DBFO and DBO forms of the hybrid PPP model. The analysis showed that, based on the 2024 indicators, it is advisable for ATCs with high financial capacity, of which there were 456 in Ukraine, to implement the DBO form of the

hybrid PPP model in practice. Similarly, it is advisable to implement the DBO form of the hybrid PPP model in practice for ATCs with an optimal level of financial capacity, of which there were 284 in Ukraine. It is advisable to implement the DBO form of the hybrid PPP model in practice for ATCs with a satisfactory level of financial capacity, of which there were 242 in Ukraine. For ATCs with low and critical levels of financial capacity as of 2024, of which there were 218 and 131 units in Ukraine, respectively, it is advisable to implement the DBFO form of the hybrid PPP model in practice. At the same time, information on occupied and annexed territories was not covered in these calculations.

Two forms of the PPP hybrid model ensure that communities can attract alternative financing for further community development, while private partners can increase their revenues and reduce investment risks. Analysing the possibility of small and medium-sized enterprises participating in the PPP model, I.K. Oyegbade *et al.* (2022) concluded that PPPs are appropriate between the state and small and medium-sized enterprises in both developed and developing countries, which confirms the results of this study. For the state, the benefits are expressed in encouraging entrepreneurship and stimulating sustainable economic growth in communities, and for enterprises, in easing the financial burden. At the same time, the valuation of the enterprise in this study was presented not in monetary terms, but through the structure of the financial burden through investments by both parties. In other words, the value is expressed in relative terms in the context of Ukrainian communities adopting international experience. These results are confirmed by the findings of a study by P. Esposito and S. Dicorato (2020), who, as a result of assessing the effectiveness of PPPs, proved that private partners are not limited to the goal of increasing profitability, but include the social significance of PPPs in their effectiveness, responding to the needs of the population of a particular community.

Thus, the results of the study show that PPP not only provides access to additional financial resources for communities but also stimulates the activity of private partners in the field of investment and innovation. At the same time, to increase the effectiveness of such cooperation, it is necessary to improve legal mechanisms, institutional support, and minimise political risks. Practical examples of PPP implementation in the Rivne region prove that this model can provide synergistic effects for both parties, combining economic benefits with social significance. The results obtained form the basis for developing specific conclusions and recommendations on scaling PPP in the context of Ukraine's post-war recovery.

Conclusions

The results of the study indicate that although the average level of general fund revenues per capita in Ukrainian ATCs increased by 57.34% during the period 2020-2024, the level of planned revenue execution for the same period remained low. Only in 2024 did the fulfilment of planned local budget revenues reach 100.72%, which was close to the 2021 figure,

i.e., the pre-war period. In terms of the ratio of tax and non-tax revenues for 2020-2024, tax revenues prevailed until 2022, within the range of 0.99-1.05. Starting in 2023, non-tax revenues were implemented in ATCs across the country more efficiently than tax revenues. The share of capital expenditures per capita in communities in 2020-2024 decreased by 2.43% on average across the country. These statistics indicate the financial capacity of communities in Ukraine, 70.1% of which had an average or higher level of this indicator. Therefore, the involvement of PPPs is advisable for Ukrainian ATCs. During the period 2020-2024, total borrowing by local budgets in Ukraine decreased by 44.9% with an increase in external borrowing by more than 7 times, while the level of PPP implementation remained low.

The study determined that a hybrid PPP model would be appropriate for implementation in Ukraine in 2025. Based on the successful experience of implementing a hybrid form of PPP in the Korets, Hoscha, Ostroh and Pryvilna communities in the Rivne region, the study determined that such actions lead to an improvement in the financial capacity of communities. For enterprises, the hybrid PPP model provides access to new markets and satisfies market demand, diversifies sales and investments in infrastructure. Therefore, hybrid PPP models such as DBO and DBFO are practical. Given the differences between the models, the study concluded that ATCs with high, optimal or satisfactory financial capacity, as opposed to ATCs with critical and low financial capacity, should implement different forms of hybrid PPP models. DBO is recommended for communities

with satisfactory financial capacity and above, which, as of 2024, accounted for more than 70% in Ukraine. DBFO is recommended for communities with low financial capacity and below, which, as of 2024, accounted for about 30% in Ukraine. By implementing such forms of alternative financing, the community can develop infrastructure and transfer financial risks, preserve and create new jobs, in addition to attracting financing, while private partners can increase their revenues, as the experience of ATCs has shown.

Given the diversity of existing forms and models of alternative financing, the models and forms identified in this study do not cover the full range of practices, which is a limitation of this study. Therefore, it would be advisable to conduct a follow-up study focusing on a systematic analysis and comparison of successful practices, identifying opportunities and/or barriers for implementation in the Ukrainian context. Such results would help to identify possible gaps in this study and determine more possible approaches that communities with different levels of financial capacity could apply in practice in Ukraine.

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Conflict of Interest

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Фінансова інтеграція бізнесу та об'єднаних територіальних громад: механізми залучення альтернативного фінансування та оцінка вартості на прикладі діяльності підприємств

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Анотація. Метою дослідження була оцінка ефективності реалізації програм державно-приватного партнерства для українських громад та підприємств. Для досягнення мети був використаний метод сегментованого аналізу офіційних статистичних показників, що відображають фінансовий потенціал українських громад за період 2020-2024 років. Визначено узагальнену тенденцію низького виконання місцевих бюджетів, що не перевищувала за досліджуваний період показника 100,72 %. В результаті аналізу встановлено, що 70,1 % об'єднаних територіальних громад (ОТГ) в Україні є фінансово спроможними. Було визначено, що гібридна форма державно-приватного партнерства є найбільш перспективним механізмом альтернативного фінансування в українських умовах. Участь бізнесу у таких проектах продемонструвала вагомий економічний ефект: підприємства-партнери інвестували від 1,6 до 3,8 млн грн у розвиток місцевої інфраструктури та виробничих потужностей, досягаючи прибутковості на рівні 10-12 % та рентабельності продажів до 15 %. Окрім того, бізнес отримав розширення ринків збуту (вихід на національні торговельні мережі), оптимізацію витрат і зростання доданої вартості продукції. Для громад це означало підвищення індексу фінансової спроможності від 1 до 5 балів, перевиконання бюджетів до 103 % та створення 8-20 нових робочих місць, що забезпечило стабільне зростання податкових надходжень і довгостроковий соціально-економічний ефект. Для громад із низьким та критичним рівнем фінансової спроможності (29,9 % із загальної кількості українських громад) запропоноване впровадження форми гібридної моделі, за якої головне фінансування беруть на себе приватні партнери. Результати дослідження можуть бути використані органами місцевого самоврядування України для формування ефективних моделей фінансової інтеграції бізнесу у громаду

Ключові слова: органи місцевого самоврядування; приватні партнери; державно-приватне партнерство; гібридна модель; інфраструктура

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Impact of European integration processes on the development of tourism potential in Ukraine

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Abstract. The study aimed to measure the impact of European integration on the recovery and modernisation of tourism in Ukraine. The methodology included an analysis of statistical data on tax revenues from the tourism sector for the period 2021 to 2024, a summary of EU grant programmes (Interreg, Creative Europe, EU4Culture) and the study of official support programmes in the western (Lviv, Ivano-Frankivsk, Zakarpattia, Ternopil) and central (Kyiv, Vinnytsia, Cherkasy, Zhytomyr) regions of Ukraine. The results showed that in the pre-war period from 2014 to 2021, European integration contributed to the harmonisation of standards and the attraction of investment, while after 2022 the focus shifted to preserving and restoring the industry. EU programmes combine infrastructure projects and cultural initiatives, providing stability and prospects. Tax revenues fell sharply in 2022 (UAH 1,551 million) but rose to UAH 2,938 million in 2024, with a structural strengthening of the hotel sector. State support in 2024 and 2025 became a key factor in preserving infrastructure: most funding is concentrated in the Lviv and Zakarpattia regions, while the Kyiv, Vinnytsia and Ivano-Frankivsk regions received moderate support with moderate results, and the Zhytomyr, Cherkasy and Ternopil regions are characterised by limited development opportunities. This has created a disproportionate development model, with some regions forming sustainable tourism clusters, while others remain dependent on additional support mechanisms. Scenario analysis has shown that the most likely scenario is a realistic one involving medium levels of funding and the implementation of cross-border and cultural projects. The results prove that the tourism sector remains stable thanks to international support, state funding and domestic demand, and the practical significance lies in identifying mechanisms that can be used to restore tourism infrastructure and increase its competitiveness in Ukraine

Keywords: grant programmes; tax revenues; infrastructure projects; recovery scenarios; martial law; state funding

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Introduction

The integration processes of the 2020s are defining new vectors for the development of national economies, and tourism is emerging as one of the most dynamic sectors in this context. For Ukraine, which is intensifying cooperation with the EU, it is necessary to improve tourism potential through access to financial instruments, infrastructure modernisation and harmonisation of standards. At the same time, the war has caused significant losses, which require recovery based on European principles and support from grant programmes, while analysis of European integration makes it possible to assess the prospects for increasing competitiveness and integration into the global market. The need to study the impact of European integration processes on tourism potential is determined by the need to restore and modernise the industry, which has become one of the most vulnerable sectors of the economy in the context of martial law and whose further development depends on external support, investment and alignment with EU standards. Research into this issue is relevant for the identification of the optimal mechanisms for attracting grant programmes, increasing the competitiveness of regions, and developing a strategy for the restoration of tourism infrastructure based on EU best practices.

G. Omelchak (2023) emphasised the need for post-war restoration of tourism based on innovative technologies and digital solutions in Ukraine. The importance of infrastructure modernisation, IT and cybersecurity development, as well as the establishment of cooperation with global tourism organisations, is highlighted. V.A. Khudavardieva (2022) analysed trends in the development of international tourism and the impact of integration processes on the dynamics of tourist flows, emphasising the role of cooperation with European countries in strengthening Ukraine's tourism industry, but stressing the need to consider external factors that limit the effectiveness of this development. L. Karpenko *et al.* (2025) analysed the state of tourism in Ukraine in the context of international cooperation, identified barriers and potential, noted the lag behind global indicators, and proved that the integration of tourism and cultural projects can provide a synergistic effect and strengthen the country's position in the international market. P. Figini & R. Patuelli (2022) developed a methodology for assessing the direct and indirect contribution of tourism to production, value added, and employment based on satellite accounts and input-output tables, revealing differences in the role of tourism in the gross domestic product (GDP) of EU countries and emphasising its importance for analysing the impact of demand fluctuations on income and employment. G. Igoumenakis *et al.* (2024) found that tourism in developing countries can provide income, jobs and investment, but at the same time creates environmental and social risks, while remaining a potential catalyst for sustainable development.

In turn, W. Xie *et al.* (2021) analysed tourism economic ties between EU countries from 1995 to 2018, highlighting the growth of integration and stability of interaction,

thereby noting that European integration processes contribute to the formation of sustainable models in the field of tourism, the experience of which may be useful for Ukraine. F. Beha (2023) established that in 27 EU countries between 2008 and 2021, the quality of institutions had a positive impact on the development of tourism, where the main factors were government efficiency, political stability, the rule of law and accountability, with additional factors including economic growth, education levels, environmental conditions and foreign trade, making institutional quality the basis for competitiveness and sustainable development in the industry. B.Z. Filipiak *et al.* (2023) found that tourism combines economic benefits with environmental risks, while digitalisation and e-commerce increase business efficiency and consumer experience, confirming the link of the industry to GDP and sustainable development and outlining the role of digital and sustainability factors in the modernisation of the tourism sector in the context of European integration. X. Font *et al.* (2023) created proprietary assessment systems, but the expectations of the European Commission regarding policy transformation were not fully met, indicating the complexity of adapting European initiatives to different management contexts. F.F. Adedoyin *et al.* (2022) determined that the growth of tourist arrivals and air transport in high-income countries correlates positively with GDP, but the effect weakens when institutional quality is low, which emphasises the decisive role of institutions in transforming tourism into a factor of sustainable development.

Existing research on European integration and tourism confirms the growing ties between EU countries and the importance of institutional quality, digitalisation and sustainable development, but practical mechanisms for their integration into national strategies remain insufficiently explored. Most studies are based on general European models, while the issues of adapting reforms, digital solutions and environmental standards to the specific conditions of individual countries are only partially addressed, which necessitates a more in-depth analysis for the modernisation of tourism in the context of wartime and post-war transformations.

The study aimed to assess the impact of EU integration on the recovery and modernisation of the Ukrainian tourism sector. To achieve this goal, the following tasks were performed: to investigate the impact of European integration (EU grant programmes and institutional instruments) on the formation and modernisation of Ukraine's tourism potential; to analyse statistical data on the actual losses of Ukraine's tourism industry under martial law; to determine the role of state support in restoring and stimulating Ukraine's tourism potential at the regional level (Kyiv, Cherkasy, Vinnytsia, Zhytomyr, Lviv, Ternopil, Ivano-Frankivsk, and Zakarpattia regions).

Materials and Methods

To study the impact of European integration processes on Ukraine's tourism sector, a phased analysis of EU

regulations and programmes from 2014 to 2025 was conducted. At the first stage, two time periods were identified: pre-war (2014 to 2021) and wartime (2022 to 2025), which reflected the shift in strategic priorities from harmonisation of legislation and liberalisation of transport links to recovery and stabilisation measures. At the second stage, key agreements and programmes were selected, including the EU-Ukraine Association Agreement (2016), the Visa-Free Regime (2017), and the Common Aviation Area Agreement (European Commission, 2021). The cross-border cooperation instruments of the Interreg programme (European Commission, 2014; European Environment Agency, 2025) were analysed separately. The cultural programmes of Creative Europe (European Commission, 2022) were examined. The instruments of support during the war period, Ukraine Facility and solidarity packages (European Commission, 2025a), were also considered. The initiatives of the European Investment Bank (2025a; 2025b) were analysed separately. The analysis of these documents revealed the EU's assistance and assessed its impact on infrastructure recovery, sector sustainability, and gradual integration into the European space.

To study the impact of EU financial support on the development of Ukraine's tourism potential, an analysis was conducted of grant programmes and funds covering Programme Interreg NEXT "Poland-Ukraine 2021-2027" (2021) and Programme Interreg VI-A NEXT "Hungary-Slovakia-Romania-Ukraine" (2025). The Programme Interreg VI-B NEXT "Black Sea Basin" (2021) and the Danube Region Programme 2021-2027 (2021) were analysed separately. The EU4Culture initiative (2021), the Alliance for the Protection of Heritage in Conflict Areas fund (2022) and bilateral contributions from EU member states (Ministry of Foreign Affairs and International Cooperation of Italy, 2024) were also considered. The study systematises the volumes of funding, areas of impact and geographical coverage, and examines examples of implemented projects, including the reconstruction of the narrow-gauge railway "TrainToNature" (Programme in numbers..., 2025), and the construction of the Lviv-Poland Eurotrack (Ministry for Development of Communities and Territories of Ukraine, 2025). Grant initiatives for the preservation of cultural heritage were analysed separately, including the Alliance for the Protection of Heritage in Conflict Areas (2022) and the European Heritage Hub (2024). This made it possible to assess not only the quantitative parameters of support, but also the qualitative aspects related to the modernisation of infrastructure and the integration of Ukraine into the European tourist space.

To assess the impact of the full-scale invasion of 2022 on Ukraine's tourism sector from 2021 to 2024, the dynamics of tax revenues and the number of taxpayers were analysed based on data from the State Agency for Tourism Development of Ukraine (2024a). The study included a comparison of total revenues, distribution by legal entities and individuals, as well as an analysis by type of activity: hotels, tour operators, agencies and short-term accommodation

facilities, which identified the scale of losses and structural shifts in the tax base of the tourism industry.

To assess the role of state support in developing tourism potential, an analysis of budget allocations and tax revenues was conducted in eight regions of Ukraine, where the source base consisted of official tourism development programmes for 2021 to 2025 adopted in Kyiv (Program of Socio-Economic..., 2024), Cherkasy (Tourism Development Programme..., 2021a), and Vinnytsia regions (Tourism Development Programme..., 2020). Separately, programmes for the Zhytomyr (Action Plan for 2024..., 2023) and Lviv regions (Support for military..., 2024) were addressed. Additionally, documents from the Ternopil (Tourism Development Programme..., 2021b), Ivano-Frankivsk (About the regional..., 2024) and Zakarpattia regions (Programme of Tourism..., 2023) were used. The comparison was made based on the volumes of funding, priority areas of implemented measures and tax revenues from accommodation facilities from 2021 to 2024.

To model the potential for restoring Ukraine's tourism potential from 2025 to 2027, a scenario-based approach was used, based on an analysis of potential funding from EU programmes (Interreg, Creative Europe, EU4Business) and the level of co-financing from the regions. For each scenario, the indicative investment volume, possible economic and social effects, and key threats related to military actions, institutional instability, and limited investment attractiveness were identified.

Results

Analysing the impact of European integration processes on the development of Ukraine's tourism potential, it is necessary to distinguish between two periods: pre-war and wartime. The first covers the period from 2014 to 2021 and is characterised by gradual rapprochement with the EU, harmonisation of the regulatory framework, expansion of cross-border cooperation programmes and liberalisation of transport links. The second period began in 2022 and continues until 2025 and is characterised by a reorientation of integration mechanisms towards support in wartime conditions, infrastructure restoration and cultural heritage preservation. Table 1 lists the key agreements and programmes that have shaped the development of the tourism sector during these periods.

An analysis of the agreements and programmes presented by the EU demonstrates a consistent shift in focus in the development of Ukraine's tourism potential. In the pre-war period (2014 to 2021), the focus was on institutional alignment with EU standards, the creation of a common legal framework, and integration into the European transport and cultural space (European Commission, 2014). It was the EU-Ukraine Association Agreement (2016) and agreements in the field of aviation (European Commission, 2021) that were decisive in consolidating Ukraine's position in the European tourism market. They provided the preconditions for increased mobility, higher standards and the gradual formation of a competitive environment in

the field of tourism. Since 2022, the focus of European integration policy has shifted towards support and recovery. The main financial instruments have become EU solidarity packages and the Ukraine Facility (European Commission, 2025a). The cultural initiatives of the Creative Europe programme have been considered separately (European Commission, 2022; Yemets, 2024). Projects of the European

Investment Bank (2025a; 2025b) aimed at preserving and reconstructing tourism infrastructure have also been analysed. Together, these measures indicate a transformation of European integration processes from a strategy of gradual development to a model of stabilisation and reconstruction, which ensures the short-term preservation of tourism potential and creates conditions for its long-term recovery.

Table 1. European integration agreements and programmes to support Ukrainian tourism potential in the pre-war and war periods (from 2014 to 2025)

Period	Name of agreement/programme	Year	Main provisions	Significance for the development of tourism potential
Pre-war period (2014 to 2021)	Ukraine-EU Association Agreement	2014	Legislative approximation, integration into the services, transport and culture markets, and opening access to EU financial assistance	Harmonisation of tourism service standards, creation of conditions for investment, and expansion of international cooperation
	Interreg cross-border cooperation programmes and European Neighbourhood Instrument (ENI CBC) cross-border cooperation programmes	2014-2020	Development of border infrastructure, cultural routes and joint initiatives with EU countries	Strengthening the tourist appeal of border regions, the growing role of cultural and eco-tourism
	Introduction of a visa-free regime with the EU	2017	Visa liberalisation, simplification of travel for Ukrainian citizens	Improvement of mobility, stimulation of outbound and inbound tourism, and expansion of contacts with EU countries.
	EU Creative Europe Programme for Ukraine	2021	Access to European programmes supporting culture and creative industries is limited.	Supporting cultural heritage as the basis for tourism branding, and financing cultural events
	Agreement on a Common Aviation Area ("Open Skies") between Ukraine and the EU	2021	Liberalisation of the aviation market, creating new routes, and integration of safety standards	Improved transport accessibility, cheaper air travel, and increased tourist flows from the EU
War period (2022 to 2025)	EU financial assistance packages "Solidarity with Ukraine"	2022	Funding for the restoration of infrastructure and cultural sites	Preservation and maintenance of tourist attractions in crisis conditions
	Interreg NEXT Poland-Ukraine Cross-Border Cooperation Programme 2021-2027	2022-2027	Development of infrastructure, ecotourism, and cultural routes in border regions	Promoting sustainable development of border areas, supporting cross-border tourism
	The Creative Europe initiative: Cultural heritage for Ukraine	2023	Funding for the restoration and preservation of cultural heritage damaged by the full-scale invasion of 2022	Strengthening the cultural basis of tourism, restoring monuments as tourist attractions
	The EU's Ukraine Facility	2024-2027	50 billion EUR for infrastructure restoration, modernisation and investment	Reconstruction of tourist infrastructure
	Initiative: Special Competition "European Team for Cultural Heritage"/"Creative Europe"	2025	An additional 2 million EUR for cultural heritage preservation (a total of more than 50 million EUR from 2022 onwards)	Restoration of cultural centres and heritage sites
	European Investment Bank programme for the modernisation of railway border crossings	2025	50 million EUR for upgrading key railway crossings with EU countries	Facilitating cross-border tourism, reducing travel times, and improving accessibility of regions
	The Ukraine FIRST Infrastructure Reconstruction Initiative, with the participation of the European Investment Bank and the European Bank for Reconstruction and Development	2025	Initially, 30 million EUR for the restoration of key infrastructure facilities	Reconstruction of roads, public spaces and tourist attractions

Source: compiled by the authors based on Visa-Free Regime (2017), M. Yemets (2024), European Environment Agency (2025), European Commission (2025b)

European integration processes only create general conditions for the development of tourism, but their implementation depends on the amount of financial support

from the EU. Within the framework of its neighbourhood and regional development policy, the EU considers tourism to be a factor in economic growth, cultural integration

and cross-border cooperation. For Ukraine, EU grant programmes and funds are becoming a key instrument for developing tourism infrastructure and preserving cultural

heritage. Table 2 below summarises the main programmes that are directly relevant to the development of Ukraine's tourism potential.

