Management of the Processes on the Quality Provision of the Logistic Activity in the Context of Socio-Economic Interaction of Their Participants

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Abstract
The article proves the relevance of developing conceptual frameworks for managing the quality assurance of logistics activities in the context of socio-economic interaction of their participants. It is established that the fundamental difference of the logistic approach in management from traditional approaches is the allocation of a single management function of previously separated, disparate material flows, as well as economic, technological, information integration of chain links into a single system capable of effective management of these flows. It is substantiated that the functioning of the enterprise as a logistics system can be represented in the form of a triad of logistics components, namely: supply logistics, production logistics, sales logistics. Management of quality assurance processes of logistics activities in the context of socio-economic interaction of their participants is a functional component of the entire logistics system due to the quality of work and interaction of all participants in the implementation of certain activities. The quality of logistics activities will affect the level of economic potential, rationalization and optimization of all logistics flows. It is proved that the management of quality assurance processes of logistics activities in the context of socio-economic interaction of their participants involves the following main areas: the introduction of a quality system of logistics processes; development and implementation of the general strategy of quality improvement at the enterprise; internal integration; controlling. Management of quality assurance processes of logistics activities in the context of socio-economic interaction of its participants requires compliance with the following requirements: systematic and comprehensive management of all flow processes; coordination of criteria and indicators for assessing the effectiveness of the entire logistics system; dissemination of the use and application of information technology; ensuring partnerships and close interaction of all participants in sales networks.

Key words:
quality management of logistics activities, quality management of supply chains, management of logistics processes, quality assurance of logistics activities, socio-economic interaction of participants in logistics processes.

1. Introduction

The issue of managing the quality assurance of logistics activities is gaining new relevance due to the global changes that have been provoked by the pandemic. The pandemic, which affected all countries of the world, directly affected economic processes, including logistics flows. Such challenges have led to the need to find new partners and directions for the movement of resources and goods. These and other conditions for the development of economic systems at different levels require the development of theoretical and methodological approaches to the management of quality assurance processes in logistics in the context of socio-economic interaction of their participants. The development of economic systems is in constant contact with economic entities, suppliers of resources and consumers of manufactured products. Achieving a positive effect from economic activity depends on the efficiency of responding to constant rapid changes in the environment and market conditions. Logistics is one of the effective tools for managing the activities of economic entities.

The aim of the study is to substantiate the conceptual approaches to the management of quality assurance processes in logistics in the context of socio-economic interaction of their participants.

2. Literature review

The following outstanding scientists have devoted their research to the issues of socio-economic development and management of the processes of high-quality logistics activities, taking into account innovative trends: Berezovskyi D. (2021) [1]; Dergaliuk M. (2021) [2]; Dmuchowski R. (2021) [3]; Hein C., Lasch R. (2021) [4]; Khanin S. (2021) [5]; Khaoula A. (2021) [6]; Dubyna M. (2021) [7]; Kholiavko N. (2021) [8]; Bazhenkov I. (2021) [9]; Kondratenko N. (2021) [10]; Kozenkova T. (2021) [11]; Liu K. (2021) [12]; Maraschin C. (2021) [13]; Pane S.F. (2021) [14]; Garafonova O. (2021) [15]; Sytnyk H. (2021) [16]; Popelo O. (2017) [17]; Rudnichenko Y. (2021) [18]; Sadeghian Esfahani S. (2021) [19]; Tulchynska S. (2021[20]; Vovk O. (2021) [21]; Živković A. (2021) [22] and others.

The authors [14] argue that strategies for purchasing goods and services are important for companies in the

Manuscript received December 5, 2021
Manuscript revised December 20, 2021
https://doi.org/10.22937/IJCSNS.2021.21.12.7

manufacturing and logistics sectors of Indonesia. Researchers have proposed a comparison plan in which the results of each of these processes rank each stage of procurement of goods and services consistently and together to provide prompt and accurate solutions that lead to a project comparable to the company's business strategy.

