DOI: https://doi.org/10.32782/2524-0072/2026-87-5

UDC 005.95/.96:004]:339.94(73)

DISPATCH PERSONNEL COMPETENCIES IN THE CONTEXT OF THE DIGITALISATION OF U.S. INTERNATIONAL LOGISTICS: SYSTEMATISATION AND HR RISKS

КОМПЕТЕНТНОСТІ ДИСПЕТЧЕРСЬКОГО ПЕРСОНАЛУ В УМОВАХ ЦИФРОВІЗАЦІЇ МІЖНАРОДНОЇ ЛОГІСТИКИ США: СИСТЕМАТИЗАЦІЯ ТА HR-РИЗИКИ

Hryhoruk Vasyl
Chief Operating Officer at Modern Market Masters,
Project Manager at PE «TAD»
ORCID: https://orcid.org/0009-0003-7185-5495

Varis Iryna
PhD in Economics, Associate Professor,
Kyiv National Economic University named after Vadym Hetman
ORCID: https://orcid.org/0000-0002-9502-5045

Григорук Василь Вадимович
ПП «ТАД»

Варіс Ірина Олександрівна
Київський національний економічний університет імені Вадима Гетьмана

The digitalisation of the U.S. logistics market is transforming not only transportation technologies but also the job functions of dispatch personnel. The mandatory use of Electronic Logging Devices (ELDs), digital load boards, and Transportation Management Systems (TMS) has turned digital literacy into a basic requirement for effective work in the logistics sector. The article examines the transformation of dispatch personnel job functions and proposes a systematisation of five competency groups – digital, communication, cognitive, adaptive, and organizational – based on the distributed workforce model implemented by TAD. The results indicate that dispatchers increasingly perform the role of coordinators of digital logistics processes, while insufficient competency development may generate regulatory, operational, and HR-related risks.

Keywords: digital competencies; dispatch personnel; international logistics; logistics digitalisation; distributed workforce model; human resource management; digital fatigue.

Цифровізація ринку логістичних послуг США суттєво трансформує не лише технологічну інфраструктуру вантажних перевезень, а й зміст трудової діяльності диспетчерського персоналу. Обов'язкове використання електронних бортових реєстраторів (ELD), цифрових вантажних платформ та систем управління транспортом (TMS) зумовило зростання вимог до професійної підготовки працівників і перетворило цифрові компетентності з додаткової переваги на необхідну умову ефективної роботи в логістичному секторі США. Водночас більшість наукових досліджень зосереджені переважно на технологічних аспектах цифровізації логістики та трансформації бізнес-процесів, тоді як питання компетентнісного профілю диспетчерського персоналу в умовах міжнародних розподілених операційних моделей залишається недостатньо дослідженим. Метою статті є дослідження трансформації трудових функцій диспетчерського персоналу в умовах цифровізації міжнародної логістики США та систематизація його ключових компетентностей на основі аналізу практичної операційної моделі. Методологічну основу дослідження становлять аналіз наукової літератури з питань цифрової трансформації логістики, розвитку компетентностей персоналу та HR-менеджменту, а також аналіз операційної моделі логістичної компанії ПП «TAD», що реалізує distributed workforce-підхід шляхом поєднання локальної присутності у США та диспетчерського центру в Україні. Така модель формує специфічні виклики для управління персоналом, пов'язані з різницею часових поясів, високою інтенсивністю цифрової взаємодії, крос-культурною комунікацією та ризиками цифрової втоми. За результатами дослідження систематизо-

вано п’ять груп компетентностей диспетчерського персоналу: цифрові, комунікаційні, когнітивні, адаптивні та організаційні. Для кожної групи визначено зміст компетентностей, цифрові інструменти та процеси, особливості їх прояву в професійній діяльності, а також потенційні HR-ризики, пов’язані з недостатнім рівнем їх розвитку. Практична цінність отриманих результатів полягає у можливості використання запропонованого компетентнісного фреймворку для формування профілів посад, удосконалення процедур підбору, навчання та оцінювання диспетчерського персоналу, а також адаптації HR-систем логістичних компаній до умов цифрової трансформації міжнародної логістики та функціонування розподілених операційних моделей.

Ключові слова: цифрові компетентності; диспетчерський персонал; міжнародна логістика; цифровізація логістики; розподілена модель праці; управління персоналом; цифрова втома.

Problem Statement. The digitalisation of the logistics industry is transforming not only the technological foundations of freight transportation but also approaches to workforce organisation. International logistics companies are increasingly adopting distributed operating models in which specific functions are performed by employees located across different countries and time zones. For this study, a distributed workforce refers to an organisational model in which interconnected functions are carried out by employees operating from different geographic locations, using digital tools for coordination, communication, and operational control.

The U.S. logistics market is one of the most illustrative examples of this transformation, given its high level of digitalisation and extensive regulatory requirements. The mandatory use of Electronic Logging Devices (ELDs), digital load boards, Transportation Management Systems (TMS), and other digital technologies has shifted digital competencies from a competitive advantage to an essential requirement for effective professional performance.