Table 2. Key EU programmes for tourism in Ukraine for 2025

Program	Budget	Focus on tourism
Interreg NEXT Poland-Ukraine 2021-2027	EUR 262.56 million (tourism – EUR 3.87 million)	The programme addresses the development of cross-border tourism through the modernisation of cultural and tourist facilities, improving the accessibility of routes and integrating the shared historical and cultural heritage of the Polish-Ukrainian border region.
Interreg NEXT Hungary-Slovakia-Romania-Ukraine (HUSKROUA) 2021-2027	EUR 83 million (healthy and attractive border region – EUR 36.74 million)	Provides support for sustainable tourism in the Carpathian region, including the development of eco-tourism, the creation of themed routes, the restoration of monuments and the improvement of recreational infrastructure.
Interreg Black Sea Basin 2021-2027	EUR 72-94 million	The stimulation of entrepreneurship in the tourism sector, the promotion of the cultural heritage of the Black Sea region, and the organisation of cross-border cultural and tourism events are the primary focus.
Interreg Danube Region Programme 2021-2027	EUR 278.37 million	Prioritises the creation of joint tourism products in the Danube macro-region, the development of cultural clusters and the introduction of digital tools to increase the attractiveness of destinations.

Source: compiled by the authors based on Programme Interreg NEXT “Poland-Ukraine 2021-2027” (2021), Programme Interreg VI-B NEXT “Black Sea Basin” (2021), Programme Interreg VI-A NEXT “Hungary-Slovakia-Romania-Ukraine” (2025)

The programmes presented in the table demonstrate that the EU is developing a comprehensive system of support for tourism in Ukraine, combining various scales and areas of influence. Moreover, funding is not limited to the construction or renovation of facilities but is directed towards the creation of comprehensive solutions ranging from the development of local infrastructure and environmental practices to the creation of new tourism products and digital services (Danube Region Programme..., 2021). This demonstrates the desire to integrate Ukraine into the pan-European tourism space not as a peripheral partner, but as an active participant in regional networks.

However, EU funding for tourism development in Ukraine is not limited to large regional programmes such as Interreg. Specialised EU funds and initiatives focusing on cultural and creative components are also substantial. The funds that create the necessary cultural content for the future

growth of the tourism sector, ensuring not only material restoration but also the recreation of the identity of Ukrainian destinations. Table 3 summarises the main EU funds and related initiatives that will directly or indirectly influence the development of Ukraine's tourism potential in 2025.

The funds presented demonstrate that EU support in the field of tourism focuses primarily on the cultural dimension. While large programmes aim to make infrastructure changes, the funds focus on preserving heritage, developing creative industries and supporting cultural practices that shape the content of tourism products (EU-4Culture, 2021). Thus, EU funds and bilateral contributions from Member States create the basis for the restoration and modernisation of Ukraine's tourism potential not only through financial support, but also through the preservation and promotion of cultural identity, which is a key factor in attractiveness on the international tourism market.

Table 3. Key EU funds for tourism in Ukraine for 2025

Fund	Amount of funding	Main areas of support for tourism
EU4Culture	Total budget of 7.85 million euros (2021 to 2024). Over 1.5 million euros allocated to cultural strategies in Eastern Partnership cities, including Ukraine.	Funding for the development of cultural strategies, grants for artistic and creative projects that increase the tourist appeal of territories
Creative Europe	Distributes grants to cultural and creative initiatives, dozens of projects every year in Ukraine.	Support for cultural and creative industries, heritage protection, and the development of European cultural networks that form the basis of cultural tourism
Alliance for the Protection of Heritage in Conflict Areas	Since 2022, it has provided over 7.75 million USD to support Ukrainian museums, archives, and libraries in over 140 locations.	Emergency protection of cultural objects: packaging materials, building reinforcement, heritage preservation equipment; in the future, the Ukrainian Cultural Heritage Fund
Bilateral contributions from EU Member States	From hundreds of thousands to several million euros (for example, Italy allocated 500,000 EUR for the restoration of the cathedral in Odesa)	Restoration and preservation of iconic cultural heritage sites that are of high tourist value and symbolic significance

Source: compiled by the authors based on Alliance for the Protection of Heritage in Conflict Areas (2022), Ministry of Foreign Affairs and International Cooperation of Italy (2024)

Tourism infrastructure projects in Ukraine are implemented with the support of EU grant programmes and are aimed at improving accessibility, developing transport and preserving cultural heritage. A notable example is The Carpathian Narrow-Gauge Railways “TrainToNature” within Interreg NEXT Poland-Ukraine, which has been allocated approximately EUR 3.9 million for the reconstruction of the narrow-gauge railway, the creation of a museum in Vyhoda, a service centre in Poland, viewing platforms and cycle routes, integrating the Carpathians into European tourist routes (Programme in numbers..., 2025). Another strategic step was the EUR 76 million in EU funding under the Connecting Europe Facility for the construction of a European gauge railway between Lviv and the Polish border, which will provide a direct rail link to EU countries and increase tourist mobility (Ministry for Development of Communities and Territories of Ukraine, 2025). Such examples prove that transport and tourism infrastructure is a prerequisite for Ukraine’s integration into the European tourism space, while grant support contributes to the preservation of heritage, the creation of cultural routes and the marketing of regions, forming a unique identity for the territories.

The development of transport and tourism infrastructure is a key condition for Ukrainian integration into the European tourism space, but projects aimed at preserving cultural heritage and marketing regions that form the unique identity of territories remain an equally significant area of grant support. The largest donor in this area is the Alliance for the Protection of Heritage in Conflict Areas (2022), which invested over USD 7.75 million between 2022 and 2024 to support around 400 organisations in

more than 140 locations. Another example is the European Heritage Hub (2024) grants, where in 2024, EUR 250,000 was distributed among 14 projects, including Ukrainian organisations that received funding for the inventory and digitisation of monuments and educational activities. Emergency funding from the EU through DG EAC in the amount of EUR 2 million, aimed to protect museums and cultural collections in the early years of the full-scale invasion of 2022, was also substantial (European Commission, 2025b). Such initiatives, although less ambitious in scope, lay the groundwork for the restoration and integration of cultural heritage into Ukraine’s tourism sector. Marketing and branding projects aim to create a positive image of Ukrainian territories and integrate them into the European tourism space. Examples include CULT.ROUTE Thematic Route of Castles 2 (Launch of the..., 2025), which covers castles in Zakarpattia, Ivano-Frankivsk, Romania and Hungary and involves the creation of IT solutions for promotion and joint cultural events, as well as HICART II Carpathian Cultural Route (Hicart II project..., 2025), which brought together about 40 heritage sites and ensured their digital promotion. In addition, EU4Culture small grants (2023-2024) supported cultural festivals and local strategies in Odesa, Vinnytsia and Rivne, strengthening the cities’ brands and creating new tourist destinations.

The tourism sector is particularly sensitive to foreign policy and security challenges, and tax revenues are a key indicator of its real contribution to the budget and the scale of financial losses. An analysis of tax payment dynamics for 2021 to 2024 demonstrates the development trends and stability of the tourism industry (Fig. 1).

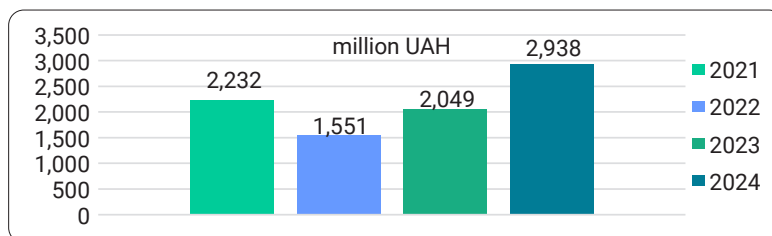


Figure 1. Taxes from the tourism sector to the Ukrainian budget for 2021 to 2024, million UAH

Source: compiled by the authors based on the State Agency for Tourism Development of Ukraine (2024a)

Significant fluctuations were identified, which directly correlate with the impact of martial law and general economic conditions. In 2021, revenues amounted to UAH 2,232 million, which can be considered a relatively stable pre-war level. In 2022, there was a sharp drop to UAH 1,551 million, reflecting the direct consequences of the full-scale invasion of 2022: a reduction in tourist flows, a decline in domestic demand and the virtual cessation of international tourism. In 2023, there was a partial recovery to UAH 2,049 million, indicating the adaptation of some businesses to the new conditions, the revitalisation of domestic tourism, and the development of alternative service formats. The highest value is recorded in 2024, at UAH 2,938 million, which even

exceeds the pre-war figure for 2021. This can be explained by both inflationary growth in the cost of services and tax rates, and by the reorientation of part of the population towards domestic travel in the context of restrictions on travel abroad.

Thus, the dynamics of tax revenues from the tourism sector show significant fluctuations, caused both by the direct consequences of the full-scale invasion of 2022 and by adaptation processes in domestic tourism. At the same time, for a more complete picture of the state of the industry, it is necessary to consider not only the volume of revenues but also the number of taxpayers, as this reflects the scale of entrepreneurial activity and the stability of the tax base in crisis conditions (Fig. 2).

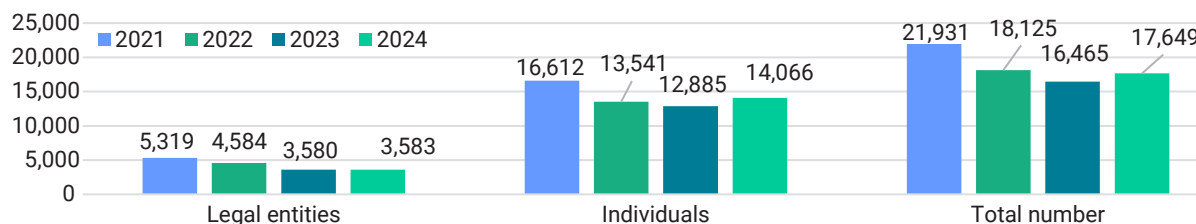


Figure 2. Number of taxes in Ukraine from 2021 to 2024

Source: compiled by the author based on the State Agency for Tourism Development of Ukraine (2024a)

During the period of martial law, the number of taxes in Ukraine was significantly reduced, which was reflected in a decrease in the total number of taxpayers from over 21,000 in 2021 to about 16,000 in 2023. The most noticeable decline was recorded among legal entities, whose number fell from more than 5,000 to less than 4,000, indicating the suspension or curtailment of activities of a significant portion of enterprises due to loss of access to markets, investment restrictions, and logistical complications. For individuals, the dynamics were relatively more stable, and in 2024, there was an increase to over 14,000, which can be explained by the adaptation processes of small businesses and the self-employed, through diversification of activities and transition to the digital

environment. Overall, in 2024, the number of taxpayers reached almost 18,000, indicating a gradual recovery of the tax base, although the figures remain below pre-war levels and reflect the high dependence of economic activity on military factors.

An analysis of tax revenues in the tourism sector is more revealing when broken down by individual types of activity, as this can identify the most resilient segments and those areas that suffered the greatest losses during the period of martial law. The distribution of taxes between hotels, tour operators and agencies, temporary accommodation facilities and other tourism businesses can assess the contribution of each segment to the tax base and track their ability to adapt to crisis conditions (Fig. 3).

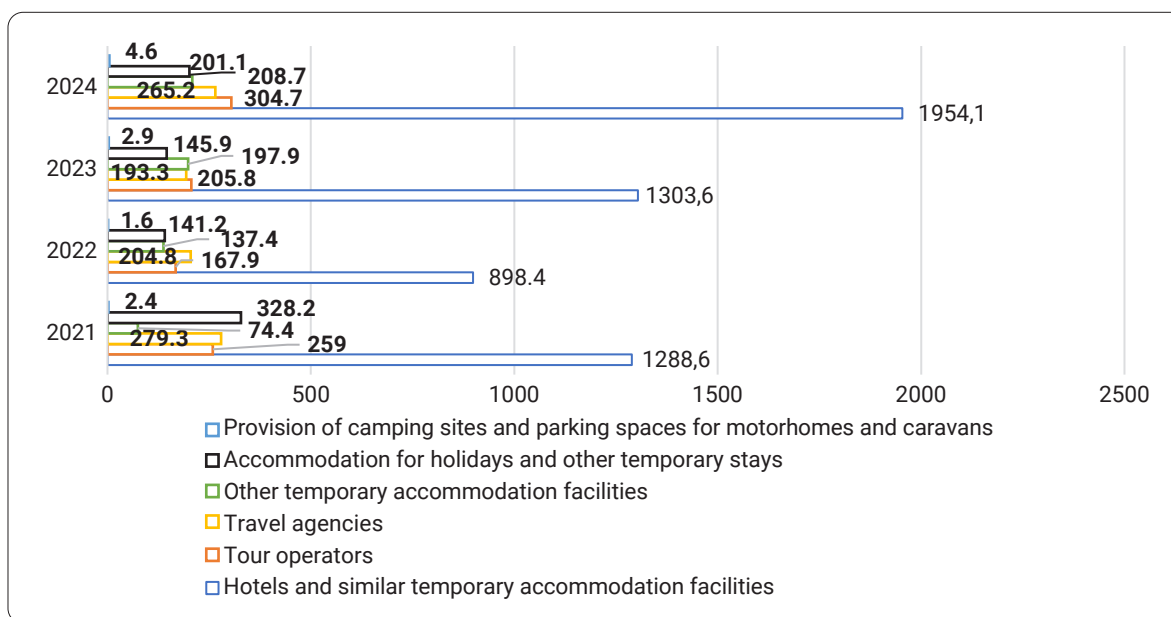


Figure 3. Tax revenues from each type of activity in Ukraine for 2021 to 2024

Source: compiled by the author based on the State Agency for Tourism Development of Ukraine (2024a)

An analysis of tax revenues from certain types of tourism activities from 2021 to 2024 makes it possible to specify the scale of actual losses in the industry under martial law. Hotels and similar temporary accommodation facilities proved to be the most resilient, but even this segment recorded a significant decline in 2022 compared to pre-war levels. The decline is explained by a reduction in tourist flows, the closure of some establishments and restrictions on

access for foreign tourists, while a partial recovery in 2023-2024 was due to growth in domestic demand and the use of hotel infrastructure for the needs of internally displaced persons. Overall, the dynamics of tax revenues indicate that Ukraine's tourism industry suffered significant losses in traditional segments during the war, while the relative stability of domestic tourism and temporary accommodation created the basis for partial compensation for fiscal losses.

A comparison of tax revenues by type of tourism activity in 2021 and 2024 reveals profound structural changes that have occurred under the influence of martial law. The

dynamics of the comparison between the pre-war and war periods clearly demonstrate the uneven impact of the crisis on different types of tourism businesses (Fig. 4).

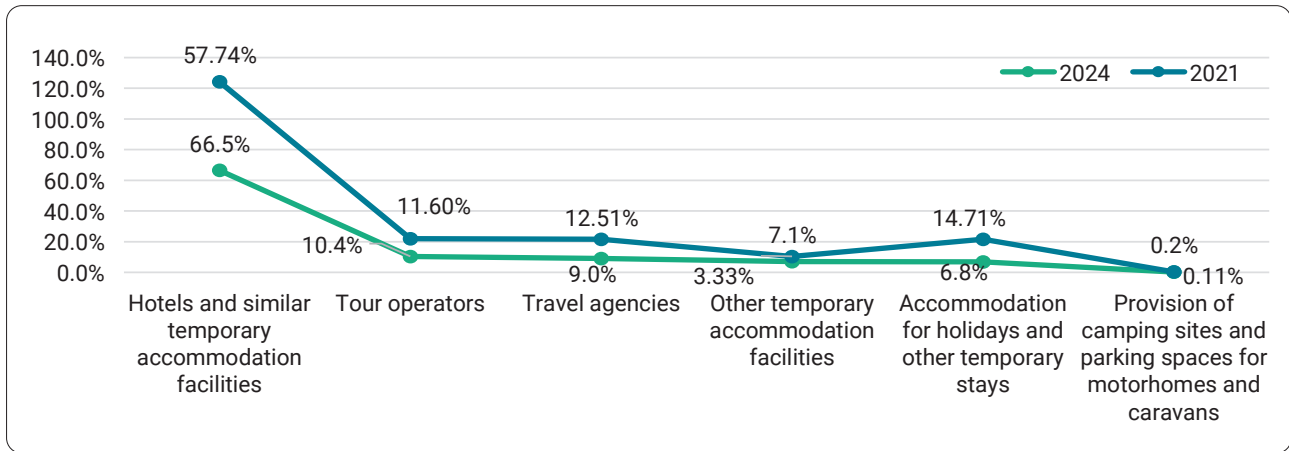


Figure 4. Comparison of the structure of tax revenues from various types of tourism activities in Ukraine in 2021 and 2024

Source: compiled by the author based on the State Agency for Tourism Development of Ukraine (2024a)

Data shows that in 2021, the structure of tax revenues was more balanced: a significant contribution was made not only by hotels and similar accommodation facilities (57.7%), but also by tour operators (11.6%) and temporary accommodation facilities (14.7%). In 2024, the situation changed dramatically: the dominance of hotels increased to 66.5%, while the share of tour operators almost halved, and the figures for other segments fell to 6-9%. This indicates a concentration of tax revenues in the hotel sector and a loss of stable positions for those types of activities that were previously of significant importance.

These changes can be explained by the peculiarities of wartime: restrictions on international travel, reduced demand for organised tourism, and the population's shift towards domestic forms of recreation. The hotel infrastructure has remained partially active thanks to domestic tourism and its use for the needs of displaced persons, while

tour operators and agencies have experienced a sharp decline due to the loss of foreign markets. As a result, 2024 reflects a trend towards a narrowing of the tax revenue structure and an increase in the industry's dependence on a single segment, making it more vulnerable in the long term.

State funding is a key instrument for developing tourism potential, as it provides the resource base for infrastructure development, cultural heritage preservation and support for local initiatives. An analysis of budget allocations in the Kyiv, Cherkasy, Vinnytsia, Zhytomyr, Lviv, Ternopil, Ivano-Frankivsk, and Zakarpattia regions reveals differences in government policy priorities, determines the level of support for individual territories, and tracks imbalances between them. A comparison of indicators for 2021 to 2024 makes it possible to determine which regions were best able to adapt to the crisis conditions and maintain the development of the hotel sector (Fig. 5).

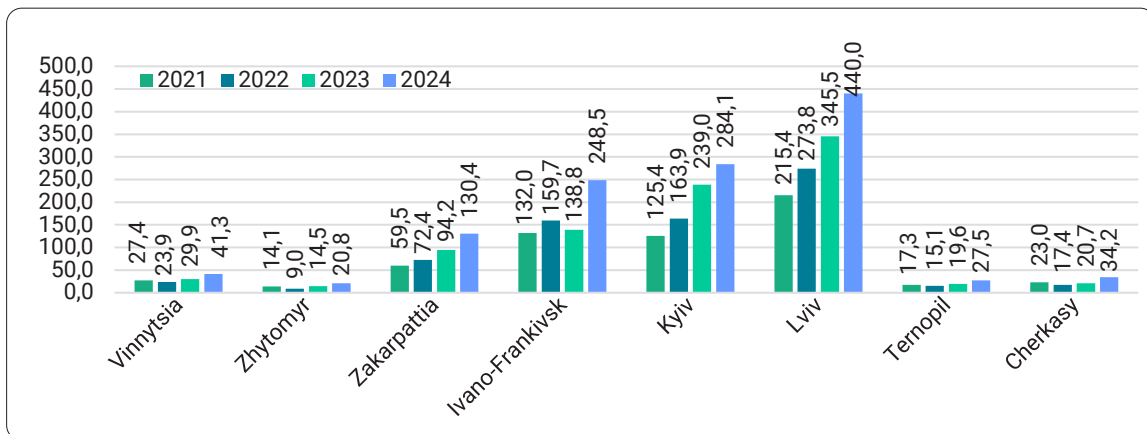


Figure 5. Analysis of the dynamics of tax revenues from accommodation facilities in western regions for 2021 to 2024, million UAH

Source: compiled by the author based on the State Agency for Tourism Development of Ukraine (2023; 2024b)

An analysis of the dynamics of tax revenues from accommodation facilities in 2021-2024 shows significant regional differentiation and varying rates of adaptation of regions to the conditions of martial law. The most stable results are demonstrated by the Lviv region, where tax revenues have almost doubled, confirming its leading role in domestic and inbound tourism. Significant growth is also observed in the Kyiv, Ivano-Frankivsk and Zakarpattia regions, which is attributed to the active development of local tourism products, cultural initiatives and the use of natural and recreational resources. In contrast, the Vinnytsia, Zhytomyr, Cherkasy and Ternopil regions remain relatively low, although they are showing gradual positive dynamics. This indicates that state support and domestic demand are critical to maintaining the functioning of the hotel sector, but its development remains uneven and

largely depends on the tourist appeal and institutional capacity of specific regions.

State support for tourism during martial law is particularly relevant, as it maintains the competitiveness of regions, supports infrastructure and stimulates domestic demand. Different regions of Ukraine receive varying amounts of funding, which leads to differences in development priorities and programme implementation results. Western regions (Lviv, Ivano-Frankivsk, Zakarpattia, Ternopil) focus their resources mainly on the development of infrastructure, cultural and natural routes, while central regions (Kyiv, Vinnytsia, Cherkasy, Zhytomyr) focus on promotional activities and support for local initiatives. In this context, the analysis of state support for tourism in selected western and central regions of Ukraine from 2024 to 2025 is valuable (Table 4).

