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Influence of personal managerial competencies on ensuring operational compliance with the requirements of U.S. digital logistics platforms: the case of Amazon Relay

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Abstract. The development of digital logistics platforms in the USA increases the requirements for the operational compliance of participants in the transportation process. The Amazon Relay platform operates on the basis of regulated procedures, safety standards, and control over the implementation of transportation, which increases the importance of managerial competencies, since operational violations and deviations from standards are largely due to the level of training of managers of transport companies and dispatching services, and their insufficiency leads to increased risks, violations of regulations and a decrease in competitiveness. The **purpose of the study** is to determine the impact of personal managerial competencies of managers of transport and logistics companies on ensuring operational compliance with the requirements of digital logistics platforms in the USA, using the example of Amazon Relay, as well as to substantiate areas for improving the efficiency of transportation management. **Methods.** The study used a



systematic approach, methods of logical generalization, comparative analysis, structuring and modeling. Elements of process analysis were used to assess the compliance of operational actions with the platform's established requirements. The information basis was open regulations, analytical materials and practical recommendations on the functioning of digital logistics services. **Results.** It was established that the level of development of managerial competencies determines the ability of managers of transport companies and logistics operators to ensure compliance with booking procedures, flight execution, time control and documentary support. The relationship between the manager's competency characteristics and operational efficiency indicators was substantiated. Key competencies were identified, including analytical thinking, digital literacy, risk management skills and process coordination, which are considered as an integrated managerial competency for ensuring operational compliance in a digital logistics environment. A structural model of the influence of competencies on operational compliance levels on a digital platform was proposed. **Conclusions.** It has been proven that the development of managerial competencies contributes to increased operational compliance among shipping companies operating on the Amazon Relay platform, reduced violations of operational regulations and requirements of the digital platform, and optimized logistics processes. Directions for improving managerial activities to increase the efficiency of carriers on digital platforms are formulated.

Keywords: managerial professional skills, process compliance, digital freight services, dispatching, risk management, supply chains, operational efficiency, logistics digitalization.



**Вплив персональних управлінських компетенцій на забезпечення
операційної відповідності вимогам цифрових логістичних платформ
США: на прикладі Amazon Relay**

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Анотація. Розвиток цифрових логістичних платформ США підвищує вимоги до операційної відповідності учасників перевізного процесу. Платформа Amazon Relay функціонує на основі регламентованих процедур, стандартів безпеки та контролю виконання перевезень, що посилює значення управлінських компетенцій, оскільки операційні порушення та відхилення від стандартів значною мірою зумовлені рівнем підготовки керівників транспортних компаній і диспетчерських служб, а її недостатність призводить до зростання ризиків, порушення регламентів і зниження конкурентоспроможності. **Метою дослідження** є визначення впливу персональних управлінських компетенцій керівників транспортно-логістичних компаній на забезпечення операційної відповідності вимогам цифрових логістичних платформ США на прикладі Amazon Relay, а також обґрунтування напрямів підвищення ефективності управління перевізною діяльністю. **Методи.** У дослідженні використано системний підхід, методи логічного узагальнення, порівняльного аналізу, структуризації та моделювання. Застосовано елементи процесного аналізу для оцінювання відповідності операційних дій вимогам платформи. Інформаційною основою були відкриті регламенти, аналітичні матеріали та практичні рекомендації щодо функціонування цифрових логістичних сервісів. **Результати.** Встановлено, що рівень сформованості управлінських компетенцій визначає



здатність керівників транспортних компаній та логістичних операторів забезпечувати дотримання процедур бронювання, виконання рейсів, контроль часових параметрів та документальний супровід. Обґрунтовано взаємозв'язок між компетентнісними характеристиками управлінця та показниками операційної ефективності. Виділено ключові компетенції, серед яких аналітичне мислення, цифрова грамотність, навички управління ризиками та координації процесів, які розглядаються як інтегрована управлінська компетенція забезпечення операційної відповідності в цифровому логістичному середовищі. Запропоновано структурну модель впливу компетенцій на рівень операційної відповідності в умовах цифрової платформи. **Висновки.** Доведено, що розвиток управлінських компетенцій сприяє підвищенню рівня операційної відповідності перевізних компаній, що працюють у межах платформи Amazon Relay, зниженню кількості порушень операційних регламентів і вимог цифрової платформи, а також оптимізації логістичних процесів. Сформульовано напрями удосконалення управлінської діяльності, орієнтовані на підвищення результативності перевізників у межах цифрових платформ.