Despite the rapid advancement of digital technologies in logistics, the competencies required of dispatch personnel remain insufficiently explored. Most scholarly studies focus on the technological aspects of digitalisation, business process automation, or the implementation of digital platforms. However, the requirements imposed on personnel directly responsible for operating these systems receive only limited attention. At the same time, dispatchers working for international logistics companies in the U.S. market within a distributed workforce model face a range of specific challenges, including interactions with freight brokers, compliance with Federal Motor Carrier Safety Administration (FMCSA) regulations, time-zone differences, and the high intensity of digital communication. These characteristics remain insufficiently reflected in existing approaches to describing the competencies of logistics personnel.

This issue has both practical and academic significance. From a practical perspective, the lack of a clear understanding of the structure and content of dispatch personnel competencies complicates the development of effective systems for recruitment, training, adaptation, and performance evaluation within logistics companies. From an academic standpoint, it represents a distinct area of inquiry at the intersection of digital transformation, HR management, and international logistics, highlighting the need for further research into the competencies required of dispatch personnel in the context of the digitalisation of international logistics operations.

Analysis of Recent Research and Publications. Contemporary research on the digital transformation of logistics emphasises the development of employees’ digital competencies and the adaptation of job functions to the requirements of a digital environment. In particular, Koh and Yuen [6], Tubis [11], and Nguyen [8] identify digital competencies as one of the key determinants of logistics process effectiveness in the context of Industry 4.0, highlighting the growing importance of technological literacy, analytical thinking, and the ability to work with digital platforms.

A separate stream of research examines the impact of digitalisation on human resource management systems. Studies by Kravchuk, Varis, and Rubel [7], as well as by Bouwmans, Lub, Orlowski, and Nguyen [2], substantiate the need to transform HR approaches to employee recruitment, development, and performance evaluation in a digital environment. These authors emphasise the increasing significance of competency-based approaches and the development of digital skills as essential components of contemporary human resource management.

In the context of remote and distributed work arrangements, Consiglio et al. [3] and Urrejola-Contreras [12] highlight the effects of technostress, digital fatigue, and professional burnout on employee performance. Their findings highlight the importance of considering the psychological and behavioural dimensions

of digital transformation when designing and implementing organisational HR policies.

Theoretical foundations of digital logistics and the transformation of logistics processes have been examined by Pekarčíková et al. [10], Dubey et al. [5], and Shkrygun [9]. These studies conceptualise digitalisation as a comprehensive process that integrates digital platforms, analytical tools, and automated management systems into logistics and supply chain operations.

The functioning of Ukraine's logistics sector under wartime conditions has been explored by Kushnir et al. [14] and Yevtushenko et al. [15], who analyse the transformation of logistics processes and the adaptation of businesses to the challenges of a rapidly changing operating environment.

Issues related to digital operating models in international logistics and the entry of Ukrainian companies into the U.S. market were examined in the authors' previous study [13]. The findings of that research provide the foundation for the present analysis of dispatcher competencies within a distributed workforce model.

Despite the substantial body of research on logistics digitalisation and human resource management, existing studies pay limited attention to the specific nature of dispatching activities in the U.S. freight transportation market. In particular, insufficient consideration has been given to the implications of FMCSA regulatory requirements, interactions with freight brokers, operations across significant time-zone differences, and the influence of these factors on the competency profile of dispatch personnel working within international distributed workforce models.

Highlighting previously unresolved parts of the overall problem. Despite the substantial body of research on logistics digitalisation and human resource management, the systematisation of competencies required of dispatch personnel operating within international distributed operating models remains insufficiently explored. Existing approaches to developing competency profiles for logistics personnel only partially reflect the specific characteristics of the U.S. freight transportation market, including FMCSA regulatory requirements, interactions with freight brokers and owner-operators, and the challenges arising from significant time-zone differences across organisational units. As a result, limited attention has been paid to adapting competency frameworks to the operating conditions of logistics companies active in the U.S. market and employing distributed workforce models. This lack of adaptation constrains the applicability of existing approaches to the recruitment, training, and performance evaluation of dispatch personnel within international logistics businesses.

Formation of the objectives of the article (task statement). The purpose of this article is to examine the impact of the digitalisation of U.S. international logistics on the transformation of dispatch personnel's job functions and to develop a systematisation of the competencies required for effective performance within a distributed workforce model, based on an analysis of the operating model of PE "TAD".

The methodological foundation of the study is based on an analysis of the scholarly literature on logistics digitalisation, workforce competencies, and human resource management, as well as an examination of the operating model of PE "TAD", the internal logic of dispatching processes, the digital infrastructure supporting logistics operations, and the organisational features of distributed interaction between the company's local U.S. unit and its operational centre in Ukraine.