Table 4. State support and key measures in the field of tourism development in selected western and central regions of Ukraine (from 2024 to 2025)

Region	Amount of state support, UAH	Main actions	Results/expected effect
Lviv	High: Tourism Development Programme 2021-2025; in 2024, over UAH 2.5 billion in funding	Tourism infrastructure, navigation, promotion, "Community Expedition"	Leader in domestic and inbound tourism, with record revenues for the industry
Ivano-Frankivsk	Average-high: grants from the Ukrainian Cultural Foundation (UAH 1.2 million), regional tourism development programme	Development of Carpathian tourism, cultural projects, and competitions for communities	The growing appeal of the Carpathians, new cultural routes
Zakarpattia	Actual expenditures under the Tourism Development Programme in the 2025 budget are again estimated at UAH 14,600,000	Investments in thermal complexes, wine and gastronomic tourism	Steady growth in tourist numbers, especially from the EU
Kyiv region	Average-high: funding within the framework of regional development programmes and the state budget in the amount of UAH 592,900	Promotion and development of tourism products, support for infrastructure and community projects	Basis for further programmes in 2026, growth in domestic flow (in 2024, tax revenues from the tourism sector for 9 months – UAH 196.889 million as an indicator of the effect)
Vinnytsia	Vinnytsia City tourism and promotion programme for 2024-2026: UAH 23.5 million	Medical tourism, cultural events	Strengthening the destination brand; taxes from the tourism industry in the region – UAH 28.849 million
Ternopil	Average: Funding from the regional budget and cultural programmes Tourism Development Programme 2021-2025: UAH 113,000	Development of sacred tourism (Pochaiv/Lavra), organisation of festivals, development of eco-routes and cave tourism	Growth in domestic tourism, weak infrastructure
Cherkasy	Tourism Development Programme 2021-2025: UAH 102,000 (approved expenditure)	Programmes for the development of Shevchenko sites (Kaniv, Morintsy), restoration of the Dnipro riverbank infrastructure, support for local festivals	Gradual increase in tourist traffic; in 2024, tourist revenue for the region for 9 months was UAH 22.972 million (side effect)
Zhytomyr	Low: individual heritage programmes, agritourism. Tourism development programme 2021-2025: UAH 161,000	Restoration of monuments, development of rural tourism	Partial utilisation of tourism potential; in 2024, revenue from the tourism industry was UAH 14.5 million

Source: compiled by the authors based on Regional Targeted Program for Tourism Development in Zhytomyr Region for 2021-2023 (2020), Report on the Implementation of the Regional Budget of Kyiv Region for 2021 (2022), Competition for projects for small grants in Ukraine for 2025 (2025)

Regional analysis shows that the highest concentration of resources is observed in the Lviv and Zakarpattia regions. In Lviv, systematic funding has not only supported infrastructure but also consolidated the region's position

as a leading centre for domestic and international tourism (Support for military..., 2024; Order of the..., 2025). Despite its smaller size, Zakarpattia has a distinct specialisation oriented towards cross-border flows and the development of

thermal resorts (Program of Tourism..., 2023). This strategy ensures a steady increase in visitors and the gradual formation of the region's image as an international resort cluster.

The middle group includes the Kyiv, Vinnytsia, and Ivano-Frankivsk regions. State support is combined with targeted cultural and medical programmes, which can expand the tourism product, but do not yet provide breakthrough growth. Kyiv has significant potential due to high tax revenues from tourism, but the volume of direct budget injections remains relatively low (Programme of Socio-Economic..., 2024). Vinnytsia region actively uses branding tools through festivals and the development of the sanatorium and resort sector (Tourism Development Programme..., 2020), while Ivano-Frankivsk region relies on the resources of the Carpathian region (About the regional..., 2024; Yatsiv & Zakharuk, 2023) and grant support for cultural projects.

The Cherkasy (Tourism Development Programme..., 2021a) and Zhytomyr (Action Plan for

2024-2027..., 2023) regions remain problematic, where state support is limited to symbolic amounts. Despite the presence of valuable cultural resources, such as Shevchenko sites and historical monuments, these regions do not have the financial capacity to create large-scale tourism projects. A similar situation is characteristic of the Ternopil region (Tourism Development Programme..., 2021b), where, despite a certain amount of funding, infrastructure constraints are holding back the development of sacred and eco-tourism. Thus, an asymmetrical model is forming in Ukraine, in which several regions concentrate the main flows of investment and tourists, while others remain on the periphery of the national tourism space.

The prospects for restoring the tourism potential of Ukraine's regions are correlated with the amount of grant resources and investments attracted from the EU. Table 5 provides a summary comparison of these scenarios, assessing the realistic and critical limits of the impact of external support on Ukraine's tourism sector from 2025 to 2027.

Table 5. Scenarios for restoring the tourism potential of Ukraine's regions through EU programmes (2025 to 2027)

Scenario	Approximate funding for the region	Expected results	Main risks
Optimistic	EUR 6-10 million (several Interreg + Creative Europe + EU4Business projects)	Growth in tourist flows by +25-35%; increase in the number of overnight stays by +20-30%; additional revenues to local budgets at the level of +30-40%; creation of 200-400 new jobs; launch of 3-5 new routes or products	Martial law and the threat of shelling in tourist regions, destruction of transport infrastructure, restrictions on air travel, low investment attractiveness due to security risks, and currency exchange rate instability
Realistic	EUR 3-5 million (1 Interreg project + cultural or environmental grants + SME support)	Increase in tourist flows by +10-20%; increase in overnight stays by +10-15%; additional revenue of +10-20%; creation of 100-200 jobs; restoration of 1-2 infrastructure facilities or launch of an eco-friendly route	Redistribution of resources to priority defence sectors, migration of personnel abroad, shortage of engineers and specialists in the tourism sector, delays in customs clearance of equipment, and martial law as a factor of unpredictability
Pessimistic	EUR 1-2 million (individual grants + local funding)	Growth in tourist flows does not exceed +2-5%; revenues remain almost at the 2024 level (growth ≤5%); creation of up to 50 jobs; preservation of basic infrastructure without the development of new areas	Prolongation of the active phase of the full-scale invasion of 2022, destruction of cultural monuments and natural resources, reduction in domestic demand due to falling incomes, rising energy and logistics costs, and instability of the regulatory framework

Source: compiled by the authors

The optimistic scenario envisages Ukraine attracting the maximum amount of funding from European programmes. In this case, the regions will have the opportunity to implement several large-scale cross-border initiatives at once, combining infrastructure projects, cultural heritage preservation and the development of small businesses in the hospitality sector. This option provides a path to rapid modernisation of tourism infrastructure, expansion of new routes and services, and a significant increase in visitor numbers. Integration with EU partners is particularly relevant in this scenario, as it can create competitive advantages in the international market. A realistic scenario, on the other hand, is based more on the partial use of grant opportunities and envisages gradual recovery through a single cross-border project and several

cultural or environmental initiatives. This makes it possible to achieve concrete results at the level of individual sites, routes or festivals, which will ensure that positive momentum is maintained even in conditions of limited resources. Such development will not lead to a sharp increase in international tourism, but it can maintain their basic positions and form a basis for further development after the political and economic situation stabilises.

A pessimistic scenario arises if most applications are not supported and funding is limited to local budgets and isolated grants. Under such conditions, tourism development practically stops, and the main efforts are directed only at supporting existing products and minimally maintaining infrastructure. This means the risk of losing competitive positions in domestic and international markets,

the gradual degradation of tourism resources, and a decline in the attractiveness of regions. In such a situation, tourism ceases to be a driver of regional growth and is reduced to a secondary sphere dependent on external factors.

Given the current realities, the most probable scenario for Ukraine is a realistic one. It reflects a balance between ambitious plans and real constraints related to the state of war, resource shortages and high competition for European grants. In the short term, it is a gradual recovery through individual cross-border and cultural projects that can ensure stable growth in tourism, support employment, and maintain the competitiveness of the regions. The optimistic scenario can be defined as a strategic element for the medium and long term, while the pessimistic scenario serves more as a warning about the consequences of a lack of systematic international support.

Discussion

The results of the study show that the development of tourism potential in Europe is largely determined by the coordination of institutional support mechanisms and the ability of regions to adapt to integration challenges, while countries with transitional economies remain vulnerable to external shocks and have limited effectiveness in the use of financial resources. S. Srhoj *et al.* (2022), N. Ormerod & E.H. Wood (2021), and F. Beha *et al.* (2024) proved that the effectiveness of grant and financial programmes in the field of tourism is determined by a combination of market demand, managerial transparency and institutional quality. A study of the Croatian experience found that grants contributed to growth in sales, added value and employment in tourism-developed regions, while their effect was minimal in regions with less infrastructure. In turn, studies of tourism development in southern EU countries have confirmed that strong institutions contribute to growth in tourist arrivals, while weak ones limit the sector's competitiveness. The results obtained are generally consistent with the results of the analysis of grant aid and state support programmes in Ukrainian regions, where financial support is more effective in areas with established tourism demand, and effective restoration of tourism potential after war losses is only possible if external funding is combined with the institutional capacity of regions to ensure proper resource management.

A difference was also found with the studies by A. Vărzaru *et al.* (2021), J.V. Andrei & M.C. Drăgoi (2021), and A. Panasiuk & E. Wszendybył-Skulaska (2021), which examined the impact of the COVID-19 pandemic on the tourism sector and the role of social tourism in European policy. The study established that the health crisis significantly reduced the multiplier effect of the industry and led to a decline in key economic indicators, while social tourism was identified as a substantial element to ensure inclusiveness and sustainable development, the effectiveness of which depends on the financial and organisational decisions of Member States. The approaches presented are based on the experience of EU economies with a stable

institutional environment and access to supranational resources. In contrast, this study shows that the Ukrainian tourism sector faces much greater losses caused by military actions and uneven regional development, and that the industry's recovery is only possible if external grant support is combined with the formation of an adaptive management system capable of addressing crisis circumstances and regional specificities.

Studies by L. Dwyer (2022) and S.P. Nogueira *et al.* (2023) confirm that assessing tourism development in the context of the Sustainable Development Goals is incomplete without considering the impact on the well-being of the local population, and that standard economic indicators need to be supplemented with indicators of social inclusion and quality of life. The development of rural areas and cross-border cooperation supported by European funding, which can overcome infrastructure and marketing barriers and ensure more balanced regional development, was also considered. This study also confirms these findings, as an analysis of grant support for the tourism sector in Ukraine revealed varying degrees of effectiveness between regions: in Kyiv and the western regions, it contributed to the revitalisation of tourism and the preservation of jobs, while in the central regions, the results were limited. This correlation confirms the need to combine EU financial programmes with state support mechanisms focused not only on infrastructure development but also on improving the well-being of the population and the social sustainability of Ukraine's tourist regions in the context of war losses and integration into the European space. Meanwhile, studies by B. Gavurova *et al.* (2021), V. Ivankova *et al.* (2021), and L. Ionescu Feleagă *et al.* (2023) identified innovation, transport infrastructure, and digitalisation as key factors in the growth of tourism expenditure in OECD and EU countries. The study proved that investments in information and communication technologies have the most significant impact on stimulating tourism demand, while the development of road infrastructure in less developed countries ensures the growth of domestic and business tourism. The results obtained in this study are consistent with the results of these studies, as it was found that grant and state support in Ukraine is most effective in regions where innovative and infrastructure projects are combined, while in central regions with lower levels of development, the effect remains limited. In contrast to EU countries, where digitalisation and infrastructure investments have ensured a relatively rapid recovery of tourism potential, Ukraine remains vulnerable to crisis shocks and needs external financing to overcome institutional and regional imbalances.

Studies by L. Plzakova (2022), C. Aygül & S. Mertek (2025), as well as N.T. Mai *et al.* (2023) emphasise the need to introduce systems for assessing the impact of investments on the tourism sector, which can improve the objectivity of measurement of the results of programmes and projects, especially at the local level. In addition, cultural tourism has been studied, determining that the involvement of local resources and heritage can become the

basis for the competitiveness of tourist areas and contribute to the development of small and medium-sized enterprises in this field. The results obtained are consistent with the conclusions of this study, which emphasises that the key task for Ukraine is to create effective mechanisms for evaluating grant programmes that can determine their real impact on regional development. Moreover, the adaptation of visa policy to European standards is seen as a prerequisite for the restoration of international tourist flows, and the use of cultural resources as a factor in the formation of unique competitive advantages. The combination of these elements can ensure not only a short-term revival of the tourism sector, but also the long-term integration of Ukrainian tourism into the European space after the war losses. The results of this study differ from the conclusions of the works by R. Higgott & A.G. Lamonica (2021), M. Stec & M. Grzebyk (2022), D.M. Voicilaş & I. Certan (2021), which emphasise the role of EU cultural diplomacy in foreign relations, statistical comparisons of the level of socio-economic development and the tourism function of countries, as well as cross-border cooperation between Central and Eastern European countries. At the same time, the results of this study show that in Ukraine, it is not general macro approaches that are of key importance, but the applied level of implementation of grant programmes and state support mechanisms. Furthermore, in contrast to European practice, where culture is viewed primarily as an instrument of diplomacy, in the Ukrainian context, it serves as a practical resource for restoring local tourism and revitalising domestic tourist flows. This indicates that the restoration of Ukraine's tourism potential after the war depends on the integration of grant support, reflecting regional specifics, as well as on the combination of local cultural resources with targeted development programmes.

An analysis of studies conducted by G.C. Pascariu *et al.* (2021), and C.M. Llorca-Rodríguez *et al.* (2021), C. Basil *et al.* (2023) revealed how the economic impact of tourism at the subnational level, the tourism sector's ability to recover from crises, and the growing integration of European countries determine current approaches to managing the industry. The importance of balanced spatial development and diversification of tourism products, which increase the resilience of regions to financial and social shocks, was also emphasised. However, the results of this study show that in Ukraine, not only resilience but also the uneven distribution of tourist flows is a critical factor: significant overloading of well-known tourist centres contrasts with a sharp decline in activity in less developed regions.

A comparison of the results with previous studies showed that most of them focus on individual aspects, such as grant funding or cultural resources, and do not sufficiently address the complexity of integration processes. International studies tend to emphasise the positive effects of European programmes or the resilience of tourism during crises but omit regional specifics. In contrast, this study demonstrates that for Ukraine, it is crucial to combine EU financial support with national programmes and local

resources, and that an integrated approach can ensure the long-term recovery of tourism potential.

Conclusions

The study revealed that European integration processes over the past decade have been a decisive factor in the transformation of Ukraine's tourism sector. While the focus between 2014 and 2021 was on harmonising standards, developing the regulatory framework and expanding mobility, since 2022 the priority has shifted to restoring and supporting the industry in wartime conditions. EU programmes and financial aid packages are aimed at reconstructing infrastructure, preserving cultural heritage and ensuring the sustainability of tourism services, which form the basis for Ukraine's further integration into the European tourism space. An analysis of European programmes and funds has revealed a multi-level support model that combines infrastructure projects with cultural initiatives and cross-border cooperation. Interregional initiatives stimulate the modernisation and accessibility of tourist areas, while specialised funds such as EU4Culture or the Alliance for the Protection of Heritage in Conflict Areas ensure the protection and promotion of cultural heritage. This creates a synergy of tangible and intangible resources, which simultaneously stabilises the industry in times of crisis and lays the foundation for its sustainable development.

An assessment of tax revenues for the period from 2021 to 2024 revealed significant differences between the pre-war and war periods. A sharp decline in 2022 (down 30.5% to UAH 1,551 million) was followed by a gradual recovery from 2023 to 2024, when the figures exceeded the pre-war level (UAH 2,938 million in 2024). At the same time, the number of taxpayers decreased by almost a fifth, indicating the collapse of some businesses. Structural changes confirmed the dominance of the hotel sector and the weakening of the positions of tour operators, which were most affected by the challenges of war. Regional analysis revealed significant asymmetry in the level of state support and speed of recovery. The Lviv and Zakarpattia regions received the most resources and consolidated their positions as key tourist centres. In contrast, central regions such as Vinnytsia, Zhytomyr and Cherkasy are recovering more slowly due to limited funding opportunities. As a result, a model has emerged in which some regions are integrated into tourism clusters, while others need additional incentives to maximise their potential. Modelling scenarios revealed that the most probable realistic development option for Ukraine in the near future involves attracting moderate funding from EU programmes and implementing several cross-border and cultural projects, which will ensure moderate growth in tourist flows and support employment even under martial law. An optimistic scenario with large-scale funding could become a strategic goal once the situation stabilises, while a pessimistic scenario outlines the risks of stagnation in the event of limited international assistance.

Further research could address the long-term impacts of martial law on the tourism potential of regions, the effectiveness of international aid, and models for post-war infrastructure recovery. This would broaden the findings and contribute to the research of how European integration processes can ensure the resilience of the sector in crises. The limitations of the study are related to the partial availability of statistics and the influence of external political and security factors, which change independently of the researcher and adjust the results. This complicates the formation of long-term forecasts, as the development of

tourism remains dependent on international support and the stability of the external environment.

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Вплив євроінтеграційних процесів на розвиток туристичного потенціалу України

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Анотація. Мета дослідження полягала у вимірюванні впливу євроінтеграції на відновлення та модернізацію туризму в Україні. Методологія включала аналіз статистичних даних про податкові надходження від туристичної сфери у період 2021 по 2024 роки, узагальнення грантових програм ЄС (Interreg, CreativeEurope, EU4Culture) та вивчення офіційних програм підтримки у західних (Львівському, Івано-Франківському, Закарпатському, Тернопільському) і центральних (Київському, Вінницькому, Черкаському, Житомирському) регіонах України. Отримані результати засвідчили, що у довоєнний період з 2014 по 2021 років, євроінтеграція сприяла гармонізації стандартів та залученню інвестицій, тоді як після 2022 року акцент змістився на збереження і відновлення галузі. Програми ЄС поєднують інфраструктурні проекти та культурні ініціативи, забезпечуючи стабілізацію й перспективи. Податкові надходження різко знизилися у 2022 році (1551 млн грн), проте зросли до 2938 млн грн у 2024 році, зі структурним посиленням готельного сектору. Державна підтримка у 2024 по 2025 роки стала ключовим чинником збереження інфраструктури: найбільше фінансування зосереджено у Львівському та Закарпатському регіонах, тоді як Київський, Вінницький та Івано-Франківський регіони отримали середній рівень підтримки з помірними результатами, а Житомирський, Черкаський та Тернопільський характеризуються обмеженими можливостями розвитку. Це сформувало диспропорційну модель розвитку, за якої окремі регіони формують стійкі туристичні кластери, тоді як інші залишаються залежними від додаткових механізмів підтримки. Сценарний аналіз засвідчив, що найбільш імовірним є реалістичний варіант із залученням середніх обсягів фінансування та реалізацією транскордонних і культурних проектів. Результати доводять, що туристична сфера зберігає стійкість завдяки міжнародній підтримці, державному фінансуванню та внутрішньому попиту, а практичне значення полягає у визначенні механізмів, які можуть бути використані для відновлення туристичної інфраструктури та підвищення її конкурентоспроможності в Україні

Ключові слова: грантові програми; податкові надходження; інфраструктурні проекти; сценарії відновлення; воєнний стан; державне фінансування

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Features of innovative development of food industry enterprises in crisis conditions in Ukraine

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Abstract. The study aimed to identify key trends and characteristics of innovative solutions implementation in Ukrainian food industry enterprises during economic and social instability. The methodology was based on the use of statistical and economic-statistical analysis to assess production volumes, growth indices and financial results, content analysis of scientific publications, as well as a case study of the MHP company. The results showed that in 2020, the volume of food products sold amounted to UAH 480 billion, in 2022 it increased to UAH 708.27 billion, in 2023 it decreased to UAH 633 billion, and in 2024 to UAH 522 billion. The production index fluctuated: in 2022, it fell to 78.4%, but in 2023, it recovered to 106.8% and reached 115.9% in the first half of 2024. Exports of finished food products exceeded USD 3.27 billion in 2023 and more than USD 4 billion in 2024. MHP's financial results fluctuated: after a loss of USD 269 million in 2022, the company posted a net profit of USD 122 million in 2023 and USD 141 million in 2024. Total capital investment in the food industry in 2024 amounted to UAH 33.4 billion, which is 91.1% more than in 2023, of which 70.9% was spent on equipment modernisation. The introduction of biogas complexes (MHP over 12 MW, Astarta about 12 MW) and solar power plants also indicated the spread of renewable energy in production. The practical significance of the study lies in the possibility of using its results to develop strategies for modernisation, digitalisation and energy efficiency that would ensure the sustainability and competitiveness of Ukrainian food industry enterprises in the context of crisis challenges

Keywords: transformation; adaptation; industry; efficiency; digitalisation; competitiveness; production

Introduction

In the context of the crisis that the Ukrainian economy is experiencing, food industry enterprises are forced to operate in an environment of high uncertainty. Military action, inflationary fluctuations and a decline in the purchasing power of the

population directly affect the production activities and financial stability of companies. This necessitates the search for innovative solutions that will maintain profitability and competitive positions in both domestic and foreign markets.

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Food industry enterprises in Ukraine faced numerous risks during the full-scale invasion, including the destruction of production facilities, interruptions in the supply of raw materials, loss of sales markets, staffing constraints, financial instability, and logistical difficulties. O. Hryvkiivska & M. Horinnyi (2024) emphasised that these factors made it difficult to ensure the continuity of production processes, reduced financial stability and created additional barriers to export activity. The study emphasised the importance of maintaining food security as a key task, as it was the functioning of the food industry that ensured employment and stability of the domestic market. Baking enterprises in Ukraine were in a situation where increasing economic and social risks required updating management approaches, modernising production and introducing innovations. Y. Danko *et al.* (2025) studied the strategic foundations of innovative development, defined the essence of this concept, outlined the key risks for the baking industry, and emphasised the need to update the material and technical base, introduce modern technologies, and adapt to changes in consumer preferences. As a result, the study argued that effective and sustainable development is only possible if innovation is boosted, a comprehensive strategy is developed that incorporates the challenges of Industry 4.0, and there is a focus on environmental safety and competitiveness.

Small enterprises in Ukraine face challenges related to economic and political instability, increased global competition, changes in the regulatory environment, and the need to adapt quickly to a dynamic market environment. P. Tishakov (2024) researched innovative adaptive management strategies that ensured stability and competitiveness for enterprises. The study substantiated that the implementation of strategic planning, innovative marketing, and investment mechanisms contributes to increasing business efficiency and flexibility, as well as creating conditions for rapid response to market changes. The development of the innovative potential of food industry enterprises in Ukraine is characterised by a low level of activity in the implementation of innovations, which was due to a lack of funding, the absence of an effective state support strategy, market monopolisation and the focus of business on short-term tasks. G. Mokhonko & K. Klymenko (2020) studied the state of the innovative potential of enterprises, identified its key components (financial, technical and technological, human resources, research and development, and market) and showed that only about 1% of enterprises were engaged in innovative activities.

Innovative activity of enterprises in Ukraine in the context of a full-scale invasion (2022) was accompanied by numerous challenges, including increased financial costs, logistical complications, destruction of production facilities, loss of traditional markets, shortage of skilled personnel, and changes in the legal environment. O. Hryvkiivska & M. Horinnyi (2025) revealed the risks that arose during the introduction of new technologies and products, identified their key types (financial, logistical, production, marketing, personnel, and regulatory) and proposed a methodology

for integrated assessment to quantitatively determine their level. The study emphasised that financial risks remained the most threatening, while innovation risks were less critical but still required proper control. In Ukraine, enterprises operating in the bakery industry faced a range of challenges, including falling consumer demand, rising raw material prices, declining purchasing power of the population, the development of small-scale baking, and low-capacity utilisation. A. Hrishchenko (2024) researched the conceptual foundations of forming an innovative development strategy, developed a mechanism for its implementation, and identified the main stages of implementation, including analysis of the internal and external environment, formation of a goal tree, and monitoring of innovative potential.