Ключові слова: професійні навички менеджера, комплаєнс процесів, цифрові сервіси перевезень, диспетчеризація, управління ризиками, ланцюги постачання, ефективність операцій, цифровізація логістики.

Problem statement. The operation of digital logistics platforms in the USA is subject to strict regulation of carrier activities, covering booking procedures, flight execution, adherence to time intervals, documentary support and security controls. The Amazon Relay platform provides a standardized interaction environment in which deviations from established requirements result in sanctions, such as blocking access to orders or lowering rating indicators. Under such conditions, ensuring



operational compliance becomes systemic and depends not only on the technical infrastructure but also on personnel's managerial competencies.

Existing practice shows that a significant part of regulatory violations is due not to technical limitations, but to shortcomings in managerial decisions, incoherence of actions, insufficient analytical processing of information, and errors in the coordination of transportation processes. At the same time, scientific research has not sufficiently elucidated the mechanisms by which managers' competence characteristics influence the compliance of operational processes with the requirements of digital platforms, which complicates the development of effective models of transport management.

The problem lies in the lack of a holistic approach to determining the relationship between the level of development of personnel's managerial competencies and operational compliance indicators in a digitalized logistics environment. This limits the potential to increase the efficiency of carriers' activities, reduce operational risks and ensure stable access to orders.

The connection of the study to important scientific and practical tasks lies in the need to develop substantiated approaches to assessing and developing managerial competencies to ensure compliance with platform requirements, increase the efficiency of logistics processes, and minimize regulatory violations. The results of the study are important for improving management practices in digital logistics, developing competency models for training specialists, and enhancing carriers' competitiveness on digital platforms.

Analysis of recent research and publications. The issues of digital transformation of logistics systems, platform-based organization of transportation, and management of operational efficiency in a digital environment are actively being addressed in the works of domestic and foreign scientists. Research covers issues such as the digitalization of logistics, the integration of information technologies into transport processes, the development of platform ecosystems, the provision of



competence in transportation management, and the increasing transparency of supply chains.

The work of D. V. Sedikov, H. I. Palvashova, and N. V. Asaulenko [1] considers digital management as a factor in transforming enterprises and increasing the efficiency of management processes. The study of T. Albrecht et al. [2] substantiates the role of digital technologies in logistics 4.0 with an emphasis on the operational capabilities of intra-logistics processes.

The typology of digital platforms for freight transportation management was developed by C. Heinbach et al. [3], which allows structuring platform models according to functional characteristics. The work of P. Golinska-Dawson et al. [4] established the influence of market factors on the level of digital maturity of logistics processes in supply chains.

The issue of digital transformation in logistics through automation technologies was highlighted by Y. P. Tsang et al. [5], who determined the importance of process robotization for improving management efficiency. S. Wycislak [6] analyzes the impact of real-time information on operational results and management decisions in logistics systems.

The role of supply chain transparency in improving the efficiency of inbound logistics was studied by R. Kalaiarasan et al. [7], who emphasize the importance of information consistency of flows. In the work of S. Bakhouch and B. Benbba [8], the systematization of competency models for 3PL operations managers was carried out, which serves as a basis for assessing management potential in logistics structures.

The conceptual principles of digital twins for logistics systems were developed by T. V. Le and R. Fan [9], who identified directions for improving the manageability and transparency of operations. The study by H. Nozari et al. [10] identified key challenges for implementing IoT in digital supply chains, including infrastructure and security constraints.



Practical aspects of optimizing transport routes using artificial intelligence are considered by O. Korostin [11], who demonstrates the potential of algorithmic solutions in transport logistics. A. Sokolenko [12] explores the factors influencing the competitiveness of digital products on international platforms, expanding understanding of the platform economy.

A. Riabokon [13] analyzes the institutional efficiency of decentralized autonomous organizations in digital ecosystems, reflecting new forms of organizing digital governance. H. H. Tolobaiev [14] considers the economic aspects of decarbonizing maritime logistics, focusing on global transformations of the transport sector and the use of artificial intelligence to optimize costs in maritime transportation [15].

The set of studies presented provides a theoretical and methodological basis for analyzing the impact of managerial competencies on operational efficiency and compliance in digital logistics platforms and identifies directions for further scientific development of this issue.

Identification of previously unresolved parts of the general problem.

Despite the availability of research on logistics process management and the functioning of digital platforms, a number of important aspects of the problem remain insufficiently studied. First of all, there is no clear definition of the relationship between the level of formation of personal managerial competencies and indicators of operational compliance in the conditions of platform logistics. Existing scientific approaches mostly address either the technical parameters of platform operation or general personnel management issues, without integrating them into a single analytical model. The issue of identifying specific competencies of managers of transport and logistics companies that directly affect compliance with booking procedures, transportation performance, time discipline and documentary support in the Amazon Relay environment also remains insufficiently researched.