Summary of the main research material. Over the past decade, the U.S. logistics industry has undergone a profound technological transformation. The mandatory implementation of Electronic Logging Devices (ELDs) in accordance with FMCSA requirements, the widespread adoption of digital freight platforms such as DAT and Truckstop, and the transition of major logistics operators - including DHL, Maersk, and C.H. Robinson -to integrated Transportation Management Systems (TMS) with API-based integration capabilities [4] have established new standards for organising logistics operations. Under these conditions, companies that fail to adopt contemporary digital solutions risk losing competitiveness and encountering increasing difficulties in complying with the regulatory requirements of the U.S. market.

This technological transformation has intensified the need for workforce competency development. Researchers emphasise that the digital transformation of logistics requires the continuous enhancement of employee competencies, as the introduction of new technologies reshapes job functions and alters the requirements of professional practice [6; 11]. According to Pekarčíková et al., logistics digitalisation involves not only the implementation of new technological tools but also the transformation of interaction patterns among participants in supply chains

[10]. Consequently, changes affect not only the technological infrastructure of logistics operations but also the content of employees' work. Dubey et al. argue that digital platforms and artificial intelligence tools are gradually evolving from sources of competitive advantage into essential components of logistics business operations [5], thereby increasing the need to develop relevant workforce competencies.

Shkrygun argues that digital logistics requires employees to combine technical, analytical, and communication competencies [9]. Under such conditions, the professional activities of logistics personnel extend beyond the execution of individual functional tasks and increasingly involve operating at the intersection of multiple competency domains. These requirements become particularly significant within distributed workforce models, where teams operate across different countries and time zones. Research in the field of human resource management indicates that, alongside professional and technical skills, growing importance is attached to digital communication, self-management, and the ability to work effectively under conditions of continuous technological pressure [2; 3; 8].

PE "TAD" is a Ukrainian logistics company pursuing expansion into the U.S. market through a hybrid organisational model that combines a local presence in the United States with an operational dispatch centre in Ukraine. A detailed analysis of this model was presented in the authors' previous study [13]. In the context of the present research, the PE "TAD" model is considered an example of a distributed workforce approach that is increasingly widespread in international logistics and is generating new competency requirements for dispatch personnel.

The local unit in the United States performs functions related to the company's legal presence, regulatory compliance, and client relations. Its primary responsibilities include registration and operational compliance with the requirements of the Federal Motor Carrier Safety Administration (FMCSA), obtaining USDOT and MC operating authority, ensuring compliance with the International Registration Plan (IRP) and the International Fuel Tax Agreement (IFTA), and maintaining insurance coverage in accordance with U.S. industry standards. Most operational activities are carried out by the dispatch team based in Ukraine, which is responsible for sourcing freight through digital platforms, interacting with American freight brokers and owner-operators, coordinating transportation activities, monitoring load execution, and managing documentation within a continuous operating environment despite the time-zone differences between the two countries.

The effective functioning of this model relies on an integrated digital infrastructure that enables real-time coordination of logistics operations. The principal digital tools include freight platforms such as Sylectus, DAT, Truckstop, and 123Loadboard; GPS tracking and Transportation Management Systems (TMS); and IP telephony and digital communication technologies. An essential component of this digital environment is the use of Electronic Logging Devices (ELDs), which are mandatory for commercial carriers operating in the U.S. market under FMCSA regulations.

The dispatcher's operational cycle within this model encompasses freight sourcing and load negotiation, interaction with brokers and carriers, coordination of transportation activities, management of shipping documentation (Bill of Lading (BOL), Proof of Delivery (POD), and rate confirmations), as well as responding to deviations from planned transportation parameters. The performance of these functions requires the simultaneous management of multiple information flows, continuous interaction with various participants in the logistics process, and rapid, real-time decision-making. Such an organisation of work creates an environment characterised by high operational intensity and significant cognitive demands, thereby increasing the competency requirements for dispatch personnel.

The operating model described above, which combines a distributed team structure, digital coordination mechanisms, and operations within the U.S. regulatory environment, served as the empirical basis for the authors' proposed competency systematisation.

The digitalisation of U.S. logistics affects not only the technological infrastructure of transportation operations but also the organisation of dispatch personnel's work. The integration of Transportation Management Systems (TMS), Electronic Logging Devices (ELDs), digital freight platforms, and remote coordination tools has created a new type of operating environment in which job functions are transformed, the intensity of information exchange increases, and competency requirements become more complex. The conceptual logic of these interrelationships is presented in Figure 1.