In Ukraine, companies operating in the food production sector faced difficulties due to the unstable economic environment, limited investment resources, and the need to quickly adapt to modern challenges. V. Kaidanovych (2024) researched innovative development guidelines, identified key factors influencing their effective implementation, and emphasised the importance of integrating modern technologies into production and management processes. The study showed that digitalisation, the use of artificial intelligence, and the introduction of innovative approaches in production contributed to increased productivity and competitiveness. In the context of military challenges, Ukrainian food production companies faced limited access to resources, logistics disruptions, rising costs, and a decline in the purchasing power of the population. N. Slobodian *et al.* (2024) researched innovative development tools and substantiated their role in improving the efficiency of enterprises, emphasising the introduction of digital technologies, the formation of new management approaches, and the expansion of environmentally-oriented practices.

The areas of innovative transformation remained insufficiently explored, in particular, the practical integration of digital solutions and innovative strategies into the activities of enterprises of various sizes, considering local conditions and crisis factors, as well as the issues of financing and assessing the long-term effectiveness of such mechanisms, which require further scientific study. Therefore, the study aimed to identify the factors and mechanisms that ensure the effective implementation of innovations in the activities of food industry enterprises in Ukraine in conditions of crisis instability.

Materials and Methods

The study was empirical in nature and covered two time periods and two levels of analysis: for the food industry of Ukraine in 2020-2024 and for the MHP case in 2016-2024. To assess the dynamics of the total volume of food products sold and the production index in 2020-2024, statistical analysis was used to identify changes in indicators in the context of crisis challenges, determine growth and decline trends, and track the recovery of production capacities. The source of the analysis was data from N. Smolinska *et al.* (2025), as this study contains systematised

statistical materials on the functioning of the food industry in Ukraine during the specified period, which ensures the accuracy and representativeness of the results. In addition, a comparative analysis method was used to compare changes in the structure of production, which traced the redistribution between the meat, oil, dairy products and other groups. For this purpose, materials from Agropotal (2025), T. Besarab (2025) and the study by V. Ivchenko *et al.* (2024) were used, as they contain generalised statistical data on the structure of the food industry in Ukraine and make it possible to assess the dynamics of changes in the industry. To identify the factors that influenced innovation activity during the period of instability, content analysis of scientific publications and reports by O. Pyschulina *et al.* (2021) and A. Barbu *et al.* (2022) was used. This method was used to systematise information about the economic, technological, social and political conditions that shaped the need for innovation, as well as international and regulatory influences.

Case studies were used for further analysis of the activities of MHP, which was selected as an example of Ukraine's largest food producer and exporter actively implementing digital and management innovations. The case study method was used to analyse specific technological solutions. To assess the effectiveness of the implementation of digital technologies in production and logistics processes, Marel's I-cut intelligent machines, Clean-in-Place washers and the Smart Maintenance platform were analysed. The study also covered the Data Model Meat Processing system, the Smart Technology Assistant (Smart TA) tool, and the Systems, Applications and Products in Data Processing (SAP) ERP solution used to manage production resources. The Rinkai Transportation Management System, which is used to analyse opportunities for logistics optimisation and cost reduction, was considered separately.

MHP's (2017; 2021; 2023; 2024) financial results were studied for the period 2016-2024. To this end, economic and statistical analysis based on official financial reports was used, which made it possible to track the latest changes in the company's financial indicators. This method determined how innovative investments affected income, gross and operating profit, adjusted Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA) and net profit. The year 2016 was chosen as the base year because it marked the end of the pre-innovation stage of the company's development, while 2017 saw the start of the active phase of digital technology implementation, and the period 2020-2024 was considered the peak in terms of testing the effectiveness of innovation strategies.

A descriptive method was used to evaluate MHP's investments in the ERP system Systems, Applications and Products in Data Processing, Suite 4 for High-Performance Analytic Appliance (SAP S/4HANA) and in the logistics business through the acquisition of KTL Ukraine. The method was used to analyse how digital solutions and the development of the company's logistics infrastructure affected its management efficiency and competitive position.

To assess the prospects for innovation in Ukraine's food industry, a method of systematisation and generalisation was applied. The analysis covered state programmes to support innovation, in particular "Support for farms and other agricultural producers" (Order of the..., 2024) and the "5-7-9%" preferential lending programme. Examples of the implementation of renewable energy sources were considered separately the activities of leading biogas enterprises in Ukraine and the use of solar technologies to improve the energy efficiency of production. These areas were analysed based on materials from Agravery (2020), which summarised the practices of using renewable energy in the food industry. In addition, the dynamics of the expansion of food exports were analysed. This analysis was based on materials from the Association of Milk Producers (2025), which tracked changes in the structure of foreign supplies. The use of this method ensured the combination of statistical data with practical examples and highlighted the priority areas for the development of the food industry.

Results

Dynamics of innovative activity of food industry enterprises in Ukraine during the crisis

In 2020-2024, Ukraine's food production showed mixed dynamics, reflecting the impact of the COVID-19 pandemic and military operations. The total volume of products sold increased from UAH 480 billion in 2020 to a peak of 708.27 billion UAH in 2022, demonstrating the ability of enterprises to adapt to crisis conditions. At the same time, in 2024, the volume decreased to UAH 522 billion due to the exacerbation of economic and social instability. The production index in 2020 was 99.2% and exceeded the average industrial indicator (95.5%), in 2022 it decreased to 78.4%, but in 2023 it increased to 106.8%, confirming the recovery of production capacities. In the first half of 2024, the index maintained positive dynamics at 115.9% compared to the same period in 2023. Figure 1 shows the dynamics of food sales in Ukraine in 2020-2024, reflecting changes in the production capabilities of enterprises under the influence of crisis factors.

The dynamics were wave-type: after a period of growth from 2020 to 2022, there was a decline in 2023-2024. This indicates the impact of crisis factors on the activities of enterprises. In general, the trend shows a loss of stability in production and sales. The structure of production has changed. The most stable positions were held by sunflower oil (24.4%) and animal fats (24.9%), whose share remained almost unchanged in 2015-2023. At the same time, the share of meat and meat products increased from 11.3% in 2015 to 20.5% in 2023, which was explained by higher prices. During the period 2015-2023, sugar production increased 8-fold, fish products 5.4-fold, and meat products 4.3-fold. At the same time, in 2021-2023, the value of oil production decreased by 9.6%, and that of flour and cereal products by 10.2%. The quality of dairy products improved significantly: in 2022, 69.5% of the assortment consisted of extra and premium milk (Ivchenko *et al.*, 2024;

Agropotal, 2025). In 2024, meat production increased by 4-5% and amounted to about 2.35-2.54 million tonnes, with meat and meat products accounting for about 20.6% of the total volume. Sunflower oil production amounted to 6.3-6.4 million tonnes (with 14.4 million tonnes of seeds processed), which, together with animal fats, accounted

for 25.1% of food production. Milk production reached 7.25 million tonnes (2.5% less than in 2023), accounting for 13-15% of the total structure, while sugar held a share of about 5% (1.8 million tonnes). Fish production showed slight growth, with freshwater fish production in the Lviv region increasing by 30% (Besarab, 2025).

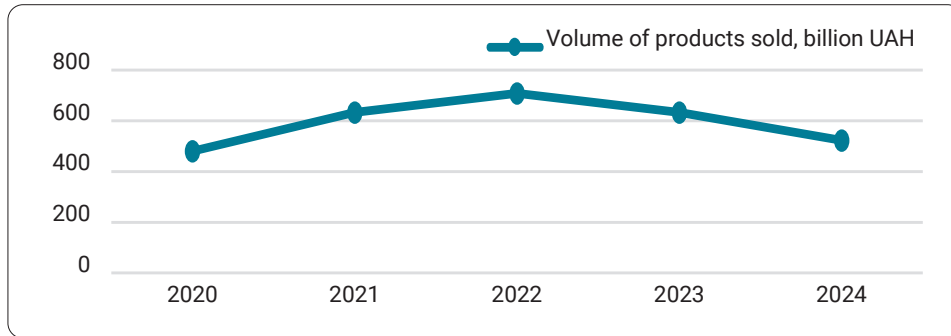


Figure 1. Dynamics of sales volume for 2020-2024 (billion UAH)

Source: compiled by the author based on N. Smolinska *et al.* (2025)

The distribution by market segments remained relatively stable: bakery products accounted for 20.8-26.5% of total output, while domestic consumption focused on pasta, confectionery and margarine. The export component retained its leading position in sunflower oil, meat, sugar, and confectionery, with large companies, in particular MHP, being central. In 2023, exports of finished products exceeded USD 3.27 billion, and in 2024, they grew to over USD 4 billion (In 2023, exports..., 2023).

The cost component of enterprises became more complicated in the context of a full-scale invasion. In 2022, 76% of manufacturers reported disruptions in the supply of raw materials and supplies, and nearly 21% reported problems with electricity, forcing them to switch to expensive alternative energy sources. Logistics became more complicated due to the destruction of infrastructure and rising transportation and storage costs. At the same time, there was an increase in the prices of energy resources and raw materials, which led to higher production costs and lower profitability, even though output volumes remained unchanged. In 2023-2024, there was a gradual recovery in production and stabilisation of financial activities. Companies were more active in introducing innovative technologies, modernising equipment, and seeking new markets and suppliers. These measures helped to reduce costs, improve product quality, and ensure competitiveness even in crisis conditions (Agropotal, 2025).

Thus, in 2020-2024, the Ukrainian food industry was characterised by a combination of deep crisis declines and rapid recovery, the preservation of stable segments (oil, fats, meat), increased exports and improved product quality. Rising costs and logistical constraints were key factors that hampered financial results, but innovative approaches and the adaptability of enterprises made it possible to maintain growth momentum even during a

period of prolonged instability. In 2020-2024, the innovative activity of food industry enterprises was determined by several interrelated factors that either strengthened or restrained the dynamics of development. Economic conditions had the greatest impact. The COVID-19 pandemic and military actions caused a drop in household incomes, inflationary pressure, and an increase in the cost of energy resources and raw materials. This forced enterprises to seek ways to reduce costs, which increased the importance of innovations capable of reducing production costs and ensuring more efficient use of resources. Technological factors were significant. The active development of digital platforms, geographic information systems, automation and analytics systems created conditions for increasing productivity and optimising production processes. The use of modern technologies reduced the impact of the human factor, reduced the number of errors and adapted production more quickly to changes in demand (Pyschulina *et al.*, 2021).

The social factor was linked to changing consumer preferences. Growing demand for high-value-added, environmentally friendly and high-quality products stimulated innovative approaches. In addition, in the context of a full-scale invasion, there was increased attention to job preservation and employee training, which also required the introduction of new methods of work organisation and staff training. Political and regulatory factors remained relevant. As part of its European integration course, Ukraine undertook to adapt its production standards to EU requirements, which stimulated the modernisation of equipment and the introduction of quality control and certification systems. At the same time, the state and international institutions provided financial support, which created additional opportunities for innovative activities of enterprises during a period of instability (Barbu *et al.*, 2022).

The international factor also reinforced the importance of innovation. The emphasis on exporting sunflower oil, meat, sugar and confectionery products required compliance with international standards, while competition on global markets encouraged the introduction of technologies that improved the quality and efficiency of production. The export component became a stimulus for innovation, as it was new approaches that maintained and expanded sales markets for enterprises. Thus, in the period 2020-2024, innovation activity in the food industry of Ukraine was determined by a combination of economic, technological, social, political and international factors. These factors created ambiguous conditions: on the one hand, they complicated operations due to rising costs, risks and logistical constraints, but on the other hand, they stimulated enterprises to modernise, digitise and become more environmentally friendly, which ensured their competitiveness even in crisis conditions.

Use of the latest tools in production and management processes

The introduction of digital technologies became a key area of transformation for MHP in 2017-2024. Thanks to geographic information systems, the company was able to accurately map and account for land plots, which eliminated paper document flow and increased the efficiency of management decisions. The use of precision farming with Global Positioning System navigation and automated systems for applying fertilisers and plant protection products has optimised resource use and increased crop uniformity. The integration of data into a single ERP system minimised the human factor, and the use of artificial intelligence ensured operational monitoring of field conditions and real-time adjustment of agrotechnical measures. A substantial effect was the return of about 30% of low-productive areas to production at 12 of the company's enterprises, which directly contributed to an increase in gross yield (MHP shared the..., 2018).

Investments in digitalisation grew gradually. While in 2017-2018 the company focused on its first projects, in 2022-2024 it launched a large-scale digital transformation, becoming a leader in agricultural digitalisation in Eastern Europe. One of the first steps was the automation of processes in the meat processing division. To this end, a hydrocutter for 3D meat cutting was introduced, which made it possible to cut raw materials with high precision according to specified parameters, minimising losses and increasing the yield of finished products. A substantial advantage was the ability to configure different cutting modes to meet customer needs, which made it possible to create products with higher added value. At the same time, Japanese automated systems for separating meat from bones were integrated, which increased the speed and safety of operations and made it possible to reduce costs by saving working time and using raw materials more efficiently. Mare's I-cut intelligent machines were substantial, optimising cutting based on computer

vision, which ensured consistent product quality regardless of production volumes. A significant addition was the Clean-in-Place washing system, which was used for automated cleaning of equipment without dismantling it. This reduced water, detergent and time consumption and ensured compliance with international food safety standards (Shawarma robots, AI..., 2025).

The Smart Maintenance digital platform was instrumental in the technical maintenance of equipment, enabling repairs to be managed based on real data, predicting failures and reducing production downtime. In addition, production efficiency was enhanced by the Data Model Meat Processing system, which is based on big data analysis and provides real-time control of process parameters and optimisation. Among the most advanced solutions is Smart TA, which uses artificial intelligence algorithms to manage incubators and poultry houses. It controls the microclimate, lighting and feeding, adapting conditions to the needs of poultry at each stage of development. In the field of management and logistics, the integration of SAP ERP has become a key tool, combining financial, production and logistics processes into a single digital platform. This has ensured transparency of decisions, increased planning accuracy and reduced operational risks. The Rinkai Transportation Management System was implemented, which reduced transport mileage and fleet costs, resulting in a threefold reduction in excess mileage and a more than 10% reduction in fleet costs. The final element was the integration of Customer Relationship Management solutions, which made it possible to consolidate customer and supplier data into a single system, increase the transparency of interactions and the speed of request processing, which had a positive impact on sales efficiency and customer trust (Approach to digital..., 2023).

In 2024, MHP's innovative activities contributed to the launch of new products and brands: the premium chicken brand Super Filo (AgroElita, 2024) and MHP Food Service, dedicated to catering for corporate clients. This transitioned the company from raw material production to a culinary direction with high added value. A substantial result was the strengthening of export potential. In 2024, MHP's export revenue amounted to USD 1.7 billion, which accounted for a significant share of Ukraine's total food exports (over USD 4 billion). A notable case study is Perutnina Ptuj (2025) in Slovenia, which increased its production from 88 to 146 thousand tonnes in five years (2020-2024) and almost doubled its revenue. Innovations ensured the expansion of markets in the EU, the UK and Asia, and had a multiplier effect on MHP exports, with each euro bringing EUR 3.8 to production. At the same time, the expansion of innovative activity and entry into new markets was accompanied by a gradual recovery in the company's financial results. As shown in Table 1, the dynamics of key indicators were characterised by significant fluctuations due to the impact of crisis factors, but a recovery was observed in subsequent years.

Table 1. Financial indicators of MHP for 2016-2024

Year	Income (million USD)	Gross profit (million USD)	Operating profit (million USD)	Adjusted EBITDA (million USD)	Net profit (million USD)
2016	822	299	278	343	102
2017	970	331	318	371	257
2020	1414	322	194	332	-109
2021	1647	573	416	552	377
2022	1876	398	176	304	-269
2023	2294	463	247	367	122
2024	2262	627	346	478	141

Source: compiled by the author based on MHP (2017; 2021; 2023; 2024)

In 2016-2017, MHP demonstrated stable growth in financial results. Revenue increased from USD 822 million in 2016 to USD 970 million in 2017 (+18%), while net profit more than doubled from USD 102 million to USD 257 million. Gross and operating profits also showed positive dynamics, creating a financial basis for investments in modernisation and further digital transformation. In 2020-2024, MHP's financial results fluctuated, reflecting a combination of crisis challenges and gradual recovery. In 2020, the company generated revenue of USD 1.414 billion and gross profit of USD 322 million for the first nine months, resulting in an operating profit of USD 194 million. However, the year ended with a loss of USD 109 million, which was due to both currency losses and unstable market conditions. In 2021, the situation improved: revenue grew by 16% to USD 1.647 billion, gross profit increased to 573 million USD (+78%), and operating profit more than doubled to USD 416 million. Adjusted EBITDA increased by 66% to USD 552 million, and net profit amounted to 377 million USD, contrasting with the negative results of the previous year. This indicates a recovery in profitability due to increased production, improved margins, and stabilisation of exchange rate fluctuations. However, in 2022, the full-scale war in Ukraine became a decisive negative factor. Despite revenue growth to USD 1.876 billion, gross profit declined by 31%, operating profit fell by half, and adjusted EBITDA declined by almost half. The net financial result was negative: a loss of USD 269 million. This was due to war-related expenses, logistics problems and rising energy costs. In 2023, a gradual recovery began: revenue grew to USD 2.294 billion, gross profit rose to USD 463 million, operating profit increased by 40% to USD 247 million, and adjusted EBITDA amounted to USD 367 million (+21% compared to 2022). Net profit reached USD 122 million after losses in the previous year. In 2024, the positive trend continued: gross profit grew by 35% to USD 627 million, operating profit rose to USD 346 million (+40%), and adjusted EBITDA to USD 478 million (+30%). Net profit increased to USD 141 million.

During the period 2020-2024, MHP's investment policy was shaped by the need for large-scale modernisation and adaptation to crisis conditions, and external financing

became substantial in this process. The involvement of strategic partners, such as the Saudi Agricultural and Livestock Investment Company (2025), which invested approximately USD 54 million in the company's shares in September 2024, strengthened MHP's position in the Middle East and was used for the implementation of joint projects in the agricultural sector. At the same time, over USD 53 million was allocated to the construction of an incubator, a feed mill and poultry farms, which underscores the company's desire to ensure vertical integration of the production process (Information about MHP, 2025). Investments in digitalisation, which have become a key element of the business model transformation, should be highlighted separately. In 2024, the IT budget reached USD 27 million, of which more than USD 20 million was invested in 2022-2023 in the implementation of the ERP system, Systems, Applications and Products in Data Processing, Suite 4 for High-Performance Analytic Appliance (SAP S/4HANA). This made it possible to create a single integrated platform for managing all business areas, from production and logistics to finance and sales. At the same time, the company actively invested in the digitalisation of agricultural production processes, the application of big data analytics and risk management systems.

Logistics became another area of development: MHP made its first investment in the logistics business by acquiring KTL Ukraine to scale up maritime transport and expand its presence in international markets. This increased the efficiency of supply chains and reduced transportation costs (Rodak, 2025). Equally relevant was the focus on green energy: the company doubled its investments in this area and announced plans to build a 60 MW wind farm by the end of 2025. This correlates with both the strategic goals of improving energy efficiency and the requirements of environmental sustainability, which is a determining factor for competitiveness in European markets (How MHP develops..., 2024). Thus, MHP's investment strategy for 2020-2024 combined financing for production modernisation, digital transformation, logistics development and environmental projects. It became the basis for strengthening financial results, expanding export potential and increasing the company's long-term profitability even in crisis conditions.

Prospects for the introduction of innovative technologies in the food industry of Ukraine

In 2020-2024, the food industry of Ukraine operated in conditions of profound economic and social instability caused by the COVID-19 pandemic, military actions and heightened geopolitical risks. Despite this, the industry demonstrated a relatively high level of innovation activity, which manifested itself in a significant increase in capital investment, the introduction of new technologies, and the expansion of international presence in key export markets. One of the key factors confirming the stability and innovation of the industry is the dynamics of capital investments. In 2024, the total volume of capital investments in the food industry of Ukraine amounted to approximately UAH 33.4 billion, which is 91.1% more than in the crisis year of 2023. Most investments, namely about 70.9%, were directed towards the renewal of machinery and equipment. This indicates the strategic focus of enterprises on modernising production capacities, introducing digital technologies and ensuring energy efficiency. In the future, this direction is expected to remain a priority, as equipment modernisation and production digitalisation are key prerequisites for increasing productivity and reducing production costs (Ivchenko *et al.*, 2024).

Despite objective difficulties, the food industry remained attractive to foreign investors. Foreign direct investment in food production in 2023 amounted to approximately USD 67.3 million. Although this figure is lower than in 2021-2022, the trend indicates that international companies remain interested in the Ukrainian market even during the period of military action and devaluation of the national currency. This is attributed to both the high export potential of the industry and the prospects for further modernisation of production, focused on compliance with European food quality and safety standards. In the coming years, a substantial driver will be the emphasis on the production of organic and functional products, which are in high demand on world markets (Ivchenko *et al.*, 2024).

A separate area of focus was the introduction of innovations in energy efficiency and renewable energy sources. In 2020-2024, several projects were implemented in Ukraine to utilise biogas plants for the environmentally friendly disposal of organic waste from the food industry. Biogas complexes have become a significant element of the circular economy: they have reduced the burden on the environment and greenhouse gas emissions, while providing enterprises with independent sources of electricity and heat. Biogas plants are widely used for the environmentally friendly disposal of organic waste from the food industry, sugar factories, and fruit and vegetable processing. For example, the MHP agricultural holding operates several biogas complexes (Biogas Ladyzhyn with a total capacity of over 12 MW and Orel-Leader with 5.5 MW), which produce electricity from organic waste. Other large producers in the food industry, such as Astarta, also have biogas plants based on sugar factories with a total capacity of about 12 MW (Bioenergy Complex in Hlobyn, Hlobyn

Sugar Factory, Hlobyn Processing Plant). Further development is expected in the construction of biogas and wind complexes, which will significantly strengthen the energy independence of the industry by 2030 (Agravery, 2020).