The insufficient level of elaboration of these aspects is due to the interdisciplinary nature of the problem, which integrates management, logistics and digital technological components. In addition, limited access to internal platform data and the complexity of formalizing managers' behavioral characteristics complicate empirical research. The scientific discourse is dominated by an orientation towards technical and economic indicators of efficiency, while the competency dimension of management remains in the background.

These unresolved parts are critically important for a deeper understanding of the general problem, since it is management decisions that determine carriers' ability to adapt to the regulated environment of digital platforms, minimize disruptions and ensure the stability of operational activities. The lack of a systemic view of the impact of employee competencies limits the ability to develop effective management models and increase the efficiency of transportation processes.

Formulation of the article objectives (task statement). The purpose of the article is to determine the impact of personnel management competencies on the level of operational compliance with the requirements of USA digital logistics platforms, using Amazon Relay as an example, and to substantiate directions for increasing the effectiveness of transportation management in conditions of platform interaction.

To achieve the set goal, the following research tasks were defined:

- to determine the composition and content of key management competencies of managers of transport and logistics companies that affect compliance with regulated transportation procedures;
- to investigate the relationship between the level of formation of management competencies of managers of transport and logistics companies and indicators of operational efficiency and operational compliance of transportation companies operating within the Amazon Relay digital platform;



- to develop a structural model of the impact of management competencies on ensuring the operational compliance of carriers with the requirements of the Amazon Relay digital logistics platform;

- to substantiate practical recommendations for increasing the effectiveness of management of transport and logistics processes.

Presentation of the main material of the study. Digital logistics platforms in the USA are information- and algorithm-based freight management systems that provide automated order distribution, carrier coordination, flight execution control and real-time recording of operational parameters. Their functioning is based on balancing supply and demand in the logistics environment through digital mechanisms that regulate participants' interactions.

Increasing the level of formalization of operations is accompanied by greater requirements for the accuracy of task performance, compliance with time intervals and adherence to established procedures. Each stage of transportation is under digital control, which makes the effectiveness of carriers' activities dependent on the quality of management decisions and the ability to ensure compliance with regulatory standards [1, p. 32]. At the same time, the effectiveness of participation in the logistics process is determined by the consistency of management actions with the requirements of the platform environment and by the efficiency with which changes in operational parameters are responded to. The increase in the complexity of logistics operations underscores the importance of individual management characteristics in maintaining task performance and minimizing deviations from specified performance indicators.

Analysis of the role of managerial competencies in ensuring the stability of logistics processes requires detailing their content and structural components. Of particular importance is the identification of a set of managerial competencies that directly determine personnel's ability to comply with regulated transportation



procedures, coordinate operational actions and ensure the accuracy of task performance within the digital environment [2, p. 764].

Table 1 summarizes data on key managerial competencies and their practical application in organizing the transportation process within the digital logistics platform Amazon Relay. The above characteristics reflect the functional dimensions of managerial activity that determine the level of compliance with regulated procedures, consistency of operational actions and the ability to ensure the stability of transportation tasks in the digital environment.

Table 1

Complex of management competencies in providing transportation processes in a digital logistics environment

Management competency	Characteristics	Practical manifestations in the transportation process	Technological support
Analytical thinking	Processing operational data, assessing risks and making decisions based on indicators	Route selection, estimating delivery time and predicting delays	GPS navigation, analytical modules of the platform, and telematics systems
Digital literacy	Using transportation management information systems	Working with the platform, confirming flights and monitoring statuses	Amazon Relay, the mobile application of the carrier
Organizational coordination	Coordination of actions between participants in the logistics process	Schedule planning, synchronization of loading and delivery	TMS systems (Transportation Management System), CRM logistics
Time resource management	Monitoring compliance time parameters	Adherence to loading slots, minimizing downtime	ETA/ETD monitoring systems, real-time tracking
Risk management	Identification and minimization of operational risks	Responding to traffic jams, weather factors and route changes	Traffic monitoring systems, weather APIs, GPS tracking
Communication competence	Effective interaction between transportation participants	Agreement on delivery terms, informing about changes	Platform messengers, dispatching systems, EDI
Adherence to regulations (compliance)	Fulfillment of platform rules and regulatory requirements	Uploading documents, confirmation of delivery	Electronic document flow, ELD systems, digital signatures

Source: compiled by the author based on [5; 6; 7; 16; 17]



The data in Table 1 demonstrate that management competencies form a multi-level system for ensuring the performance of transportation tasks in a digital environment. The analytical component determines the quality of solutions for route planning and delivery parameter assessment, which directly affects the accuracy of logistics operations. The digital information component ensures the carrier's integration into the electronic order management infrastructure, where interaction with the Amazon Relay platform services plays a key role.