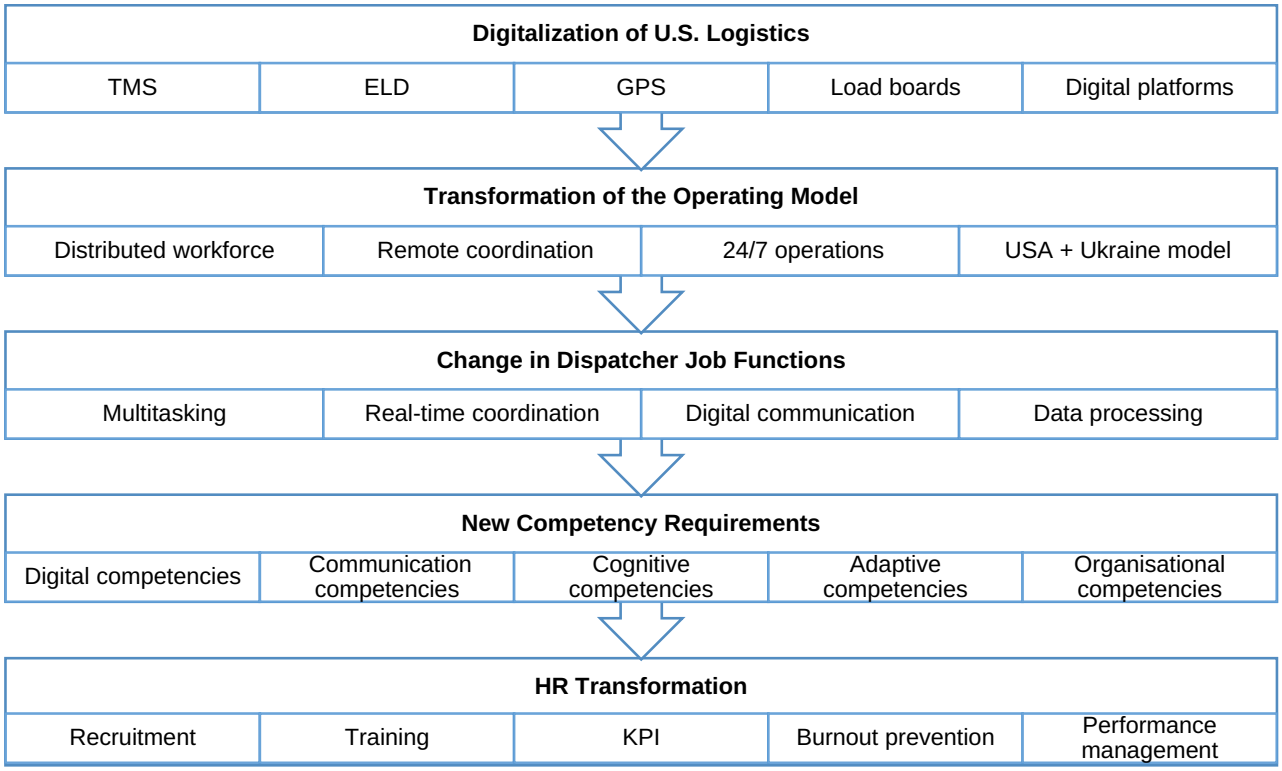

Figure 1. The Impact of U.S. Logistics Digitalisation on the Transformation of Dispatch Personnel Competencies

Source: compiled by the authors based on [2; 5; 6; 7; 9; 11; 13]

Figure 1 illustrates that the transformation of dispatch personnel competencies is driven by broader processes of digitalisation within the U.S. logistics industry. The implementation of Transportation Management Systems (TMS), Electronic Logging Devices (ELDs), GPS monitoring technologies, and digital freight platforms has altered not only technological processes but also the very nature of operational activities. As a result, the traditional dispatching function has evolved into a complex system of digital coordination that integrates information flow management, remote interaction among transportation stakeholders, and real-time decision-making.

Changes in the operating environment are accompanied by a reassessment of workforce requirements. In contemporary logistics, operational effectiveness increasingly depends not only on employees' technical expertise but also on their ability to process large volumes of information, coordinate interactions among multiple participants in transportation operations, adapt to intensive digital communication, and make decisions under conditions of uncertainty. Consequently, logistics companies are required to reconsider their approaches to employee recruitment, training, and performance evaluation.

The analysis of the operating model of PE "TAD" indicates that dispatch personnel in the U.S. digital logistics sector operate in an environment characterised by high information intensity, multitasking, and continuous digital coordination. Consequently, alongside professional knowledge and technical expertise, digital, communication, cognitive, adaptive, and organisational competencies play a critical role in ensuring the continuity and efficiency of logistics processes within distributed workforce models.

The intensity and diversity of dispatch personnel's responsibilities require heightened professional competencies. Tubis argues that employees' ability to use digital tools effectively constitutes an important indicator of an organisation's level of digital maturity [11]. This suggests that the development of digital competencies directly affects the effectiveness of operational processes. Nguyen's findings further confirm a positive relationship between employee engagement in digital processes and the performance of logistics companies [8]. Therefore, the development of dispatch personnel's digital competencies should be

regarded as a key factor in enhancing operational effectiveness within logistics businesses.