In addition to biogas solutions, the food industry has also seen a widespread transition to solar energy. Several companies, including MHP and Agro-Region, have installed solar power plants, which have reduced their dependence on traditional energy sources and partially offset the rise in electricity prices during the crisis years. The available examples demonstrate the real movement of the industry towards decarbonisation and increased energy independence. In the future, solar power stations will be integrated into the production complexes of medium and large enterprises, which will meet the European requirements for a "green transition" (Solar Max, 2025). State support for innovation became a relevant area of development. In 2020-2025, programmes were implemented to stimulate investment in the food industry, among which the programme "Support for farms and other agricultural producers" (Order of the..., 2024) is worth highlighting. In 2025, more than UAH 4.7 billion was allocated for its implementation. The programme provided not only budget subsidies but also grants and loans at preferential rates of "5-7-9%" (BDO, 2025). Such instruments contributed to the preservation of small and medium-sized businesses, which are the basis for the development of the food industry, and supported the renewal of the material and technical base and the introduction of modern technologies. In the future, state support will increasingly target the financing of innovative projects, especially in the field of energy efficiency and digitalisation, which correlates with the European Green Deal policy.

The development of innovation in Ukraine's food industry is also closely linked to the expansion of export geography. In 2020-2024, China, Egypt and India remained the main importers of Ukrainian food products, traditionally forming the basis of foreign supplies. In addition, the Netherlands, Spain, Turkey, Poland and Italy were substantial for consumers. During this period, there was an increase in supplies to Iraq, as a result of which the country entered the top 10 importers of Ukrainian products, ahead of Germany. This indicated the diversification of markets and the strengthening of Ukraine's presence in the markets of Asia and Africa. Further development of foreign trade is focused on expanding exports of high-value-added finished food products, which will encourage producers to more actively implement international quality standards and traceability technologies (Association of Milk Producers, 2025). In 2020-2024, Ukraine's food industry also actively integrated into the European sustainable development space. In the context of adapting to European standards, companies implemented measures to increase material efficiency, reduce energy and water consumption, and minimise waste. During the period of military operations, the issue of resource conservation was

of strategic importance. In the coming years, the industry is expected to intensify its implementation of digital resource management technologies, CO₂ emission monitoring systems, and circular economy solutions, which can be used to reach EU requirements for environmental reporting and market access (Green energy in..., 2024).

Notably, in times of crisis, innovation has become the main tool for food industry enterprises to adapt. The use of biogas and solar power plants has reduced energy costs and increased production autonomy. The modernisation of equipment through capital investments has ensured an increase in labour productivity and a reduction in costs per unit of output. The attraction of foreign investment has contributed to the introduction of international management practices and production technologies. In turn, state support programmes have provided the financial basis for expanding innovation even in times of high risk. Therefore, an analysis of trends combined with the outlined prospects indicates that Ukraine's food industry has the potential to maintain and strengthen its competitive position. Further growth in investment in production modernisation, the development of renewable energy sources, the export of finished products and integration into the European market create the conditions for the formation of a new model of sustainable development capable of ensuring the economic and technological independence of the industry in the long term.

Discussion

In 2020-2024, Ukraine's food industry operated in conditions of profound economic and social instability caused by the pandemic, military actions and increased geopolitical risks. The sector became one of the key areas ensuring food security and supporting employment, but at the same time suffered significant losses due to the destruction of production facilities, supply disruptions and a decline in purchasing power. In such conditions, innovation, digitalisation and modernisation of production became the defining mechanisms of adaptation. M. Alkhafaji (2024) addressed the global context. The study analysed the leading trends in the global food industry, including production automation, the use of artificial intelligence, the development of alternative protein sources, as well as food safety and supply chain management issues. In this respect, it echoes the present study in recognising innovation and environmental practices as key means of ensuring sustainability. However, while M. Alkhafaji offered a strategic vision of global challenges; the present study was more applied, addressing survival in the context of a pandemic, full-scale invasion, and economic instability. Similar differences were observed in comparison with the study by K. Lamm *et al.* (2024). The study outlined the global critical issues of the industry: product safety, staff training, quality management and the introduction of new technologies, especially artificial intelligence-based systems. The current study, on the other hand, emphasised innovative mechanisms for overcoming the crisis conditions of inflation, war damage and logistical difficulties. Both approaches agreed that innovation determined the future of the industry

but differed in scale: the global conceptual level was contrasted with local practical adaptation. Similar logic was evident in the comparison with B. Li *et al.* (2021). Both studies recognised the importance of digital technologies and environmental solutions for the modernisation of the food industry. However, in this case, the emphasis was on the crisis realities of military and economic instability, while B. Li *et al.* addressed long-term strategies: biotechnology, optimisation of global supply chains, and digital systems on a global economic scale. What they had in common was the recognition of the leading role of innovation, but the difference lay in the strategic perspective versus crisis practice.

Another vector is observed in the study by M. Du *et al.* (2025), which examined global trends in sustainable development, changing consumer preferences, and the role of digital platforms in the transformation of business models. This study remained in the crisis realm, focusing on digitalisation and modernisation as tools for maintaining competitiveness in the context of a full-scale invasion. Similarly, Y. Yang *et al.* (2025) emphasised the importance of international cooperation, the green economy, and food security. Similar parallels can be drawn with the study by T. Zhao *et al.* (2024), which analysed the impact of the COVID-19 pandemic on Chinese companies. The main focus was on flexible business models and digital solutions, while this study demonstrated how innovation supported the food industry in the realities of full-scale invasion and economic destabilisation. Both examples emphasised that innovation was the determining factor in the ability of businesses to remain resilient. G. Jingzu *et al.* (2024) addressed the consumer aspect: the quality of information, the convenience of online platforms, and the impact of digitalisation on user satisfaction. In contrast, the Ukrainian study highlighted production and management aspects: ERP, CRM, and TMS systems and artificial intelligence as tools for maintaining business sustainability. Thus, both works recognised the driving force of innovation but viewed it from different consumer and production perspectives. The study by A. García-Sánchez & R. Rama (2025) shifted the focus to the environmental dimension: eco-innovations in the Spanish food and beverage industry and the regulatory factors of their long-term impact. The current study, on the other hand, emphasised digitalisation and entry into new markets as means of survival in wartime. The common factor was the recognition of innovation as a driver of adaptation, but the difference lay in the focus: strategic environmental decisions versus practical crisis response mechanisms. This study and the work of M. Soler-Porta & B. Rodríguez Díaz (2024) aligned in conclusion that innovation was key to business resilience during the crisis. M. Soler-Porta & B. Rodríguez Díaz analysed family-owned companies in the Spanish jewellery sector during the COVID-19 pandemic, showing that even conservative businesses overcame the effects of the crisis thanks to innovation. In contrast, this study analysed the food industry in Ukraine during wartime, where innovation

ensured not only financial stability but also food security, logistics adaptation and entry into new markets.

A comparison with the study by L. Collado *et al.* (2024) showed a shared vision of innovation as the basis for sustainability in the food industry. However, the emphases were different: L. Collado *et al.* addressed innovation through the lens of local agri-food systems, their dual transformation and social value for communities, while this study analysed enterprises in wartime, focusing on digitalisation, modernisation and bioenergy as means of ensuring food security. This difference in context was even more evident in comparison with the study by K. Łukiewska (2024). Both studies viewed crises as catalysts for innovation, but the sources of these crises differed: the pandemic and regulatory changes in the EU in the case of K. Łukiewska were contrasted with war-related destruction and economic instability in Ukraine. Therefore, while the European study emphasised long-term sustainability, the Ukrainian study showed mechanisms for short-term survival.

A similar dialogue between strategic and crisis approaches was also evident in the study by T. Menichini *et al.* (2024). Both works recognised the importance of digitalisation, environmental orientation and business model adaptation as a way to counter challenges. However, T. Menichini *et al.* highlighted organisational flexibility and risk management in a global context, while this study demonstrated how the same principles were applied in much harsher military conditions, with the destruction of production facilities and disruptions in logistics. A similar division was observed when comparing this study with I. Benedetti *et al.* (2024). Innovation and digitalisation were seen as prerequisites for maintaining competitiveness, but the context was different. I. Benedetti *et al.* emphasised strategic environmental innovations and regulatory requirements in Europe, while this study showed how companies adapted to resource shortages and infrastructure destruction. Similarly, in the study by F. Orazi & F. Sofritti (2024), innovation was interpreted as the basis for sustainability, but again on different scales. European authors focused on strategic innovation management and digital transformation in long-term business models, while the Ukrainian study revealed their role in overcoming the consequences of a full-scale invasion daily: logistical barriers, lack of funding, and destroyed production facilities.

M. Ambrosini (2024) proposed a different view of the situation. While this study focused on financial and technological aspects and the modernisation of production, M. Ambrosini analysed the social mechanisms of the Italian agri-food sector, in particular its dependence on migrant labour and forms of "subordinate integration". What remained common was that in both cases, the adaptation was heterogeneous: Ukrainian enterprises implemented innovations in different ways, while Italian regions demonstrated different models of migrant integration. However, while in Ukraine the adaptation was expressed through innovative solutions, in Italy it was expressed through social forms of labour organisation. The present study and the work of

P. Aerni (2025) shared a similar assessment of innovation as a key factor in the sustainability of agricultural and food systems but differed in context. Both emphasised that the crisis stimulated modernisation and digital transformation. This study addressed military risks, rising costs, logistical difficulties, and the adaptation of Ukrainian enterprises through digitalisation and new management approaches. P. Aerni analysed the global perspective, emphasising the role of institutions and international cooperation in overcoming inequality and ensuring food security. There was a common recognition of the multifactorial nature of innovation processes and their importance for competitiveness, but this study was applied in nature and showed the local experience of Ukraine, while P. Aerni offered a global vision of the transformation of food systems.

The present study and the work of M. Fazle Rabbi & M. Bin Amin (2024) converged in their assessment of innovation as a key factor in the resilience of agricultural and food systems. Both emphasised that crises stimulated new technologies and management decisions. This study highlighted the risks of war, the destruction of capacity, and the need for digitalisation of Ukrainian enterprises, while M. Fazle Rabbi & M. Bin Amin focused on climate threats, resource scarcity, and the social vulnerability of farmers in developing countries. The common feature was the recognition of the multifactorial nature of innovation, but this study was applied in nature, while M. Fazle Rabbi & M. Bin Amin proposed a conceptual model of inclusive innovation. A similar difference in scale was observed in the study by Y. Yuan *et al.* (2025). This study analysed innovation as a global mechanism for ensuring efficiency and food security, using systemic models to predict long-term effects. In contrast, the current study demonstrated how the same technologies became a means of survival in specific crisis conditions of full-scale invasion, infrastructure destruction and logistical barriers. Thus, global systemic approaches were contrasted with practical solutions at the local level.

A. Silva *et al.* (2024) emphasised the circular economy and environmental standards in Southern Europe. There, innovation was viewed as an element of sustainability that ensured environmentally balanced production. In contrast, this study interpreted innovation as a means of overcoming military challenges and financial instability. As a result, the environmentally-oriented conceptual approach in A. Silva *et al.* was contrasted with the crisis-driven practical Ukrainian context, but in both cases, the role of innovation as a driving factor in increasing competitiveness was confirmed. C. Richartz *et al.* (2025) studied the impact of the pandemic on consumer preferences in Germany. The study noted an increase in demand for local and sustainable products, while this study showed how war risks and inflation stimulated the modernisation of production and the digitalisation of enterprises. Thus, the crisis changed both consumer behaviour and producer strategies, although the focus was different: consumer practices versus production and financial decisions. Another aspect of

the global dimension of the food crisis was highlighted by T. Nakamura *et al.* (2024). The study discussed the response of German society and state institutions to the pandemic, full-scale war in Ukraine, and extreme weather conditions. The significance of socio-economic support measures, including tax breaks and food banks, was emphasised. The same study recorded the production and technological mechanisms of adaptation of enterprises: modernisation, digitalisation and innovation. In both cases, a common logic was observed: global crises forced the search for new adaptation mechanisms, but the focus shifted from social support to technological solutions.

A comparison of different approaches showed that innovation was recognised as a universal factor in increasing competitiveness and ensuring food security, but how it was applied was determined by context. Global studies emphasised long-term models of sustainable development, environmental standards and international cooperation. In applied research, digitalisation, modernisation of production, adaptation of logistics and overcoming resource shortages in crisis conditions was substantial. Thus, innovation was not only a means of strategic development but also a tool for survival, ensuring the sustainability of the food industry at various levels, from local to global.

Conclusions

The study established that Ukraine's food industry developed amid profound crisis challenges in 2020-2024 but was able to demonstrate adaptability and innovation. Statistical data showed uneven dynamics: the volume of products sold increased from UAH 480 billion in 2020 to a peak of UAH 708.27 billion in 2022, after which it decreased to UAH 633 billion in 2023 and UAH 522 billion in 2024. Despite these fluctuations, the production index rose to 106.8% in 2023 and to 115.9% in the first half of 2024, demonstrating the ability of enterprises to quickly restore production capacity. The structure of production also changed: the share of meat and meat products increased to 20.5% in 2023, and sugar production increased eightfold

in 2015-2023, confirming the transformation of the market under the influence of price and consumer factors.

Exports remained a key component: in 2023, the value of exports of finished food products exceeded USD 3.27 billion, and in 2024, it exceeded USD 4 billion. At the same time, 76% of producers faced interruptions in the supply of raw materials in 2022, and 21% faced energy supply problems, which increased production costs. Despite this, a gradual recovery took place in 2023-2024 thanks to modernisation, digitalisation and the search for new markets. An example of this was the activity of MHP: export revenue in 2024 amounted to USD 1.7 billion, investments in digitalisation amounted to USD 27 million, and financial results changed from a loss of USD 269 million in 2022 to a profit of USD 122 million in 2023 and USD 141 million in 2024. Total capital investment in the food industry in 2024 reached UAH 33.4 billion (91.1% more than in 2023), of which 70.9% was directed towards equipment upgrades.

In addition, the development of the Biogas Ladyzhyn (over 12 MW) and Oril-Leader (5.5 MW) biogas complexes within the MHP structure and the complex in Hlobino (Astarta) with a capacity of about 12 MW confirmed the integration of renewable energy. Overall, innovation has become the main mechanism for adapting the industry, reducing costs, improving quality, export potential, and ensuring competitiveness even in times of instability. The prospect for future research is to extend the analysis to a longer period, including an assessment of the impact of green technologies and digitalisation on the sustainability of Ukraine's food industry.

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Особливості інноваційного розвитку підприємств харчової галузі в кризових умовах в Україні

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Анотація. Метою даного дослідження було виявлення ключових тенденцій та особливостей впровадження інноваційних рішень у підприємствах харчової промисловості України під час економічної та соціальної нестабільності. Методологія ґрунтувалася на використанні статистичного та економіко-статистичного аналізу для оцінки обсягів виробництва, індексу динаміки й фінансових результатів, контент-аналізу наукових публікацій, а також кейс-стаді компанії МХП. Результати засвідчили, що у 2020 році обсяг реалізованої харчової продукції становив 480 млрд грн, у 2022 році зріс до 708,27 млрд грн, у 2023 році знизився до 633 млрд грн, а у 2024 році – до 522 млрд грн. Індекс виробництва коливався: у 2022 році він знизився до 78,4 %, однак у 2023 році відновився до 106,8 % і у першій половині 2024 року досяг 115,9 %. Експорт готових харчових продуктів у 2023 році перевищив 3,27 млрд доларів США, а у 2024 році – понад 4 млрд доларів США. Фінансові результати МХП відображали коливання: після збитку у 269 млн доларів США у 2022 році компанія отримала чистий прибуток 122 млн доларів США у 2023 році та 141 млн доларів США у 2024 році. Загальні капітальні інвестиції у харчову промисловість у 2024 році склали 33,4 млрд грн, що на 91,1 % більше, ніж у 2023 році, з яких 70,9% припадало на модернізацію обладнання. Також впровадження біогазових комплексів (МХП – понад 12 МВт, «Астарта» – близько 12 МВт) і сонячних електростанцій свідчило про поширення відновлюваної енергетики у виробництві. Практичне значення дослідження полягає у можливості використання його результатів для розробки стратегій модернізації, цифровізації та енергоефективності, що забезпечували стійкість і конкурентоспроможність підприємств харчової промисловості України в умовах кризових викликів

Ключові слова: трансформації; адаптація; промисловість; ефективність; цифровізація; конкурентоспроможність; виробництво

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Strategic guidelines for business development in the context of post-war economic reconstruction in Ukraine

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Abstract. Ukraine, in the context of post-war recovery, requires a structural transformation of its national economy, which necessitates a revision of strategic guidelines for business development to ensure its efficiency, resilience, and innovativeness. The purpose of the study was to theoretically substantiate the essence of strategic business development guidelines, analyse the current challenges of the business environment, and develop recommendations for aligning state economic policy with the needs of the entrepreneurial sector during post-war reconstruction. A systemic, comparative, and structural-functional approach was applied, which ensured a comprehensive analysis of the business environment and identification of key directions for enterprise development in the post-war period. The essence of the concept of “strategic business guidelines” was defined and scientific approaches to its interpretation were systematised. It was established that the essence of strategic guidelines lies in determining the key directions of enterprise development that align its internal potential with external challenges. Strategic approaches to enhancing business efficiency, innovativeness, and resilience under post-war conditions were substantiated. Recommendations were formulated for aligning state policy with the needs of the entrepreneurial sector, aimed at stimulating investment, innovation, and structural modernisation of the economy. A model for harmonising state policy with business needs was developed, contributing to increased efficiency, innovation, and resilience of enterprises. The main trends in business environment development were identified, and priority directions for the structural transformation of the national economy were determined. The research results can be applied by public administration bodies in shaping business support policies and by enterprises in developing strategic plans for sustainable economic progress in the post-war period

Keywords: strategic management; focus on innovation; flexibility and social responsibility; structural modernisation of the economy; changes in the external environment

Introduction

In the contemporary context of globalisation and intensified international competition, the strategic directions for business economic development – shaped by the transformative processes in the global economy, digitalisation, sustainable development, and the transition to new management models based on innovation and partnership between the state, business, and society – are acquiring particular importance. Global trends demonstrate that the foundation of business success is not only the efficient use of resources but also the ability to adapt to the dynamic changes in the external environment. For developing countries, including Ukraine, the formation of strategic guidelines that can align national interests with global trends is especially relevant. This requires the development of high-tech businesses, export-oriented industries, modernisation of the production base, digitalisation of entrepreneurial processes, and integration into international business networks. Moreover, in order to mitigate the effects of contemporary global transformations and the large-scale challenges caused by the war in Ukraine, the issue of determining the strategic directions for business economic development has gained particular significance. The full-scale aggression by the Russian Federation has led to the destruction of infrastructure, the loss of production capacities, changes in logistics chains, and a reduction in both markets and labour resources. At the same time, in the post-war period, these processes create new opportunities for the structural modernisation of the economy, increasing the efficiency of entrepreneurship, digitalisation of business, and integration into the European economic space.

An important trend in justifying the strategic directions for business economic development is the rethinking of traditional approaches to its management over the past century. According to C.K. Prahalad & V. Ramaswamy (2004),

while in the 20th century strategy predominantly relied on market and competitor analysis, in the 21st century, its focus has shifted towards creating value for consumers, intellectual capital, and the innovation ecosystem. Business is viewed not only as an economic entity but also as a participant in global societal development. As noted by V.M. Heyets (2023), the strategic development of business in post-war conditions must be based on the principles of “adaptive resilience”, i.e., the ability of businesses not only to recover but also to create new competitive advantages. The contemporary conditions necessitate a reassessment of the strategic directions for economic activity: from short-term survival to long-term sustainable development.

According to the research by M. Shapovalov (2023), the post-war reconstruction of Ukraine’s economy requires an institutional transformation of the entrepreneurial environment, the development of cluster initiatives, the attraction of foreign investment, and the strengthening of partnerships between the public and private sectors. At the enterprise level, this means a shift towards strategic management focused on innovation, flexibility, and social responsibility. The issue lies in the fact that most Ukrainian enterprises are currently operating in a situation of high uncertainty – unstable legislative frameworks, limited access to finance, and a shortage of qualified labour. In such conditions, traditional approaches to strategic planning do not ensure effective economic development for businesses. It is necessary to determine new strategic directions that account for wartime and post-war risks, the change in global supply chains, digital transformation, and the societal needs for reconstruction.

Contemporary research on the post-war recovery of Ukraine’s economy has unanimously shown that strategic business directions were only shaped once clear future

scenarios emerged. A. Cherep & A. Leshchenko (2024) demonstrated that the modernisation of industry, the establishment of an “industrial visa-free regime” with the EU, and the transition to “green” energy could create up to 1.2 million new jobs by 2030, but only if state policy is aligned with the needs of small and medium-sized enterprises (SMEs). V. Prokhorova *et al.* (2025) proposed three recovery scenarios: the optimistic scenario (+4.8% GDP growth annually) would be possible only with massive investments in digital technologies and SMEs, the baseline scenario (+2.1%) reflected an inertial development path, and the pessimistic scenario (-0.7%) predicted new energy shocks. The authors emphasised that without alignment of fiscal policy with entrepreneurs’ needs, Ukraine would remain stuck in the “middle” scenario. M.I. Guba *et al.* (2023) expanded the picture by highlighting institutional priorities: anti-corruption reforms, a unified national innovation strategy, and public-private clusters in artificial intelligence and renewable energy raised the share of high-tech exports from 6% to 25% over five years. Thus, the reviewed works provided a coherent logic for the introduction of this paper: scenario forecasting, specific growth drivers, and institutional guarantees of implementation substantiated the main thesis that strategic business orientations have become not a declaration but a scenario-supported roadmap, where the state and enterprises moved in sync.

The aim of this research was to substantiate the theoretical foundations and develop practical recommendations for shaping the strategic directions of business economic development during the post-war reconstruction of Ukraine, aimed at ensuring sustainable economic growth, increasing the competitiveness of national enterprises, and integrating into global economic processes. The implementation of the stated objective involves addressing the following tasks: to define the essence of strategic business orientations and analyse the current trends and challenges of Ukraine’s post-war business environment; to identify the priority areas for the structural transformation of the national economy; to develop strategic approaches and recommendations for aligning state policy with the needs of entrepreneurs to ensure the effectiveness, innovativeness, and sustainability of businesses during the reconstruction phase.