The coordination and organizational dimension reflect the ability to coordinate actions between participants in the logistics chain, which determines the continuity of transportation and synchronization of technological stages. The time component is directly related to compliance with traffic schedules and minimizing deviations in flight performance, which affects the stability of service indicators. The risk-oriented component ensures adaptation to changes in external conditions, including traffic jams and weather factors, which allows reducing the likelihood of operational losses.

The communication component provides information coordination between dispatching services and transportation performers, increasing the speed of response to changes in the conditions of order fulfilment. The regulatory component ensures compliance with the platform's established requirements, establishes operational discipline and reduces the risk of violations.

Thus, the efficiency of carriers' transportation activities is determined not by individual personnel skills, but by their integrated interaction, which enables stable performance in a regulated digital environment [3, p. 819].

Within the framework of the functioning of Amazon Relay, transportation processes are organized as a formalized system with clearly specified time, route and procedural parameters, the implementation of which is recorded and controlled in digital mode. All stages of the logistics cycle are subject to standardized monitoring, which creates a measurable basis for assessing the results of activities.



Operational efficiency in such a system is measured by a set of quantitative indicators that reflect the effectiveness of the transport resource. The main indicators include:

- average flight execution time, calculated as the ratio of the total time of all completed flights to their number for the period;
- downtime at loading and unloading points, defined as the difference between the actual time the vehicle is at the point of operation and the standard time interval;
- the share of timely completed transportation, calculated as the ratio of the number of flights completed within the established period to the total number of flights, in percent.

Operational compliance characterizes the level of compliance with regulated procedures and platform requirements. It is assessed through three basic indicators, in particular, the level of compliance with time slots (the share of flights performed in a specified time window out of the total number of operations), the share of correct execution of booking and delivery confirmation procedures (the ratio of correctly executed operations to the total volume of transportation), as well as the number of operational deviations (recorded as the absolute value of violations of the regulations for a certain number of flights, for example, for 100 transportations).

Under such conditions, the relationship between the level of development of managerial competencies and indicators of operational efficiency and compliance becomes direct. The growth of analytical, digital and coordination capabilities of management personnel ensure greater accuracy in transportation planning, reduced deviations from established schedules, reduced downtime at the loading and delivery stages and a more stable implementation of regulated procedures. At the same time, an insufficient level of managerial decision-making is manifested in violations of time slots, an increase in operational deviations, and a decrease in the consistency of actions within the logistics process [4]. The identified dependencies between the level of development of managerial competencies and the effectiveness of



transportation processes allow for the presentation of an integral level of managerial competence in the form of a structural model (fig. 1), which reflects its formation through a combination of operational efficiency and compliance with regulated requirements in the digital logistics environment Amazon Relay.

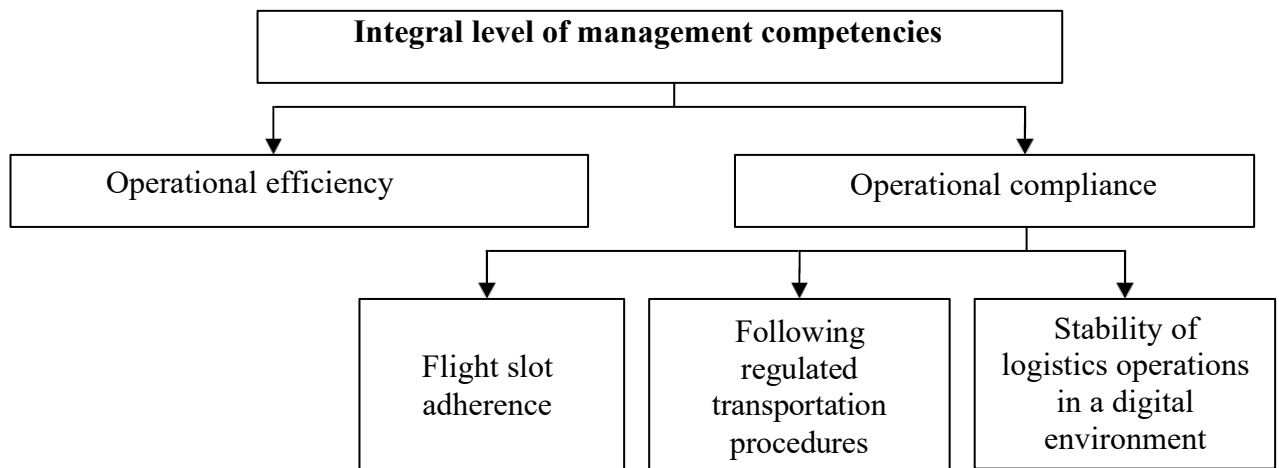


Fig. 1. Model of the influence of management competencies on operational efficiency and compliance indicators in a digital logistics environment