Based on an analysis of the scholarly literature [2; 6; 7; 8; 11] and the operating model of PE “TAD” [13], the authors systematised five competency groups required of dispatch personnel in the context of U.S. international logistics (Table 1). The classification of these competency groups follows a functional logic. It draws on contemporary approaches to digital competencies, workforce adaptability, and operational coordination from the literature on digital logistics and human resource management. Digital competencies reflect the ability to operate within the technological infrastructure of the logistics market; communication competencies ensure effective interaction among participants in a distributed workforce model; cognitive competencies are associated with information processing and decision-making under conditions of high operational intensity; adaptive competencies characterise employees’ ability to function effectively in environments marked by technostress and time-zone asynchrony; and organisational competencies support process coordination and the continuity of logistics operations. The authors’ contribution lies in adapting these approaches to the specific context of dispatching activities within a logistics model that combines a local presence in the United States with an operational centre in Ukraine.

Digital competencies constitute a fundamental requirement for professional activity in the U.S. logistics services market, as insufficient competency levels significantly constrain the effective performance of dispatching functions. Their importance is determined not only by their impact on operational efficiency but also by the need to comply with regulatory requirements. In particular, the FMCSA mandates the use of Electronic Logging Devices (ELDs), making proficiency in the relevant digital tools an integral component of dispatch personnel’s professional activities. Koh and Yuen emphasise that, in the context of Industry 4.0, technological literacy has evolved from an additional advantage for logistics professionals into a fundamental requirement for effective professional performance [6].

Communication competencies assume particular importance in distributed workforce models, where interaction between organisational units primarily occurs through digital channels. A distinctive feature of the U.S. logistics market is the prominent role of freight brokers, who coordinate a substantial share of freight movements through platforms such as DAT and Truckstop. Under these conditions, effective interaction with brokers requires not only proficiency in English but also an understanding of U.S. business culture, professional communication practices, and specialised logistics terminology.

Cognitive competencies play a critical role in the context of logistics digitalisation, as they enable employees to make informed decisions in rapidly changing operational environments. Dispatching activities involve the simultaneous management of multiple information flows, interaction with various transportation stakeholders, continuous shipment monitoring, and prompt responses to deviations from planned performance indicators. According to Bouwmans et al., critical thinking and data analysis are among the key competencies required for successful digital transformation [2]. The analysis of the TAD distributed workforce model further confirms the growing importance of these competencies in ensuring the continuity and effectiveness of logistics operations.

Within the TAD model, adaptive competencies are largely shaped by the need to operate across time zones between Ukraine and the United States, which range from seven to ten hours. This characteristic of work organisation affects employees’ working schedules, the intensity of digital interaction, and operational decision-making processes. Studies by Consiglio et al. and Urrejola-Contreras indicate that technostress and digital fatigue negatively affect the quality of managerial and operational decisions and represent significant contributors to professional burnout among remote workers [3; 12]. Under such conditions, employees’ ability to adapt to prolonged digital workloads, changing operational environments, and time-zone asynchrony becomes a critical prerequisite for maintaining the effectiveness of distributed workforce models.

Organisational competencies ensure effective coordination among all participants in the logistics process, including drivers, owner-operators, freight brokers, and customers. Their key manifestations include managing documentation in compliance with FMCSA requirements, monitoring operational performance indicators, and coordinating the activities of distributed teams. Kravchuk, Varis, and Rubel emphasise that the digitalisation of business processes necessitates a reassessment of approaches to employee recruitment, development, and performance evaluation [7]. In this context, the organisational competencies of dispatch

Table 1

Systematisation of Dispatch Personnel Competencies in the Context of U.S. International Logistics Digitalisation

Competency Group	Competency Content	Digital Tools / Processes	Manifestation in Dispatching Activities	HR Risks Associated with Competency Deficits
1	2	3	4	5
Digital Competencies	Proficient use of specialised logistics software; digital data handling; understanding of the U.S. freight transportation digital ecosystem; compliance with ELD-related regulatory requirements	TMS (Sylectus), load boards (DAT, Truckstop, 123Loadboard), GPS monitoring, ELD systems, IP telephony, digital documentation (BOL, POD, rate confirmations)	Use of digital platforms for freight sourcing, transportation coordination, and shipment monitoring; preparation and management of electronic documentation in accordance with FMCSA requirements	Difficulties in performing operational tasks; transportation delays; risks of non-compliance with FMCSA requirements; reduced service quality and customer loss
Communication Competencies	Professional communication in English; cross-cultural interaction; negotiation skills; accuracy and timeliness of information exchange; effective interaction with freight brokers as key intermediaries in the U.S. market	Email, messaging platforms (Slack, Teams), IP telephony, broker platforms (DAT, Truckstop), Zoom, Google Meet, CRM systems	Coordination of interactions among brokers, carriers, customers, and internal units; maintaining continuous communication among participants in the distributed workforce model	Failed negotiations with brokers; communication errors; weakened coordination between organisational units; reputational damage
Cognitive Competencies	Critical thinking; analytical skills; multitasking; decision-making under uncertainty; real-time analysis of operational information	TMS analytics, KPI dashboards, shipment monitoring systems, routing tools, load boards for alternative sourcing solutions	Simultaneous management of multiple shipments; responding to schedule disruptions, delays, and operational contingencies; selecting alternative carriers and routes	Errors in transportation management; SLA violations; financial penalties; reduced quality of operational decisions during periods of high workload
Adaptive Competencies	Stress resilience; ability to operate in environments characterised by intensive digital interaction; adaptation to changing regulatory requirements and digital tools; commitment to continuous learning; prevention of digital fatigue	Workforce scheduling systems, notification tools, corporate learning platforms, rotational work schedules	Working across significant time-zone differences between the United States and Ukraine; rapid adaptation to changing operational conditions and digital technologies; maintaining stable performance levels	Professional burnout; digital fatigue; deterioration in decision quality due to fatigue; increased employee turnover