The scientific novelty of the obtained results lies in the development of theoretical and methodological approaches to shaping the strategic directions of business economic development in the context of Ukraine’s post-war reconstruction, which deepen the current understanding of the processes of transformation of the national economy in the post-crisis period.

Materials and Methods

The informational base of the research consisted of analytical reports from international organisations, specifically the World Bank (World Bank, 2025) and the Organisation for Economic Co-operation and Development (OECD, 2025), as well as scientific works from both foreign and Ukrainian researchers that addressed issues of strategic management,

innovation economy, sustainable development, and post-crisis business recovery (Drucker, 2007; Schumpeter, 2017; Shynkaruk, 2022).

In the course of the research, a combination of general scientific and special methods was employed, ensuring a comprehensive study of the strategic orientations of business economic development during Ukraine’s post-war reconstruction. The system analysis method was used to identify the interrelationships between internal and external factors influencing the formation of business strategic orientations. The dialectical method allowed for the examination of the evolution of approaches to the strategic development of entrepreneurship in the context of socio-economic transformations. The comparative method was applied to contrast the international experience of strategic management with the practices of Ukrainian enterprises in the post-war period, while the structural-functional method was used to identify the components of the system of strategic orientations and their role in ensuring business competitiveness.

The methodological foundation of the research was based on contemporary concepts of strategic management, innovative development, and sustainable economic growth. The following works were analysed within the scope of the study: M. Porter (1985) – the justification of competitive advantages and strategic positioning of enterprises in a dynamic environment; J. Barney (2014) – the resource-based view, which defines the role of internal resources in forming business competitive advantages; V.M. Heyets (2000) – the concept of the systemic transformation of the economy and aligning state policy with business needs; J.A. Schumpeter (2017) – the theory of creative destruction, which presents innovation as a key driver of structural changes; P. Drucker (2007) – ideas for effectively managing change to ensure business sustainability; and L.V. Shynkaruk (2022) – an analysis of the current trends in the development of the Ukrainian business environment amid transformational processes.

The overall methodological approach was based on the principles of systematics, comprehensiveness, innovation, and sustainability. This allowed for the integration of theoretical foundations of strategic management with practical economic analysis tools and ensured the scientific validity of the conclusions and recommendations aimed at shaping effective strategic directions for business development in the context of Ukraine’s post-war reconstruction.

Results and Discussion

The issue of shaping strategic directions for business economic development is the subject of active scientific debates in both domestic and foreign economic literature. Scholars examine it through the lenses of strategic management, innovation economics, sustainable development, and state policies supporting entrepreneurship. Classical principles for forming competitive business strategies are established in the works of M. Porter (1985), who defined the strategic advantages of enterprises through industry structure

and competitive forces analysis. His approach became the foundation for contemporary models of business strategic positioning in a global environment. J. Barney (2014) developed the resource-based strategy concept, arguing that the source of long-term competitive advantages lies in a company's unique internal resources – knowledge, competencies, and technologies. This approach is particularly relevant for Ukrainian companies that aim to build recovery strategies after wartime losses based on their own potential.

The innovative aspect of strategic development was explored by J.A. Schumpeter (2017), who defined entrepreneurship as the driving force of economic dynamics through “creative destruction”. This view is also shared by contemporary innovation theorists such as E. Brynjolfsson & A. McAfee (2014), who considered digitalisation as a key direction for business growth strategies in the 21st century.

The concept of value creation in partnership with the consumer was introduced by C.K. Prahalad & V. Ramaswamy (2004). They emphasised that effective modern business strategies are based on co-creation, trust, and innovative interaction with customers. P.F. Drucker (2007) in his works highlighted the importance of entrepreneurial flexibility and innovation management as fundamental elements of strategic thinking. His approach allows businesses to adapt to the changing conditions of the economic environment, which is especially critical for Ukraine during the reconstruction phase. Among contemporary researchers on the international aspects of strategic development, the contributions of the OECD (2025) and the World Bank (2025) stand out, as they reveal trends in post-crisis economic recovery and the role of the private sector in ensuring sustainable growth.

Ukrainian scholars also devote significant attention to the formation of strategic orientations in the context of a transforming economy. V.M. Heyets (2000) emphasised the need to combine state recovery policies with the activation of regional entrepreneurial potential. According to him, business strategic priorities should be formed in line with national goals for innovative development. L.V. Shynkaruk (2022) explored the institutional foundations of an innovative economy and stressed that the strategic orientation of business in Ukraine must consider global trends in digitalisation, integration into the global market, and the development of human capital.

In the context of dynamic changes in the global economic environment, the concept of “strategic directions for business economic development” assumes particular importance, as it determines the directions, priorities, and mechanisms for achieving long-term goals for enterprises. Strategic directions serve as the intellectual foundation for management decisions that ensure the competitiveness and sustainability of businesses in a changing market environment (Porter, 1985; Barney, 2014). The essence of strategic directions lies in identifying the key areas of enterprise development, aligning its internal potential with the challenges of the external environment. They are formed based on a thorough analysis of the market, technological trends, socio-economic changes, and political factors. In this context, strategic directions can be viewed as a strategic management tool that integrates the goals, resources, and opportunities of the enterprise with global economic development trends.

The main definitions regarding the economic content of the concept of “strategic directions for business” are provided in Table 1.

Table 1. Approaches of foreign and ukrainian scholars to the interpretation of the concept “Strategic directions for business”

Source	Content of the approach to defining the concept	Key focus
M. Porter (1985)	Strategic directions are viewed as long-term business development paths aimed at creating competitive advantages through market positioning and increasing value for the consumer.	Competitive strategy, positioning, value creation
H.I. Ansoff (1965)	Business directions are defined as a system of goals and strategic alternatives guiding the enterprise in choosing growth paths (market, product, diversification).	Growth, strategic planning
P.F. Drucker (2007)	Strategic directions are the definition of a business mission, a vision of its future, and directions for resource use to achieve long-term results.	Mission, vision, long-term development
J. Barney (2014)	Strategic directions are understood as the internal competencies and unique resources of the enterprise, which form the foundation of sustainable competitive advantages.	Resource theory, competitiveness
V. Heyets (2000)	Strategic directions for business are a system of priorities aligning the interests of the state, business, and society in the context of post-crisis economic transformation in Ukraine.	Institutional interaction, economic recovery
L.V. Shynkaruk (2022)	Views strategic directions as a mechanism for aligning short-term and long-term goals of the enterprise with national economic development priorities.	Alignment of strategic management levels
T. Hrynko et al. (2023)	Strategic directions for business are understood as the guiding foundation for managerial decision-making in the context of a dynamic environment and digital transformation.	Flexibility, adaptability, digitalisation
V. Voronin (2019)	Considers strategic directions to be a set of strategic priorities that ensure effective resource allocation and stability in the enterprise's development.	Efficiency, resource balance

Table 1, Continued

Source	Content of the approach to defining the concept	Key focus
L. Melnyk (2019)	Interprets strategic directions as key areas of innovative business activity that contribute to increased competitiveness and sustainable development.	Innovation, sustainable development
I. Savchuk (2022)	Emphasises that strategic directions for business are formed under the influence of state reconstruction policies, international integration, and military-political challenges.	Post-crisis development, state regulation

Source: summarised by the authors

The analysis of the approaches of both foreign and domestic scholars to the interpretation of the concept of “strategic directions for business” reveals the multidimensional nature of this phenomenon, encompassing economic, managerial, institutional, and social aspects. In classical works (Ansoff, 1965; Porter, 1985; Drucker, 2007), strategic directions are viewed as tools for ensuring competitive advantages and effective market positioning for businesses. Contemporary researchers (Heyets, 2000; Shynkaruk, 2022; Hrynko *et al.*, 2023) emphasise the alignment of business strategic priorities with state goals, digital transformation, and post-crisis development conditions. Therefore, strategic directions for business can be defined as a system of long-term priorities and principles that shape the direction of a company’s economic development, taking into account both internal capabilities and external challenges, especially in the context of post-war reconstruction of Ukraine’s economy.

The current trends and challenges affecting Ukraine’s business environment enable the formulation of the following strategic directions for business economic development in the post-war recovery:

1. Economic recovery and business adaptation. After a significant GDP decline of 28.8% in 2022, Ukraine’s economy rebounded by 5.5% in 2023, with growth at 2.9% in 2024. This indicates a gradual recovery of economic activity, though the pace of growth is slowing. Businesses continue to adapt to new conditions, including through the relocation of enterprises to safer regions and the opening of new companies in promising sectors such as information technology, construction, and logistics (Centre for Economic Strategy, 2025).

2. Security risks and infrastructure challenges. Security remains the primary barrier to conducting business.

According to a study, 55% of enterprises identified security risks as the main obstacle to operations. Damaged infrastructure, disrupted supply chains, and the outflow of skilled labour are negatively affecting businesses, particularly in frontline regions (Visit Ukraine Today, 2024).

3. Energy and labour shortages. The National Bank of Ukraine has lowered its GDP growth forecast for 2025 to 1.9%, citing energy shortages, a lack of labour, and the consequences of infrastructure destruction. These factors limit the potential for the full recovery of economic activity (Daycom, 2025).

4. Institutional Support and Government Initiatives. The government has introduced tax reforms and entrepreneurship support programmes, but frontline regions remain vulnerable (European Business Association, 2025). A significant portion of entrepreneurs is considering relocating their businesses to safer regions within Ukraine, and a third are contemplating moving abroad.

5. Prospects for recovery and investment opportunities. Ukraine’s reconstruction should focus on investing in resilient companies and infrastructure, particularly in agribusiness, eco-friendly steel industries, and IT startups (Deloitte, 2023). This will create opportunities for economic growth and enhance the competitiveness of Ukrainian businesses in the global market.

The identification of priority areas for the structural transformation of Ukraine’s national economy during post-war recovery requires not only the restoration of damaged infrastructure but also deep structural economic transformation. This transformation will ensure the economy’s resilience, competitiveness, and integration into global economic processes. Table 2 highlights the following priority areas for such transformation.

Table 2. Priority areas for the structural transformation of Ukraine’s national economy in post-war reconstruction

Nº	Priority area	Description
1	Diversification of the production base and industrial modernisation	Transition from an economy dependent on a narrow range of industries to a balanced industrial complex with a high share of innovative and technologically intensive sectors, including the modernisation of metallurgy, machinery, and the chemical industry with the implementation of digital and “green” technologies.
2	Development of an innovative and digital economy	Creating conditions for the development of the IT sector, high-tech startups, platform services, and artificial intelligence, as well as implementing e-government systems and digital financial tools to integrate the Ukrainian economy into global digital chains.
3	Green transformation and energy independence	Development of renewable energy sources, energy-efficient technologies, and infrastructure for the production of green hydrogen and environmentally friendly materials to reduce dependency on energy imports and enhance energy security.
4	Development of SMEs and regional economy	Stimulating the growth of small and medium-sized enterprises through financial support, simplification of regulatory procedures, development of cluster models, and local investment initiatives, particularly in the affected regions.

Table 2, Continued

Nº	Priority area	Description
5	Institutional and legal transformation	Strengthening the institutional capacity of the state: improving anti-corruption mechanisms, reforming the tax and judicial systems, enhancing transparency in public procurement, and encouraging partnerships between the state and business.
6	Integration into international economic processes	Active participation of Ukraine in global value chains, attracting foreign investments, adapting production and service standards to EU requirements and global markets, developing transport and logistics infrastructure, and integrating financial markets.

Source: developed by the authors based on V.M. Heyets (2000), L.V. Shynkaruk (2022), I. Savchuk (2022)

Thus, the structural transformation of the national economy during the post-war recovery period must be based on a comprehensive approach that combines industrial modernisation, the development of an innovative and green economy, the stimulation of SMEs, the strengthening of institutions, and integration into the global economy. The implementation of these priorities will enable Ukraine not only to restore economic activity but also to ensure its sustainable and innovative development in the medium- and long-term.

In the current conditions of dynamic changes and post-crisis transformations, the development of strategic approaches to enhance the efficiency, innovativeness, and resilience of businesses is a key factor in ensuring the competitiveness of enterprises. Business efficiency is determined by the ability to optimally use available resources to achieve maximum results and ensure financial stability (Drucker, 2007; Barney, 2014). In this context, strategic planning should involve the integration of financial, production, and marketing processes, the use of control systems and performance evaluation indicators, as well as adaptation to changes in the external environment. The post-war economic recovery of Ukraine was intricately linked to the efficient management of green technologies and the revitalisation of business operations, especially in the context of shifting global and regional economic landscapes. Studies reviewed underscored the strategic importance of aligning economic recovery with low-carbon development and fostering resilient business models that could endure external shocks and volatility.

W. Strielkowski (2025) highlighted the potential of green hydrogen and ammonia economies as critical elements in Ukraine's post-war recovery. The transition to low-carbon technologies not only promised energy independence but also positioned Ukraine to become a leader in sustainable energy production, aligning with global trends towards decarbonisation. This aligned with the necessity of incorporating sustainable practices into business recovery strategies, which was crucial for fostering long-term economic growth in the region. The application of green technologies played a pivotal role in attracting international investments and creating new industries that were both innovative and resilient to global energy price fluctuations. Furthermore, D. Audretsch *et al.* (2023) addressed the broader economic costs of the ongoing conflict, particularly focusing on the loss of entrepreneurial capacity in Ukraine. Their study provided a quantitative analysis of the Russia-Ukraine war's impact on entrepreneurship, noting that the destruction of infrastructure, loss of human capital,

and disruption of supply chains had significantly stifled the entrepreneurial environment. However, their findings also emphasised the opportunities that arose from such adversity. For instance, the reconceptualisation of business models and the recovery of small and medium enterprises (SMEs) in more stable regions could have contributed substantially to the recovery process. This reflected a broader theme in the literature: strategic business decisions that focused on rebuilding lost entrepreneurial capacity would have been key to Ukraine's economic regeneration. Both sources contributed to understanding the multidimensional challenges and opportunities for Ukrainian businesses. The push toward greener industries, alongside strategies for rebuilding lost entrepreneurship, was considered as intertwined goals. As Ukraine focused on structural reforms, integrating innovative technologies with a renewed business environment proved to be crucial in ensuring that the recovery not only met immediate needs but also secured a sustainable and competitive position on the global stage. Incorporating findings from W. Strielkowski (2025) and D. Audretsch *et al.* (2023), it became evident that strategic recovery should not have solely concentrated on infrastructural restoration but also on fostering new business ecosystems that were adaptive, sustainable, and innovation-driven. This dual approach was essential for Ukraine to navigate the complexities of post-war reconstruction and emerge with a robust, future-ready economy.

Innovation in business acts simultaneously as both a mechanism for development and a factor of its sustainability. The systematic implementation of technological innovations, digital platforms, and new products allows enterprises not only to enhance their competitiveness but also to adapt more quickly to changes in market conditions and consumer expectations (Melnyk, 2019; Shynkaruk, 2022). Special attention should be given to fostering an internal innovation culture, stimulating creative thinking, and using strategic market trend analysis to generate new ideas. Business resilience, or its ability to maintain functionality and competitive positions in the face of external shocks, crises, and constant environmental changes, requires a strategic approach to risk management, resource diversification, and ensuring flexibility in operational processes (Heyets, 2000; Savchuk, 2022). Adaptive management models, which combine preventive and corrective measures, integrate innovative technologies into business processes, and ensure long-term stability for the enterprise, are essential.

In combination, strategic approaches to enhancing the efficiency, innovativeness, and resilience of businesses

should be based on the integration of the following components: systematic strategic planning; an innovation culture and technological modernisation; adaptive risk and resource management; and the integration of sustainable development principles and social responsibility. The implementation of these strategic approaches enables enterprises to create competitive advantages, ensure high productivity levels, and establish conditions for stable development in post-crisis and post-conflict environments. The content of strategic directions encompasses several key components (Prahalad & Ramaswamy, 2004):

- Mission and vision of business development. These shape the strategic identity of the enterprise and define its long-term role in society.
- Value priorities. Based on the principles of innovation, efficiency, responsibility, and sustainable development.
- Strategic growth directions. Innovation activities, digitalisation of business processes, diversification, internationalisation, and the development of partnership networks.
- Strategy implementation mechanisms. Investment policy, organisational changes, human resources strategy, and knowledge management system.
- Monitoring and evaluation system. A system that allows for the control of the effectiveness of strategic decisions and timely adjustments to the development trajectory.

In the context of Ukraine's post-war reconstruction, the strategic directions for business economic development acquire a particular substantive focus. They are aimed at restoring production potential, attracting investments, developing human capital, and forming a new model of sustainable economic growth. The main strategic priorities become innovation-driven modernisation of enterprises, digital transformation, export orientation, and integration into global value chains (Heyets, 2000; Shynkaruk, 2022).

In the context of Ukraine's post-war reconstruction, the strategic directions for business economic development acquire a unique substantive focus. They are aimed at restoring production potential, attracting investments, developing human capital, and forming a new model of sustainable economic growth. The main strategic priorities include the innovation-driven modernisation of enterprises, digital transformation, export orientation, and integration into global value chains (Heyets, 2000; Shynkaruk, 2022).

Therefore, strategic directions for business economic development constitute a comprehensive system of goals, principles, and directions that define the trajectory of the enterprise's development in the long-term, ensure its adaptability to external changes, and contribute to achieving sustainable economic outcomes at both the national and international levels.

Thus, the post-war reconstruction of Ukraine's economy requires a systematic alignment of state policy with the real needs of the entrepreneurial sector, which will ensure sustainable economic recovery and enhance business competitiveness. Based on the analysis of current research

(Savchuk, 2022; Shynkaruk, 2022) and international experience, a number of recommendations are proposed:

1. *Stimulating investment activity and access to financing.* The government should provide incentives for investment in priority sectors of the economy, including tax exemptions, state credit guarantees, and grant support for innovative and renewable projects. Expanding access for small and medium-sized businesses to financial instruments and international support programs is especially important.

2. *Support for innovation development and digitalisation of business.* It is necessary to develop state programs aimed at stimulating innovation activities, implementing digital technologies, and fostering platform-based business models. This will allow enterprises to increase productivity, flexibility, and speed in adapting to changes in market conditions.

3. *Development of infrastructure and logistics chains.* The reconstruction of transport, energy, and manufacturing infrastructure should take into account the needs of businesses, which will help reduce costs, improve the efficiency of production processes, and integrate into international supply chains.

4. *Forming a transparent and predictable regulatory environment.* State policy should ensure the simplification of business operations, protection of property rights, and guarantees of non-discriminatory access to markets and state resources. Transparency in regulation and predictability of the legal framework are critical for attracting investment and the stable development of entrepreneurship.

5. *Promoting regional and small business development.* It is important to support local initiatives and cluster models of entrepreneurship development, particularly in affected regions. Government programs should provide financial, consulting, and educational support to entrepreneurs, which will contribute to regional economic stability.

6. *Integration of sustainable development and social responsibility principles.* Government economic policy should encourage businesses to use environmentally safe technologies, responsible resource management, and participation in social programs, which will enhance the resilience of the economy and strengthen public trust.

The implementation of these recommendations will help align the strategic goals of the state with the needs of the entrepreneurial sector, create conditions for the restoration of economic activity, the development of innovative and sustainable business models, and the integration of Ukrainian enterprises into global economic processes.

Conclusions

The conducted research has provided a comprehensive examination of the essence, content, and directions for the implementation of strategic orientations for business economic development in the context of Ukraine's post-war reconstruction. It has been determined that the strategic directions for contemporary Ukrainian business are shaped by both external and internal factors, with the leading ones being global transformations of the economic environment, the need to restore national infrastructure, and the

necessity to enhance the competitiveness of enterprises.

It has been proven that the effective development of business in the post-war period is possible through the implementation of an integrated system of strategic priorities aimed at innovation-driven modernisation, improving management efficiency, digitalising processes, and ensuring the financial and organisational resilience of enterprises. It was established that the key role in this process is played by state economic policy, aligned with the needs of the entrepreneurial sector.

Based on the analysis of current trends, the following dominant challenges shaping the context of Ukraine's post-war business environment were identified: the identification of strategic directions for business economic development in post-war reconstruction; assessing the potential of enterprises for adaptation, innovation, and partnership in new economic conditions; and the formation of a strategic management mechanism that ensures synergy between the state's recovery priorities and private business initiatives. Recommendations were formulated regarding the

alignment of state policy with business needs, particularly through stimulating investment activity, developing infrastructure, supporting innovative entrepreneurship, ensuring a transparent regulatory environment, and implementing sustainable development principles.

The prospects for future research lie in a deeper analysis of the mechanisms of public-private partnerships in the post-war economy, assessing the effectiveness of state support programs for businesses, and developing models for the sustainable development of enterprises, taking into account integration into the European economic space.

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Стратегічні орієнтири розвитку бізнесу в умовах повоєнної відбудови економіки в Україні

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Анотація. Україна в умовах післявоєнного відновлення потребує структурної трансформації національної економіки, що зумовлює перегляд стратегічних орієнтирів розвитку бізнесу для забезпечення його ефективності, стійкості та інноваційності. Мета дослідження полягала у теоретичному обґрунтуванні сутності стратегічних орієнтирів розвитку бізнесу, аналізі сучасних викликів бізнес-середовища та розробленні рекомендацій щодо узгодження державної економічної політики з потребами підприємницького сектору у післявоєнній відбудові. Для досягнення мети використано системний, порівняльний і структурно-функціональний підходи, що забезпечило комплексний аналіз бізнес-середовища та визначення ключових напрямів розвитку підприємств у післявоєнний період. Визначено сутність поняття «стратегічні орієнтири бізнесу» та систематизовано наукові підходи до його трактування. Зокрема, встановлено, що сутність стратегічних орієнтирів полягає у визначенні ключових напрямів розвитку підприємства, які узгоджують його внутрішній потенціал із викликами зовнішнього середовища. Обґрунтовано стратегічні підходи до підвищення ефективності, інноваційності та стійкості бізнесу в умовах післявоєнного відновлення. Сформульовано рекомендації щодо узгодження державної політики з потребами підприємницького сектору, спрямовані на стимулювання інвестицій, інновацій і структурну модернізацію економіки. Розроблено модель узгодження державної політики з потребами бізнесу, що сприяє підвищенню ефективності, інноваційності та стійкості підприємств. Виявлено основні тенденції розвитку бізнес-середовища та визначено пріоритетні напрями структурної трансформації національної економіки. Результати дослідження можуть бути використані у діяльності органів державного управління при формуванні політики підтримки бізнесу, а також підприємствами – для розроблення стратегічних планів розвитку, орієнтованих на сталий економічний поступ у повоєнний період.