Source: author's own development

The impact of management competencies on the outcomes of transportation activities in the context of the Amazon Relay platform can be represented through an indirect mechanism: the formation of operational compliance, which subsequently impacts operational efficiency. Within the proposed model, the integral level of management competencies reflects the quality of management decisions during logistics operations.

The specified level of competencies determines the change in two interrelated groups of performance indicators, namely operational compliance and operational efficiency, which provides a systemic connection between management influence and actual transportation results.

Operational efficiency in the model is considered a general result of transportation consistency and timeliness. Its growth is manifested in reduced flight



duration, decreased vehicle downtime and increased on-time transportation, confirming an increase in the consistency of operational actions within the Amazon Relay digital platform.

Operational compliance refers to the degree of adherence to the platform's regulated procedures and is reflected in a decrease in the frequency of time slot violations, an increase in the accuracy of booking procedures, and a decrease in the number of operational deviations. This indicates a strengthening of the executive discipline of the participants in the transportation process.

Thus, the presented model demonstrates that managerial competencies affect the outcomes of transportation activities by ensuring an appropriate level of operational compliance, which, in turn, determines operational efficiency indicators.

The justification of practical recommendations for improving the effectiveness of transportation process management is based on differences in the impact of managerial competencies on indicators of operational efficiency and operational compliance within the Amazon Relay digital logistics platform. Variations in flight duration, delivery timeliness and the frequency of violations of regulated procedures indicate an uneven impact of managerial decisions across different stages of the logistics cycle, necessitating greater formalization.

A feasible approach to improving the management of transportation processes within the Amazon Relay digital platform is the introduction of a multi-level system to validate management decisions before implementation. Each logistics operation should be evaluated based on time parameters, resource utilization levels, and compliance with regulatory requirements, which allows minimizing the risk of deviations during flight planning and increasing the stability of its execution.

A promising direction is the creation of a digital profile of transportation activities, which accumulates flight history, structures typical errors, and identifies recurring causes of delays. The use of accumulated data provides a basis for



predicting operational risks and transitioning to a management focused on preventing deviations.

Special attention should be paid to the implementation of algorithms for assessing the risk of flight non-performance, taking into account the route, time constraints, load level, and external factors. Ranking transportation tasks by degree of complexity allows optimizing resource allocation and reducing the load on critical areas of the logistics process.

An additional direction for improvement is the development of a system to build managerial competencies for managers of transport and logistics companies and dispatch personnel, based on an analysis of actual operational deviations. The development of training modules based on real errors ensures that managerial actions are adjusted in accordance with the identified patterns of transportation performance.

The implementation of these solutions marks a transition to a more structured model of transportation process management, where the variability of results is reduced, the predictability of logistics operations is increased, and compliance with the regulatory requirements of digital platforms is enhanced.

Conclusions. The conducted study summarized theoretical approaches to the role of management competencies in ensuring the stability of transportation processes in the digital logistics environment of Amazon Relay and confirmed their system-forming significance in shaping operational effectiveness.

It was established that operational efficiency and compliance with regulated procedures on digital logistics platforms are not determined by separate managerial actions, but result from the interaction of a complex of managerial decisions within a unified system for managing transportation activities of managers of transport and logistics companies and dispatching personnel.

During the study, the composition of key management competencies that affect the organization of the transportation process was determined, and their



substantive and functional purposes were revealed. It is shown that analytical, digital, coordination, time-organizational and risk-oriented competencies have different effects on ensuring flight speed parameters, transportation schedule stability and compliance with the operational requirements of the digital platform.

The results of the theoretical analysis indicate a systemic relationship between the level of formation of managerial competencies and indicators of operational efficiency and compliance. In particular, a higher level of managerial training can be considered a factor that contributes to greater consistency in logistics processes, reduced operational deviations and greater transportation stability.

Further scientific research should aim to expand the empirical base for assessing managerial competencies using large datasets of operational data, as well as to apply machine learning methods to predict deviations in logistics processes. A promising direction is also the study of the influence of the organizational culture of transport and logistics companies on the effectiveness of implementing managerial competencies in digital platforms.

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