(End Table 1)

1	2	3	4	5
Organisational Competencies	Priority management; coordination of interactions among transportation stakeholders; monitoring operational performance indicators; management of documentation in compliance with FMCSA requirements; coordination of distributed workforce processes	TMS platforms, electronic document management systems, KPI dashboards, team collaboration platforms	Coordination of drivers, owner-operators, freight brokers, and customers; documentation control; ensuring service performance and operational continuity	Regulatory non-compliance; reduced control over logistics processes; deterioration in service quality; ineffective team coordination

Source: compiled by the authors based on [2; 3; 6; 7; 8; 11; 12; 13]

personnel represent an important prerequisite for maintaining the effectiveness of digital logistics operations.

The systematisation presented in Table 1 indicates that digital and communication competencies are the most critical for ensuring the continuity of logistics operations. Insufficient development of these competencies creates risks of regulatory non-compliance, limits the effective use of digital platforms, and reduces the quality of interaction with freight brokers, carriers, and customers. Within the highly regulated U.S. logistics market, such limitations may adversely affect transportation coordination and undermine a company's competitive position.

Adaptive and cognitive competencies give rise to another category of risks associated with prolonged digital workloads and the high intensity of operational activities. Urrejola-Contreras found that technostress-related factors exacerbate mental fatigue among remote workers and negatively affect decision-making quality [12]. Consiglio et al. likewise confirmed the relationship between intensive digital interaction, deteriorating psychological well-being, and the risk of professional burnout [3]. For dispatch personnel operating across time zones between the United States and Ukraine and responsible for the continuous coordination of logistics processes, such risks should be carefully considered when designing HR policies and employee support systems.

The identified characteristics of the dispatcher competency profile have important implications for human resource management in logistics companies. In particular, recruitment processes should take into account candidates' levels of digital competency development, including proficiency in Transportation Management Systems (TMS), load boards, Electronic Logging Devices (ELDs), professional English communication, and the ability to work effectively in remote and digitally mediated environments.

The findings of this study are consistent with those of Akter et al., who identify the development of employees' digital competencies as a key prerequisite for the successful digital transformation of human resource management systems. In contemporary organisations, the level of digital competency development increasingly influences the effectiveness of workforce management and organisations' capacity to adapt to the requirements of a digital environment [1].

The results also indicate the need to broaden the scope of training and onboarding programmes for dispatch personnel. Alongside technical preparation, greater emphasis should be placed on developing cognitive resilience, strengthening the ability to operate effectively in information-intensive environments, and implementing measures to prevent digital fatigue.

In turn, the performance of dispatch personnel should be assessed using indicators that reflect the quality of logistics process coordination,

including OTIF and SLA performance levels, responsiveness to operational disruptions, and the accuracy of documentation management.

Conclusions. The study confirmed that the digitalisation of U.S. international logistics is substantially transforming the nature of dispatch personnel's work and reshaping the requirements for their professional development. The implementation of Transportation Management Systems (TMS), Electronic Logging Devices (ELDs), digital freight platforms, GPS monitoring technologies, and digital documentation systems has shifted the dispatcher's role from traditional transportation coordination towards the management of digital information flows within a complex logistics ecosystem. Under these conditions, the effectiveness of dispatch personnel increasingly depends on the level of competency development required for operating in a digital environment.

The study proposes an original systematisation of dispatch personnel competencies comprising five interrelated groups: digital, communication, cognitive, adaptive, and organisational competencies. Unlike existing approaches, the proposed framework reflects not only the requirements of a digital logistics environment but also the specific characteristics of dispatching activities within international distributed workforce models and the operational conditions of the U.S. logistics services market. The practical value of the proposed systematisation lies in its potential application to the development of competency profiles, as well as the improvement of recruitment, training, onboarding, and performance evaluation practices within logistics companies.

The findings indicate that the combination of a local company presence in the United States and an operational centre in Ukraine creates specific human resource management challenges associated with time-zone differences, the high intensity of digital communication, cross-cultural interaction, and the risk of digital fatigue. Under such conditions, adaptive and communication competencies become particularly important, as they support effective interaction among logistics process participants, ensure the continuity of operational activities, and contribute to the stable functioning of distributed workforce models.