Ключові слова: стратегічне управління; орієнтованість на інноваційність; гнучкість і соціальна відповідальність; структурна модернізація економіки; зміни зовнішнього середовища

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Comparative analysis of financial reporting transparency of Naftogaz of Ukraine and OMV Group (Austria): Empirical approach

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Abstract. The study aimed to analyse the transparency and reliability of financial reporting by two energy corporations operating in different legal environments. The research methodology was based on an empirical approach that combined content analysis of official reports, legal analysis of regulatory acts, and calculation of an integral transparency index based on seven criteria. The study established that the structure of the Naftogaz of Ukraine group included six main enterprises, among which were Ukrgezvydobuvannya, Ukrtransgaz, Ukrtransnafta, Ukrnafta, Chornomornaftogaz, and Gaz Ukrayiny. An analysis of financial results showed that in 2024, the company made a profit of UAH 446,509 thousand after a loss of UAH 1,986,959 thousand in 2023, which indicated an increase in operational efficiency. In contrast, the Österreichische Mineralölverwaltung Group maintained strong financial results, with adjusted operating profit of EUR 5.14 billion and a slight decline in sales of 13.9%, reflecting the stability of its business model and the effectiveness of its corporate governance. The results showed that the Österreichische Mineralölverwaltung Group had a weighted average transparency index of 0.95 (95%), while Naftogaz of Ukraine had an index of 0.7 (70%). The biggest differences were recorded in the criteria of independent audit, reporting integration, and disclosure of environmental, social, and governance data. The results showed a higher level of openness, accountability and digital integration of the Austrian company. The practical significance of the study lies in the possibility of using its results to improve the corporate governance system and increase the transparency of financial reporting of state-owned energy companies in Ukraine in accordance with European standards

Keywords: corporate governance; disclosure of information; international standards; accounting; auditing; sustainable development

Introduction

Ensuring the transparency and reliability of financial reporting is a key prerequisite for stable economic functioning, effective corporate governance and investor

confidence. Increased demands for financial data transparency from regulators, shareholders and the public necessitate an objective assessment of the quality of reporting by

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economic entities. In the context of financial market globalisation, comparing the reporting systems of different countries is substantial for the identification of differences in standards, methodologies and approaches to disclosure.

The diversity of regulatory requirements for financial disclosure and corporate governance principles limits the level of transparency in corporate reporting. This issue was addressed by I. Shkolnyk & V. Dziuba (2023), emphasising that the current documents of the National Securities and Stock Market Commission are not consistent in terms of content and do not ensure an adequate level of transparency of financial activities. The study proved that the lack of clear requirements and uniform standards reduces the effectiveness of communication between companies, investors and other stakeholders, and hinders the development of a corporate culture of openness. At the same time, N. Ovsiuk *et al.* (2021) proved that management efficiency directly depends on the level of financial transparency, and the quality of reporting determines the trust of investors, creditors and government agencies. The study emphasised the role of the implementation of International Financial Reporting Standards (IFRS) as a factor in the globalisation of economic relations and a means of increasing the investment attractiveness of enterprises.

The issue of assessing the level of financial information transparency remains complex due to the ambiguity of the analysis criteria. S. Kalabukhova & T. Tokareva (2022) analysed existing methods for assessing reporting transparency and demonstrated that the absence of clear criteria hinders the formation of trust on the part of investors and company owners. Their study identified three key dimensions of accounting transparency: disclosure volume, accessibility, and accuracy of presentation, and proposed an analytical procedure for assessing reporting transparency based on a composite indicator of the risk of falsification. The low level of consistency between financial and non-financial reporting in corporate practice makes it difficult to create a comprehensive information space for users. This issue was studied by A. Chuienkov & S. Korol (2025) in an analysis of the relationship between corporate accounting policies and reporting quality, determining that the traditional focus on financial reporting does not meet the current requirements of financial capital providers. The study emphasised that accounting policy has the potential to be not only a tool for preparing financial statements, but also a basis for preparing extended, integrated, forms of reporting that incorporate non-financial aspects of activities.

The difficulty in ensuring the reliability and comparability of financial indicators is also related to different approaches to standardisation and interpretation of reporting. L. Sas *et al.* (2023) examined financial reporting as a key element of the enterprise management system and a source of information for economic decision-making. The study emphasised the importance of reliability, completeness and timeliness of financial data for the formation of effective development policies, and stressed the need to harmonise national standards with international requirements to

improve the quality of reporting. The insufficient adaptation of the national accounting system to international requirements complicates the transparency of financial reporting and the unification of accounting procedures in foreign economic activity. M. Sydich (2024) examined the peculiarities of IFRS implementation in Ukraine and their impact on the accounting of export and import operations. The study concluded that the application of IFRS contributes to increasing investor confidence, ensures the comparability of financial information, and forms a unified methodological basis for accounting for international transactions.

The issue of integrating financial and non-financial reporting is becoming particularly relevant in the process of modernising the accounting system. H. Skyba *et al.* (2025) examined directions for modernising accounting in the context of sustainable development, focusing on the combination of financial and non-financial information in reporting. The study determined that integrated reporting is an effective tool for improving financial transparency, strategic planning, and building trust in companies. Differences between national accounting standards and international reporting principles remain a challenge for ensuring the transparency of financial information. V. Shimon (2025) analysed the main differences between IFRS and national accounting regulations (standards) in Ukraine, emphasising methods of transition to IFRS. The author identified two main approaches to their implementation: complete transformation of financial reporting and parallel accounting, noting that the choice of methodology depends on the strategic goals of the enterprise and its reporting needs.

The analysed studies did not reveal quantitative mechanisms for assessing the transparency of financial reporting, the effectiveness of IFRS implementation, and the impact of accounting policies on the quality of corporate information. Furthermore, there is no analysis of the practical results of harmonising national and international standards, which necessitates further empirical research in this area. The study aimed to assess the level of openness and reliability of financial reporting of two energy corporations operating within the Romano-Germanic (continental) legal system, based on quantitative and qualitative indicators of information disclosure. To achieve this goal, the following tasks were set: to analyse the structure, content and scope of financial data disclosure in companies' reports, incorporating the requirements of international standards; to conduct an empirical comparison of key indicators of financial reporting transparency to identify similarities and differences in approaches to financial disclosure.

Materials and Methods

This study was empirical in nature and covered the period from 2023 to 2024, which was due to the need to analyse the latest trends in corporate reporting and assess the effectiveness of IFRS implementation in conditions of military and economic turbulence. This period was characterised by active corporate governance reforms in Ukraine, particularly in state-owned companies, and the updating of approaches

to public reporting in the European energy sector, which ensured the relevance and comparability of the results obtained.

The research materials included official documents, financial statements, corporate sustainability reports, and regulatory acts governing the activities of two energy corporations, Naftogaz and the Austrian OMV Group. These companies were selected as representative examples of public and private corporate governance in the energy sector, operating under IFRS standards and providing a comparative analysis of financial reporting transparency. The organisational and economic characteristics of Naftogaz (2025) were analysed. In particular, the companies that are part of the group were considered: Ukrzavvydobuvannya (2025), Ukrtransgaz (2025) and Ukrtransnafta (2025). In addition, the group includes Ukrnafta (2025), Chornomornaftogaz (2025) and Gas of Ukraine (2025), whose activities were also considered. The activities of these companies were studied using content analysis of official sources, which summarised the companies' financial results for 2024.

Naftogaz's corporate governance system was assessed using a regulatory analysis method based on the applicable regulations, Law of Ukraine No. 3587-IX (2024) and Law of Ukraine No. 2258-VIII (2017). This stage determined the compliance of the management structure with international principles of transparency, independence and accountability. To assess the company's financial results in the 2023-2024 period, a comparative analysis method was used, which tracked changes in key performance indicators to scientifically substantiate the relationship between the company's financial results and the level of transparency of its reporting (Naftogaz, 2024). The study analyses the corporate architecture, financial reporting standards and management system of the Austrian corporation OMV Group (2025). The company's operational structure was examined using a structural analysis method based on the Consolidated Financial Statements and Notes (2024). A systematic approach was used to assess the implementation of digital technologies in management processes, which analysed the functioning of the SAP S/4HANA ERP platform and the Microsoft Azure cloud environment, which ensures increased reporting accuracy and management process efficiency. The analysis of the OMV Group's financial indicators (2023; 2024) was based on data from financial reports to identify the dynamics of the company's income, assets and capital investments.

The comparison of the transparency of Naftogaz and OMV Group's financial reporting was based on seven criteria: compliance with IFRS, completeness of financial disclosure, publicity and accessibility of reports, timeliness of publication, non-financial reporting, corporate accountability, and availability of an English-language version. The analysis was based on official financial documents of Naftogaz (2024), OMV Group (2023; 2024) and Naftogaz (2025), which reflect the structure of information disclosure, audit opinions and the content of non-financial indicators of the companies. Official sources covering the principles of corporate ethics and sustainable development were also analysed:

Code of Conduct of the OMV Group (2024) and Review of OMV's Public Policy Engagement & Industry Associations: Alignment with the Paris Agreement (2025). For each criterion, a weighting coefficient was determined depending on its impact on the overall level of trust in companies' reporting. The assessment was conducted on a scale from 0 to 1, where 1 meant full compliance with international disclosure standards and 0 meant non-compliance with the criterion. The weighted result for each indicator was determined by multiplying the individual assessment by its significance coefficient. The final transparency index was calculated as the weighted average of the partial indicators, which ensured the objectivity and comparability of the results. The weighting coefficient method has been tested in scientific practice, in a study by G. Mirskikh & Yu. Reutskaya (2011), who analysed its effectiveness in optimising and assessing the quality of objects. The research novelty is determined using this approach specifically for assessing the transparency of financial reporting by energy companies.

Results

Organisational and economic features of the activities of the Naftogaz of Ukraine group of companies

The national joint-stock company Naftogaz was established in 1998 in accordance with Decree of the President of Ukraine No. 151/98 (1998). The company operates as a national joint-stock company, the sole shareholder of which is the state represented by the Cabinet of Ministers of Ukraine. Its activities are aimed at ensuring the effective functioning of the energy complex, developing the domestic energy market, enhancing the country's energy security, and integrating Ukraine into the European energy space. Naftogaz is a vertically integrated energy group covering the entire production cycle from geological exploration and extraction of natural gas and oil to transportation, storage, import, export and supply to end consumers. The group's structure includes strategic enterprises, among which is Ukrzavvydobuvannya (2025), which produces the bulk of gas and oil. Ukrtransgaz (2025) is the operator of the main gas pipelines and underground storage facilities, while Ukrtransnafta (2025) is responsible for oil transportation. Ukrnafta (2025) is involved in oil production, while Chornomornaftogaz (2025) specialises in the exploration and development of offshore fields. The group also includes Gas of Ukraine and the gas supply company Naftogaz, which distribute and sell gas to the population and businesses. The company is central in the market, supplying over 95% of Ukrainian consumers' natural gas needs, and remains a leading energy supplier.

Naftogaz explores, develops and operates fields, transports, stores and sells energy resources on domestic and foreign markets, and supplies gas to heat-generating enterprises and commercial consumers. The company also develops energy services and implements renewable energy and infrastructure modernisation projects. In 2024, gas production amounted to 13.9 billion m³, confirming the group's leading position in the market (Naftogaz Group

increased..., 2025). Given the military risks, part of the demand in 2025 was covered by imports, which at the beginning of the year reached about 800 million m³ of natural gas and 500 million m³ of liquefied gas from the United States. By the end of the 2025-2026 heating season, it is planned to import 4.5-6 billion m³ of gas, which should ensure the stability of energy supplies and the balance of the domestic market (Kapustianska, 2025). The company is actively involved in the diversification of energy routes and international partnerships. Through JSC Ukrtransgaz and JSC Ukrtransnafta, it controls the transport infrastructure, ensuring the transit of imported and exported energy resources through Ukraine. Naftogaz holds a leading position in the supply segment: approximately 11% of gas sales are to non-domestic consumers and about 98% to the population. The group's activities are financed by internal capital, state support, loans from international financial institutions and banks, as well as grants from foreign governments (National Commission for State Regulation in the Spheres of Energy and Municipal Services, 2025). The Ukrainian government provides state guarantees to attract external financing, including loans from the European Investment Bank in the amount of EUR 300 million and the European Bank for Reconstruction and Development in the amount of EUR 500 million for the purchase of gas. The company also receives grant support from the Norwegian government of more than EUR 140 million and uses credit lines from Ukrainian banks, including PrivatBank and UkrGasbank. The total amount of resources attracted exceeds EUR 1 billion, which is used to accumulate strategic gas reserves, maintain stable financial flows and ensure uninterrupted supply during heating periods (Naftogaz has attracted..., 2025).

The corporate governance system of Naftogaz is built in accordance with international standards of transparency and accountability defined by the recommendations of the Organisation for Economic Co-operation and Development (Ministry of Foreign Affairs of Ukraine, 2023). It is based on the Supervisory Board, the Management Board and the internal audit system. The Supervisory Board

determines the strategic directions of the company's development, approves the financial plan, monitors its implementation and appoints members of the Management Board. It consists mainly of independent members, which guarantees the impartiality of decisions. The Management Board, headed by Chairman Serhiy Koretsky, is responsible for operational management, implementing the approved strategy, coordinating the activities of subsidiaries and ensuring the financial stability of the group. Internal audit operates according to the "three lines of defence" model, which combines management control, internal monitoring and independent audit, ensuring the reliability of reporting and the effectiveness of management decisions (The government has..., 2025).

The organisational structure of corporate governance has been updated following Law of Ukraine No. 3587-IX (2024), which introduced stricter requirements for transparency, accountability and independence of state-owned companies. Activities are also regulated by Law of Ukraine No. 2258-VIII (2017). Compliance with corporate reporting standards is monitored by the National Commission for Energy and Utilities Regulation. Naftogaz is consistently reforming its management system to improve efficiency, accountability and reduce the risk of corruption. Since 2016, the process of improving internal control mechanisms and forming a corporate culture based on the principles of transparency, responsibility and sustainable development has been ongoing. The company's strategic policy is focused on ensuring the country's energy independence, diversifying supply sources, developing low-carbon technologies, implementing digital solutions for asset management, and improving operational efficiency. The restoration and protection of critical infrastructure damaged by military action, as well as the expansion of partnerships with European companies to integrate Ukraine into the common energy space, are substantial components of the strategy. The organisational and strategic changes implemented are reflected in the financial results presented in Table 1, which characterise the state and dynamics of Naftogaz's development.

Table 1. Key financial indicators for Naftogaz in 2023-2024

Indicators	Years		2024 in comparison to 2023 (%)
	2023	2024	
Net income from product sales, million UAH	55,691,930	55,392,821	99.5
Cost of goods sold, million UAH	52,689,984	52,773,624	100.16
Gross profit, million UAH	3,001,946	2,619,197	82.25
Operating profit (loss), million UAH	702.859	899.784	128
Net financial result (profit/loss), million UAH	-1,986,959	446.509	122.4
Material expenses, million UAH	51,480,286	51,531,739	100.1
Administrative expenses, million UAH	4,310,347	1,317,053	30.5

Source: compiled by the author based on Naftogaz (2024)

An analysis of the indicators shows stable sales volumes and slight fluctuations in production costs, which lead to a reduction in gross profit. At the same time, the company demonstrated a recovery in financial performance, moving

from a loss in 2023 to a profit in 2024, which is associated with the optimisation of administrative expenses and the stabilisation of the energy supply market. Thus, Naftogaz is a key element of the state's energy system, combining the

functions of production, transportation, storage, import and sale of energy resources. It has a multi-level management system, implements international standards of corporate transparency and actively develops partnerships with international financial institutions. The company combines economic efficiency with social responsibility, focusing on ensuring the country's energy security, increasing market stability and gradually transitioning to an environmentally-oriented development model.

Financial reporting standards and corporate architecture of OMV Group (Austria)

The OMV Group was founded on 3 July 1956 under the name Österreichische Mineralölverwaltungs Aktiengesellschaft as Austria's national oil company. The company has since grown into one of Europe's largest public joint-stock corporations, with its headquarters in Vienna. OMV shares are listed on the Vienna Stock Exchange and represented by depositary receipts on the American market, which provides the company with international investment attractiveness and access to global financial resources. OMV Group (2025) is a multinational integrated energy company operating in more than 120 countries worldwide, including Europe, the Middle East, Africa, the North Sea and the Asia-Pacific region.

OMV's operating structure is based on the integration of three key areas: Fuels & Feedstock, Energy, and Chemicals & Materials. The Fuels & Feedstock segment covers oil refining and marketing, as well as the sale of petroleum products to commercial and private customers. The company owns three large oil refineries in Europe, in Austria, Germany and Romania, with a combined capacity of around 17.8 million tonnes per year, as well as a 15% stake in ADNOC Refining (UAE) (OMV Group, 2016). Within this segment, OMV operates a network of approximately 1,800 petrol stations in ten European countries, including Austria, Romania, Slovakia, Hungary and Germany, while also developing the production of renewable fuels and sustainable chemical components. The Energy segment covers the exploration, development and production of oil, natural gas and gas condensate in key regions of Northern, Central and Eastern Europe, the Middle East, Africa and Asia. OMV is also active in natural gas sales, transportation, logistics, trading and power generation. Within this area, a Low Carbon Business unit is being formed, which is responsible for developing innovative projects in the fields of geothermal energy, carbon capture and storage, green hydrogen production and renewable energy development. The third business area, Chemicals & Materials, focuses on the production of high-value-added base chemicals and polymer materials. This segment is implemented through the subsidiaries Borealis and the joint ventures Borouge (UAE, Singapore) and Baystar (USA). OMV Group (2025) is one of Europe's leading suppliers of polyolefin solutions and is actively developing chemical recycling technologies for plastics, promoting the concept of a circular economy.

OMV's corporate governance is organised following the Austrian Code of Corporate Governance (2021), which is based on the principles of the Organisation for Economic Co-operation and Development and EU directives. The management system consists of two main bodies: the Supervisory Board and the Executive Board. The Supervisory Board controls the company's activities, approves strategic plans, monitors compliance with the principles of transparency and independence, and its members are elected by the general meeting of shareholders, considering the requirements for independence. The Executive Board is responsible for the day-to-day management of the business, makes strategic decisions and ensures the implementation of corporate policy. In addition, the Supervisory Board has specialised committees for audit, risk management and remuneration, which increase the effectiveness of control. OMV's internal audit system covers the verification of management processes, financial reporting and regulatory compliance. The company's financial statements are prepared in accordance with IFRS, which ensures their comparability and transparency at the global level. The company systematically publishes annual reports, audit reports, non-financial statements and corporate responsibility documents. The reporting approach combines financial and non-financial indicators, including environmental, social and governance (ESG) aspects (Consolidated Financial Statements..., 2024).

OMV Group (2018) defines sustainable development and decarbonisation of energy as key priorities of its corporate strategy. As part of its 2025 Sustainability Strategy, the company has set 15 measurable goals in the areas of safety, environmental protection, innovation, personnel development and corporate responsibility. The main goals include achieving carbon neutrality by 2050, reducing greenhouse gas emissions by 30% within Scope 1 and 2 and by 20% within Scope 3 by 2030, and directing up to 40% of annual investments to projects related to sustainable development. The company is investing up to EUR 500 million in renewable energy, including the production of biofuels, synthetic aviation fuels and hydrogen technologies. Of relevance is the project to build a renewable diesel production facility at the Petrobrazi plant in Romania. OMV actively implements digital innovations to improve management efficiency and financial control. The company operates a unified SAP S/4HANA ERP platform, which integrates approximately 170 group companies into a single information system. This ensures uniform accounting, faster consolidation of reporting, and greater accuracy of financial data. To process large amounts of data and forecast financial indicators, OMV uses Microsoft Azure cloud solutions in partnership with Business Machines Corporation Consulting, as well as the Cognite Data Fusion platform, which supports digital transformation, analytics and asset management processes. Thanks to these technologies, OMV implements flexible management principles, optimises costs, reduces the risks of market price fluctuations and increases the sustainability of its business model.

OMV's financial stability is ensured by diversified sources of capital. The main source remains stable cash flow from operating activities, which supports the company's investment activity at approximately EUR 3.8 billion annually, of which almost half is directed to energy transition projects. The company also raises funds through the issuance of shares and bonds, utilises credit lines and maintains a high credit rating (A-/A3 with a stable outlook). In addition, OMV regularly implements dividend programmes that increase investor confidence and sells non-core assets

to generate additional sources of financing. A substantial component of the financial model is strategic partnerships with Borealis (Austria), OMV Petrom (Romania), ADNOC (United Arab Emirates) and Borouge (United Arab Emirates, Singapore), which provide access to new technologies, markets and synergies in the field of sustainable development. The dynamics of the OMV Group's financial results in 2023-2024 indicate the company's stable performance in the context of changing energy market conditions. Table 2 shows the key performance indicators.

Table 2. Key financial indicators of the OMV Group in 2023-2024

Indicator	2023	2024	Change, %
Sales to third parties, billion EUR	39.46	33.98	-13.9
Operating profit, billion EUR	5.23	4.25	-18.7
Adjusted net operating profit, billion EUR	6.02	5.14	-14.6
Total value of assets, billion EUR	21.86	22.45	+2.7
Capital investments, billion EUR	3.74	3.70	-1.1
Investments in associates, billion EUR	6.67	6.66	≈0
Largest markets (by sales volume)	Austria, Romania, Germany	Austria, Romania, Germany	-

Source: compiled by the author based on OMV Group (2023; 2024)

Analysis of the data shows that OMV Group maintains high financial stability despite a 13.9% decline in sales revenue. The company demonstrated a slight decrease in operating profit but maintained a stable level of assets and investments, confirming the effectiveness of capital management and the balance of its development strategy. The gradual growth in total asset value and stable investments in associated companies indicate OMV's focus on maintaining its position in the European energy market in the long term. Thus, the OMV Group is a global energy leader with a developed multi-level management structure, an international production network and a clearly defined strategy for transitioning to a low-carbon economy. The company combines innovation, technological modernisation and corporate responsibility, implementing an integrated approach to energy transformation. Its organisational and economic model is based on the principles of transparency, diversification of revenue sources, effective risk management and a focus on long-term sustainability in the global energy space.