The findings also demonstrate that insufficient development of particular competency groups may generate both operational and HR-related risks, including difficulties in complying with regulatory requirements, reduced effectiveness of transportation coordination, deterioration in communication performance, employee burnout, and lower efficiency of logistics operations. These results confirm the value of integrating a competency-based approach into the human resource management systems of logistics companies operating under conditions of digital transformation and international operational integration. At the same time, the proposed competency framework was developed based on a single-company case analysis, underscoring the need for further validation across other international logistics companies and different organisational settings.

Future research should focus on developing methodological tools to assess dispatch personnel competencies, empirically validating the proposed framework using broader samples of logistics companies, and formulating practical recommendations for adapting HR systems to the requirements of digitalised international logistics and distributed operating models.

REFERENCES:

1. Akter S., Biswas K., Vrontis D., Cooper S. C. L., Tarba S. Y. (2024) Mastering digital transformation in workforce management. *Production Planning & Control*, vol. 35, no. 13, pp. 1525–1532. Available at: https://doi.org/10.1080/09537287.2023.2270465

2. Bouwmans M., Lub X., Orlowski M., Nguyen T.-V. (2024) Developing the digital transformation skills framework: A systematic literature review approach. *PLoS ONE*, vol. 19(7), e0304127. Available at: https://doi.org/10.1371/journal.pone.0304127

3. Consiglio C., Massa N., Sommovigo V., Fusco L. (2023) Techno-Stress Creators, Burnout and Psychological Health among Remote Workers during the Pandemic: The Moderating Role of E-Work Self-Efficacy. *International Journal of Environmental Research and Public Health*, vol. 20(22). Available at: https://doi.org/10.3390/ijerph20227051

4. DHL Supply Chain (2023) Next-Generation TMS/WMS: The Future of Freight Management and Warehouse Operations. Available at: https://www.dhl.com/content/dam/dhl/global/dhl-supply-chain/documents/pdf/glo-dsc-next-gen-tms-wms.PDF

5. Dubey R., Gunasekaran A., Papadopoulos T. (2024) Benchmarking operations and supply chain management practices using Generative AI: towards a theoretical framework. *Transportation Research Part E: Logistics and Transportation Review*, vol. 189, 103689. Available at: https://doi.org/10.1016/j.tre.2024.103689

6. Koh L. Y., Yuen K. F. (2022) Emerging competencies for logistics professionals in the digital era: A literature review. *Frontiers in Psychology*, vol. 13, 965748. Available at: https://doi.org/10.3389/fpsyg.2022.965748

7. Kravchuk O. I., Varis I. O., Rubel K. O. (2024) HR Management Digitalization: Conceptual Aspects and Trends. *Problems of Modern Transformations. Series: Economics and Management*, no. 12. Available at: https://doi.org/10.54929/2786-5738-2024-12-07-04

8. Nguyen T.-H. (2025) Research on Factors Influencing the Employees' Digital Transformation Engagement and Job Performance in Logistics Companies. *SAGE Open*. Available at: https://doi.org/10.1177/21582440251353391

9. Shkrygun Y. (2021) Theoretical approaches to the definition of «digital logistics». *Economic Herald of the Donbas*, no. 3(65), pp. 137–146. Available at: https://doi.org/10.12958/1817-3772-2021-3(65)-137-146

10. Pekarčíková M., Trebuňa P., Kliment M., Edl M., Rosocha L. (2020) Transformation the logistics to digital logistics: theoretical approach. *Acta Logistica*, vol. 7, no. 4, pp. 217–223. Available at: https://doi.org/10.22306/al.v7i4.174

11. Tubis A. A. (2025) Competence Development of Logistics and Transport Staff as Part of an Organisation's Digital Maturity. *Implementation of Circular Economy in Supply Chains and Production Systems*. Springer, pp. 117–131. Available at: https://doi.org/10.1007/978-3-031-88926-4_9

12. Urrejola-Contreras G. P. (2023) Relationship between mental fatigue and burnout syndrome in remote workers during the COVID-19 pandemic: an integrative review. *Revista Brasileira de Medicina do Trabalho*, vol. 21(3), e20221003. Available at: https://doi.org/10.47626/1679-4435-2022-1003

13. Hryhoruk V. V., Varis I. O. (2026) Orhanizatsiino-operatsiina model internatsionalizatsii lohistychnoi kompanii na vysokorehulovannykh rynkakh: dosvid vykhodu na rynok SShA [Organizational and operational model of internationalization of a logistics company in highly regulated markets: experience of entering the US market]. *Efektyvna ekonomika – Effective Economy*, no. 4. Available at: https://doi.org/10.32702/2307-2105.2026.4.144 (in Ukrainian)

14. Kushnir Yu. B., Blaha M. M., Pop M. V., Pop Yu. V. (2023) Lohistyka ta mizhnarodna torhivlia Ukrainy v umovakh viiny [Logistics and international trade of Ukraine in wartime]. *Naukovyi visnyk Uzhhorodskoho universytetu. Seriia «Ekonomika» – Scientific Bulletin of Uzhhorod University. Series «Economics»*, no. 1(61), pp. 23–25. Available at: https://doi.org/10.24144/2409-6857.2023.1(61).23-25 (in Ukrainian)

15. Yevtushenko V., Shuba T., Tsviatko L., Popkova D. (2023) Stan ta perspektyvy rozvytku rynku lohistychnykh posluh v Ukraini [The state and prospects for the development of the logistics services market in Ukraine]. *Visnyk Khmelnytskoho natsionalnoho universytetu. Ekonomichni nauky – Herald of Khmelnytskyi National University. Economic sciences*, vol. 316, no. 2, pp. 117–120. Available at: https://doi.org/10.31891/2307-5740-2023-316-2-17 (in Ukrainian)

СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ:

1. Akter S., Biswas K., Vrontis D., Cooper S. C. L., Tarba S. Y. Mastering digital transformation in workforce management. *Production Planning & Control*. 2024. Vol. 35, Issue 13. P. 1525–1532. URL: https://doi.org/10.1080/09537287.2023.2270465

2. Bouwmans M., Lub X., Orlowski M., Nguyen T.-V. Developing the digital transformation skills framework: A systematic literature review approach. *PLoS ONE*. 2024. Vol. 19(7): e0304127. URL: https://doi.org/10.1371/journal.pone.0304127

3. Consiglio C., Massa N., Sommovigo V., Fusco L. Techno-Stress Creators, Burnout and Psychological Health among Remote Workers during the Pandemic: The Moderating Role of E-Work Self-Efficacy. *International Journal of Environmental Research and Public Health*. 2023. Vol. 20(22). URL: https://doi.org/10.3390/ijerph20227051

4. DHL Supply Chain. Next-Generation TMS/WMS: The Future of Freight Management and Warehouse Operations. 2023. URL: https://www.dhl.com/content/dam/dhl/global/dhl-supply-chain/documents/pdf/glo-dsc-next-gen-tms-wms.PDF

5. Dubey R., Gunasekaran A., Papadopoulos T. Benchmarking operations and supply chain management practices using Generative AI: towards a theoretical framework. *Transportation Research Part E : Logistics and Transportation Review*. 2024. Vol. 189 : 103689. URL: https://doi.org/10.1016/j.tre.2024.103689

6. Koh L. Y., Yuen K. F. Emerging competencies for logistics professionals in the digital era: A literature review. *Frontiers in Psychology*. 2022. Vol.13: 965748. URL: https://doi.org/10.3389/fpsyg.2022.965748

7. Kravchuk O. I., Varis I. O., Rubel K. O. HR Management Digitalization: Conceptual Aspects and Trends. *Problems of Modern Transformations. Series: Economics and Management*. 2024. № 12. URL: https://doi.org/10.54929/2786-5738-2024-12-07-04

8. Nguyen T.-H. Research on Factors Influencing the Employees' Digital Transformation Engagement and Job Performance in Logistics Companies. *SAGE Open*. 2025. URL: https://doi.org/10.1177/21582440251353391

9. Shkrygun Y. Theoretical approaches to the definition of «digital logistics». *Economic Herald of the Donbas*. 2021. No. 3(65). P. 137–146. URL: https://doi.org/10.12958/1817-3772-2021-3(65)-137-146

10. Transformation The Logistics To Digital Logistics: Theoretical Approach / M. Pekarčíková та ін. *Acta logistica*. 2020. Т. 7, № 4. С. 217–223. URL: https://doi.org/10.22306/al.v7i4.174

11. Tubis A. A. Competence Development of Logistics and Transport Staff as Part of an Organisation's Digital Maturity. *Implementation of Circular Economy in Supply Chains and Production Systems*. Springer, 2025. P. 117–131. URL: https://doi.org/10.1007/978-3-031-88926-4_9/

12. Urrejola-Contreras G. P. Relationship between mental fatigue and burnout syndrome in remote workers during the COVID-19 pandemic: an integrative review. *Revista Brasileira de Medicina do Trabalho*. 2023. Vol. 21(3) : e20221003. URL: https://doi.org/10.47626/1679-4435-2022-1003

13. Григорук В. В., Варіс І. О. Організаційно-операційна модель інтернаціоналізації логістичної компанії на високорегульованих ринках: досвід виходу на ринок США. *Ефективна економіка*. 2026. № 4. URL: https://doi.org/10.32702/2307-2105.2026.4.144

14. Логістика та міжнародна торгівля України в умовах війни / Ю. Б. Кушнір та ін. Науковий вісник Ужгородського університету. Серія «Економіка». 2023. № 1(61). С. 23–25. URL: https://doi.org/10.24144/2409-6857.2023.1(61).23-25

15. Стан та перспективи розвитку ринку логістичних послуг в Україні / В. Евтушенко та ін. *Вісник Хмельницького національного університету. Економічні науки*. 2023. Т. 316, № 2. С. 117–120. URL: https://doi.org/10.31891/2307-5740-2023-316-2-17

Дата надходження статті: 17.06.2026
Дата прийняття статті: 08.07.2026
Дата публікації статті: 10.07.2026