Assessment of the level of transparency of financial reporting by companies

The issue of transparency in financial reporting is becoming increasingly relevant in the context of capital globalisation, the digitisation of accounting systems and stricter regulatory requirements for disclosure. A high level of transparency in reporting is a key factor in building trust between companies, investors, regulators and society. In Europe, this principle is seen not only as an element of financial discipline but also as a component of corporate responsibility and sustainable development. For Ukraine, which is integrating its financial institutions into the EU single market, harmonising reporting standards with international approaches is an indicator of the level of corporate maturity

and institutional transparency of the public sector. In this context, it is worth comparing the level of transparency in financial reporting between the National Joint Stock Company Naftogaz and the Austrian corporation OMV Group, which represent the energy sector but operate in different institutional and regulatory environments. Both companies prepare their financial statements in accordance with IFRS, which can be used for a comparative analysis of their approaches to disclosure, auditing, corporate governance and the integration of non-financial aspects.

Naftogaz's financial statements (2025) for 2024, which are in the form of separate reports, confirm compliance with international standards and a focus on increasing transparency. The documents are publicly available on the company's official website. The annual report includes the main financial documents: balance sheet, income statement, cash flow statement, equity statement, as well as notes containing a breakdown of assets and liabilities. However, the audit opinions are published in fragments, which limits the possibility of an independent assessment of the reliability of the reporting. A positive aspect is the confirmed compliance of the reporting with IFRS requirements, which creates a basis for its comparison with European companies. At the same time, the company does not publish a separate integrated sustainability report in a format that complies with international ESG standards but systematically discloses non-financial information on internal online platform, "Sustainable Development". It presents data on environmental initiatives, energy efficiency, decarbonisation, social responsibility, corporate ethics and governance. This approach demonstrates the gradual formation of integrated reporting practices within the company, ensuring a higher level of consistency between financial and non-financial aspects of its activities and bringing its disclosure system closer to European principles of corporate transparency.

In contrast, OMV Group (2024) demonstrates a systematic, integrated approach to disclosure. The company's annual financial report contains not only a complete set of consolidated documents, but also sections devoted to strategic priorities, risks, corporate governance and sustainable development goals. All financial indicators are accompanied by analytical explanations, structural diagrams, and an audit opinion from PricewaterhouseCoopers. OMV provides a high level of detail in its notes, which can be used to track the impact of market factors, investment programmes, and regulatory changes on financial results.

OMV's high transparency is due not only to stock exchange regulations but also to its corporate ethics policy, as stipulated in the Code of Conduct of the OMV Group (2024) and Review of OMV's Public Policy Engagement & Industry Associations: Alignment with the Paris Agreement (2025). These materials disclose non-financial

aspects of the company's activities, from anti-corruption and employee rights protection to the implementation of circular economy principles. The report also presents data on the achievement of environmental goals, including CO₂ emission reduction, energy efficiency improvement, investments in renewable energy, and the development of carbon capture technologies. Thus, OMV creates a multidimensional reporting system that combines financial results with environmental, social, and governance indicators. Additional evidence of transparency is provided by the OMV Group (2019) publication, which details approaches to ethical standards and environmental policy. This demonstrates the strategic integration of ESG principles into corporate governance and compliance with the practices of leading European energy corporations. Table 3 illustrates the differences in the level of disclosure of financial and non-financial information in the reports of the two companies.

Table 3. Comparison of the transparency of financial reporting by Naftogaz and OMV Group (2024)

Evaluation criterion	Naftogaz	OMV Group (Austria)
Compliance with IFRS	Reporting is prepared following IFRS, as confirmed in the notes	Full compliance with IFRS and EU directives, detailed disclosure of accounting policies
Completeness of financial disclosure	Basic reports with notes are available, but audit materials are published in fragments	Consolidated financial statements with detailed explanations and an independent audit by PricewaterhouseCoopers
Publicity and accessibility of reports	Reports are published on the official website and are available for free viewing	Interactive online platform with open data, available in several languages
Timeliness of disclosure	Data is updated annually with a slight time lag	Publication is conducted based on exchange regulations.
Non-financial reporting (ESG)	An online platform for sustainable development has been launched, revealing decarbonisation goals, social initiatives and gender balance. There is no comprehensive integrated report	Integrated ESG report with quantitative impact indicators, detailed data on emissions, sustainable investments and corporate ethics
Corporate accountability	The Supervisory Board is operational, internal auditing has been introduced, and the anti-corruption policy is being improved	High level of control through independent committees, regular reporting to shareholders and external audit
Availability of the English version	Partial translation of financial documents	Full English-language integrated version of financial and non-financial reports

Source: compiled by the author based on OMV Group (2024), Code of Conduct of the OMV Group (2024), Naftogaz (2024; 2025), Review of OMV's Public Policy Engagement & Industry Associations: Alignment with the Paris Agreement (2025)

First and foremost, OMV Group demonstrates a high degree of transparency, which is driven not only by legal and regulatory requirements but also by a mature corporate culture of openness. The company's public reporting covers not only financial indicators, but also non-financial risks, which facilitates a comprehensive assessment of the impact of external factors on strategic development. All key indicators, from capital structure to environmental commitments and decarbonisation targets, are verified by an independent audit and made publicly available, and correlate with the practices of leading European energy corporations. At the same time, Naftogaz is in the process of gradually increasing the transparency of its reporting. The focus is on the financial aspects of its activities, while environmental and social criteria have not yet been integrated into a single corporate reporting system. A positive trend is the growth in the share of electronic publications, the transition to IFRS and the gradual introduc-

tion of good corporate governance principles in line with the recommendations of the Organisation for Economic Co-operation and Development, which indicates a move towards European disclosure practices. The structural differences identified between companies determine different levels of accountability. As a public corporation, OMV Group operates under constant monitoring by shareholders and capital market regulators, which encourages adherence to high standards of data disclosure. On the other hand, Naftogaz, as a state-owned enterprise, is subject to other control mechanisms that do not always require the public disclosure of non-financial information. This reduces the level of involvement of external stakeholders in assessing the effectiveness of the company's management. To quantitatively compare the level of transparency in corporate reporting of both companies, an integrated approach based on the calculation of the financial reporting transparency index was used (Table 4).

Table 4. Quantitative assessment of the financial reporting transparency index of Naftogaz and OMV Group

Evaluation criterion	Weight coefficient	Evaluation, Naftogaz	Weight result	Evaluation, OMV Group	Weight result
Compliance with IFRS standards	0.15	0.8	0.12	1	0.15
Timeliness of disclosure	0.1	0.7	0.07	0.95	0.095
Independent audit	0.2	0.75	0.15	1	0.2
Disclosure of non-financial indicators	0.15	0.6	0.09	0.95	0.1425
Integrated reporting	0.2	0.55	0.11	0.9	0.18
Digital accessibility	0.1	0.8	0.08	0.95	0.095
Corporate ethics and management transparency	0.1	0.7	0.07	0.9	0.09
Weighted average transparency index (sum)	1	-	0.69≈0.7	-	0.95

Source: compiled by the author based on OMV Group (2024), Code of Conduct of the OMV Group (2024), Naftogaz (2024; 2025), Review of OMV's Public Policy Engagement & Industry Associations: Alignment with the Paris Agreement (2025)

The results of the quantitative assessment show that OMV Group has a significantly higher level of transparency in corporate reporting compared to Naftogaz. The weighted average transparency index for OMV Group is 0.95 (95%), while for Naftogaz it is 0.7 (70%), which is 0.25 points or approximately 35.7% lower. The biggest differences between the companies are observed in the criteria of independent audit (0.2 vs. 0.15), reporting integrity (0.18 vs. 0.11) and disclosure of non-financial indicators (0.1425 vs. 0.09), which indicates a more developed information management system and ESG practices at OMV Group. In terms of compliance with IFRS standards and digital accessibility, the differences are 0.03 points, which also confirms the higher quality of report preparation and publication at the Austrian company. For Naftogaz, the values obtained demonstrate partial compliance with IFRS, but there are still problematic aspects, in particular insufficient integration of financial and non-financial indicators, limited external verification and irregular publication of reports. Given these results, the experience of the OMV Group can be used as a benchmark for improving corporate governance in Ukrainian state-owned companies. The introduction of systematic external auditing, the expansion of non-financial components of reporting and digital communication tools will help to increase investor confidence and strengthen the financial stability of the company. Therefore, transparency in reporting should be viewed not only as a technical indicator, but also as a strategic indicator of management effectiveness, reflecting the level of social responsibility, ethical sustainability and the company's ability to ensure sustainable development in a global competitive environment.

Discussion

Transparency in financial reporting is considered a key condition for effective corporate governance, investment attractiveness, and sustainable development of companies. In the context of globalisation, digital transformation, and increased accountability requirements, especially within IFRS, the significance of ensuring the reliability and openness of corporate data is growing. This study and A. Talabi *et al.* (2024) concluded that the quality of financial reporting was determined by the effectiveness of corporate governance, the independence of supervisory bodies and

the level of transparency of data disclosure. The study by A. Talabi *et al.*, based on an analysis of 150 companies in South Africa and Nigeria for 2014-2023, proved that the independence of audit committees and the share of foreign ownership had a positive impact on the reliability of reporting, while excessive concentration of ownership reduced its quality. In contrast, this study assessed the transparency of reporting through compliance with international standards and disclosure practices. Both studies confirmed that openness and good corporate governance are key factors in investor confidence and the financial stability of companies.

A comparison with the findings of F. Shaheen *et al.* (2024) revealed a shared view of the role of transparency in strengthening corporate accountability. F. Shaheen *et al.* demonstrated that compliance with IFRS, independent auditing, and non-financial reporting improved the quality of financial information in South Asian countries. This study showed a similar trend: a comparison of Naftogaz and OMV Group confirmed that international standards and data transparency create a basis for investor confidence, although the approach to ESG components had varying degrees of integration. Similar conclusions were drawn in the study by J. Garcia-Lacalle & L. Torres (2021), demonstrating that even formal compliance with standards did not guarantee transparency without independent control. Using the example of Spanish state-owned enterprises, the authors emphasised the importance of combining audit and accountability. In this study, similar principles were considered through the corporate and technological prism of using modern digital tools that increased the level of financial transparency. A certain parallel can be drawn with the conclusions of I. El-Sayed Ebaid (2024) emphasises the problem of "formal transparency" in developing countries. The study showed that the mere implementation of IFRS without effective control does not guarantee the reliability of reporting. The study confirmed the same principle but emphasised the crucial role of technological integration of audit and digital monitoring systems in strengthening real transparency. A comparison with J. Lin & M. Qamruzzaman (2023) revealed another aspect of the topic: the link between the digitalisation of reporting, institutional support and the influence of international standards. While J. Lin & M. Qamruzzaman studied the macro level of IFRS

effectiveness, this study detailed the practical aspect of corporate mechanisms for ensuring the reliability and control of financial data.

The idea that the quality of corporate governance directly shapes financial transparency resonated with the study by B. Gardi *et al.* (2023). Using Iraqi banks as an example, the authors demonstrated that the implementation of IFRS served as a link between management efficiency and reporting accuracy. In this study, a similar relationship was found in Naftogaz and OMV Group, where the level of transparency was determined by the quality of auditing and the depth of digitalisation of management processes. A comparison with E. Alharasis *et al.* (2024) summarised this logical sequence, confirming that international standards, in particular IFRS 7, ensure the comparability and reliability of financial data. E. Alharasis *et al.* demonstrated this using the example of Iraqi banks, and this study used the example of energy companies in different legal systems. Both approaches showed that standardisation, auditing and accountability remained universal factors in building trust at the global level. This study echoed the findings of G. Mbu-Ogar *et al.* (2023), which emphasised that the harmonisation of IFRS contributed to reducing information asymmetry and increasing investor confidence. The authors emphasised that regulatory accountability and the integration of IFRS standards created the basis for global comparability of financial data. This study confirmed similar trends, demonstrating how audit quality and compliance with international standards at Naftogaz and OMV Group shaped real financial transparency. The difference lay in the approach: G. Mbu-Ogar *et al.* analysed the conceptual harmonisation of reporting systems, whereas this study had an applied dimension focused on corporate practice.

The conceptual continuity was evident in comparison with the study by A. Reid *et al.* (2024), which considered transparency as a tool for enhancing corporate reputation. The researchers showed that large companies in the field of information and communication technologies used transparency reports as a component of corporate social responsibility, forming an image of an accountable and reliable business. In this study, financial reporting performed a similar function, as financial reporting was the means through which investor confidence was achieved. However, while A. Reid *et al.* analysed non-financial disclosure aimed at public approval; this study focused on financial transparency, which was confirmed by audits and regulated by international standards. The perception of transparency as an element of corporate sustainability linked this study to the approach of R. Müller *et al.* (2024). The study showed that integrating non-financial indicators into reporting enhanced the assessment of business performance, especially in the context of sustainable development. An analysis of Naftogaz and OMV Group showed a similar trend: the combination of financial and non-financial standards-built trust in reporting and supported the stability of companies. At the same time, R. Müller *et al.* studied transnational corporations with developed ESG

reporting, while this study was limited to the energy sector, which provided a more detailed assessment of the specifics of management and auditing approaches.

The issue of corporate accountability in the digital age was also the subject of research by G. Aliprandi & K. Borders (2024). The study addressed transparency through the lens of the digital transformation of accounting systems and public tax reporting. This study developed this idea further, showing how the digitisation of financial control processes at OMV Group improved the accuracy and comparability of data. However, while G. Aliprandi & K. Borders highlighted global technological trends and political transparency initiatives, this study focused on the practical mechanisms of the role of auditing, management standards, and corporate culture. A comparison with the study by R.A. Dasila (2025) revealed a common idea: compliance with IFRS is the basis for investor confidence and quality management. R.A. Dasila analysed how the implementation of IFRS in developing countries improved the level of disclosure and reduced the risks of data distortion. This study followed a similar logic: international standardisation proved to be critical to the stability of companies, although the focus shifted to the corporate level, where disclosure was assessed through the quality of auditing and compliance with ethical reporting principles.

The theme of transparency as an element of trust in financial systems was further explored by A. Fletcher *et al.* (2025), who showed that automation of reporting and the use of digital technologies are shaping a new quality of managerial openness. A. Fletcher *et al.* showed that combining financial and non-financial indicators ensured not only informativeness but also corporate sustainability. These findings were consistent with the results of this study, where digital audit tools and control systems at OMV Group proved the effectiveness of technological integration in increasing transparency. Lastly, a comparison with J. Prather-Kinsey *et al.* (2022) suggested that institutional and cultural factors contribute to the reliability of financial reporting. J. Prather-Kinsey *et al.* emphasised the importance of independent boards of directors and audit committees in ensuring financial objectivity. These provisions are consistent with the findings of this study, but the example of Naftogaz showed that state ownership can limit managerial autonomy and the completeness of non-financial data disclosure. Thus, while J. Prather-Kinsey *et al.* emphasised the cross-country and cultural-institutional context; this study found that the level of digitalisation and integration of non-financial indicators into corporate reporting was a key factor.

A comparison of this study with the study by M. Javaid *et al.* (2025) revealed consistency in the interpretation of reporting transparency as a result of the combination of international standards and technological modernisation of accounting processes. M. Javaid *et al.* showed that digital tools such as ERP systems, blockchain, and AI analytics (artificial intelligence) not only accelerate reporting but also reduce the risk of data distortion. In this study, the

technological aspect was secondary while comparison of two companies, Naftogaz and OMV Group, using an index approach that reflected the practical implementation of transparency principles, was a primary emphasis. Despite the difference in scale, both works emphasised that financial credibility is formed at the intersection of three components: regulatory compliance, ethical principles and digital solutions, which together create the foundation for trust in corporate information. The idea of combining financial and non-financial reporting as a factor in increasing the market value of companies aligned this study with the research of P. Dorothy and E. Endri (2024). They proved that environmental, social and governance reporting had a positive impact on the capitalisation of Indonesian energy companies, especially in conditions of financial stability and sustainable management. In this study, a similar relationship was observed through IFRS compliance and the level of data transparency, which strengthened investor confidence in Naftogaz and OMV Group. However, the authors' approaches differed: P. Dorothy and E. Endri used econometric modelling to identify statistical dependencies, while this study focused on a qualitative assessment of transparency through a comparative analysis of corporate practices.

Consistency of views was also evident in a comparison of this study with the research of A. Mahmood *et al.* (2025) assessed the impact of non-financial disclosure on the market value of companies in the EU. A. Mahmood *et al.* demonstrated that following the introduction of the Corporate Sustainability Reporting Directive, the level of ESG reporting increased significantly, which led to higher capitalisation of companies and greater stakeholder confidence. These results echoed the findings of this study, in which financial reporting transparency and compliance with international standards contributed to strengthening companies' reputational capital. At the same time, A. Mahmood *et al.* had a broader coverage, analysing a large sample of European companies, while this study analysed two energy corporations, which contributed to the analysis of management and industry differences. The expansion of the discussion on the relationship between transparency, sustainability and financial structure is reflected in the study by M. Ktit & B. Abu Khalaf (2024). The study determined that high ESG performance in European companies reduced financing risks, improved access to capital and increased financial flexibility. In this study, this relationship manifested itself through the increased investment attractiveness of companies with higher levels of reporting transparency. However, while M. Ktit & B. Abu Khalaf addressed capital structure and the impact of ESG on financial leverage. This study revealed the practical aspects of IFRS compliance and the role of corporate audit in ensuring stability and trust.

The comparative analysis confirmed that transparency in financial reporting is the result of synergy between international standardisation, independent auditing and the digitalisation of management processes. Regardless of the industry or region, the combination of financial and non-financial indicators ensures real accountability, reduc-

es information asymmetry and strengthens the sustainability of companies. In this context, financial reporting is not only a tool for recording performance results, but also a means of strengthening investor confidence, management transparency and long-term business stability.

Conclusions

The study found that the transparency of energy corporations' financial reporting directly depended on their corporate governance model, ownership structure, and level of implementation of international disclosure standards. An analysis of the activities of the National Joint Stock Company Naftogaz showed that its structure covers six main enterprises: Ukrgezvydobuvannya, Ukrtransgaz, Ukrtransnafta, Ukrnafta, Chornomornaftogaz, and Gaz Ukrainy. This organisational system ensures the integrity of the energy cycle, but at the same time complicates the management and control of financial flows.

An analysis of financial indicators showed that in 2023, the company incurred losses of UAH 1,986,959 thousand, while in 2024, it received a profit of UAH 446,509 thousand. At the same time, a 69.4% reduction in administrative expenses confirmed the effectiveness of the measures implemented to optimise management processes. Despite the positive dynamics of financial results, the level of publicity of non-financial reporting remained limited, and environmental and social indicators were disclosed only partially. A comparative analysis of the corporate management system confirmed that Naftogaz is gradually adapting its internal processes to the requirements of national regulatory documents in the field of corporate governance and financial reporting audit, but the level of independent audit and ESG reporting practices does not yet meet international standards.

A study of OMV Group's activities showed that the company is characterised by high financial stability and deep integration of digital solutions into its reporting. In 2024, OMV Group's adjusted operating profit was EUR 5.14 billion, with a 13.9% decline in sales. The company ensures full disclosure of environmental, social and governance indicators, which are an integral part of its financial reporting. The calculation of the integrated transparency index revealed a significant difference between the companies: for Naftogaz, it was 0.7 (70%), while for OMV Group, it was 0.95 (95%). The biggest differences were observed in the criteria of independent audit, reporting integration and completeness of non-financial data disclosure. This indicated a higher level of openness, accountability and corporate responsibility of the European company. The results showed that the quality of financial reporting directly depended on the effectiveness of corporate governance, the degree of digitalisation of accounting processes and compliance with international standards. A high level of transparency is a key factor in strengthening investor confidence, building a positive image and ensuring the financial stability of companies. The limitation of this study was that it covered only two examples of energy companies. Prospects for further research lie in expanding the sample of companies from different coun-

tries for an in-depth analysis of the impact of corporate governance models on the transparency of financial reporting. None.

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Conflict of Interest

None.

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Порівняльний аналіз прозорості фінансової звітності «Нафтогаз України» та OMV Group (Австрія): емпіричний підхід

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Анотація. Метою даного дослідження було проаналізувати ступінь прозорості та надійності фінансової звітності двох енергетичних корпорацій, що функціонують у різних правових середовищах. Методологія дослідження базувалася на емпіричному підході, який поєднував контент-аналіз офіційної звітності, правовий аналіз нормативно-правових актів і розрахунок інтегрального індексу прозорості за сімома критеріями. У ході дослідження було встановлено, що структура групи «Нафтогаз України» включала шість основних підприємств, серед яких «Укргазвидобування», «Укртрансгаз», «Укртранснафта», «Укрнафта», «Чорноморнафтогаз» і «Газ України». Аналіз фінансових результатів засвідчив, що у 2024 році компанія вийшла на прибуток у розмірі 446509 тисяч гривень після збитку 1986959 тисяч гривень у 2023 році, що свідчило про підвищення операційної ефективності. Натомість для корпорації «Osterreichische Mineralölverwaltung Group» було характерне збереження високих фінансових результатів – скоригований операційний прибуток становив 5,14 мільярда євро при незначному скороченні обсягу продажів на 13,9 %, що відображало стійкість бізнес-моделі та ефективність корпоративного управління. Результати показали, що «Osterreichische Mineralölverwaltung Group» мала середньозважений індекс прозорості 0,95 (95 %), тоді як у «Нафтогазу України» цей показник становив 0,7 (70 %). Найбільші відмінності зафіксовано за критеріями незалежного аудиту, інтегрованості звітності та розкриття екологічних, соціальних і управлінських даних. Результати засвідчили про більш високий рівень відкритості, підзвітності та цифрової інтегрованості австрійської компанії. Практичне значення дослідження полягає у можливості використання його результатів для вдосконалення системи корпоративного управління та підвищення прозорості фінансової звітності державних енергетичних компаній України відповідно до європейських стандартів

Ключові слова: корпоративне управління; розкриття інформації; міжнародні стандарти; облік; аудит; сталий розвиток

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