The article [12] analyzes that the development of rural e-commerce has become a new driving force for the transformation of economic development of the village and the realization of the revival of the village. The results of the study show that farmers are more willing to participate in e-commerce activities based on the proposed logistics model.

The study [13] argues that recent transformations in production and consumption have created a broad market for logistics. The author's results prove the relevance of configurationally approaches for the study of logistics space, as well as reveal the possibilities and limits of this methodology.

The aim of the article [6] is to analyze the information and communication technologies used by logistics service providers. The article examines the current state in terms of outsourcing logistics activities and analyzes a set of logistics services according to several criteria that apply in Morocco and those working abroad.

Researchers in their study [3] argue that integrated management of all activities related to material flows, goods or services from sources of supply to consumers of finished products, reduces overall costs, which leads to better economic results. The authors investigated the efficiency of logistics processes based on unit costs.

The article [10] considers the ways to build an effective organizational and economic mechanism for managing the logistics activities of machine-building enterprises. Scientists have described and systematized some elements of logistics. The authors have developed an algorithm for constructing an organizational and economic mechanism for providing a logistics system, taking into account the specifics of the machine-building complex.

The purpose of the research [4] is to conduct a comprehensive study of network structures of humanitarian organizations and analysis of the impact on logistics activities. The authors identify four network components and describe their relationships. Scientists have proven that the dimensions of formalization, centralization and standardization in humanitarian organizational networks affect logistics activities.

The article [19] is based on the development of a conceptual framework and study of the impact of environmentally friendly measures to improve the sustainability of the logistics industry. The conceptual framework developed by the authors is the basis for further research examining the relationship between environmental assess your business potential.

The researchers [22] assess the impact of organizational commitment on staff turnover among employees of logistics organizations of food supply chain companies. The authors argue that their research has filled in the gaps and highlighted the importance of employees' overall organizational commitment to logistics, emphasizing emotional commitment. Scientists have proven that the emotional connection with the organization is especially important for retaining employees in the organization.

The purpose of the article [11] is to study the problems of strategic development of customs and logistics activities. Scientists have substantiated that the achievement of strategic goals for the development of customs and logistics systems is very much associated with a significant number of risks. The authors analyze the risks in customs logistics, establish the preconditions for their occurrence and outline their possible consequences.

3. Results

The relevance of developing conceptual frameworks for managing the quality assurance of logistics activities in the context of socio-economic interaction of their participants is that:

- modern global challenges require market participants to find new solutions to increase competitiveness;
- logistics tools are becoming more widespread in the practice of the world economy, which can be traced at the level of transnational corporations;
- there are new sources of cooperation, interregional and international relations;
- there is a constant trend of increasing costs for transportation of resources and finished products;
- due to fundamental, creative changes in the philosophy of quality inventory management;
- is justified by the constant reduction of the life cycle of finished products;
- there is a need for maximum focus on consumer needs and the creation of product lines as a result of the marketing concept;
- there is a tendency to increase the cost of developing new products and reduce the time of development and commissioning;
- the influence of information technologies increases, which provide fast processing of large arrays of information and exchange of information data with reduction of costs and time for these processes;
- increasing the coordination of inventory management, which reduces the costs of all participants in the reproduction process;
- dissemination of the concept of management of quality assurance processes of logistics activities, etc.

These and other reasons necessitate the management of quality assurance processes in logistics in the context of socio-economic interaction of their participants. The fundamental difference between the logistics approach in management from traditional approaches is the allocation of a single management function of previously separated, disparate material flows, as well as economic, technological, information integration of chain links into a single system capable of effective management of these flows.

The principles of management of quality assurance processes of logistics activities are applied in relation to (Fig. 1):

- production infrastructure of the economy, which is based on the interaction of market demand, supply and organization of sales of finished products;
- the concept of enterprise management to increase its competitiveness through the planning of various flows;
- management of material and social flows;
- in the complex development of issues related to the rationalization of production organization and distribution of resources and finished products;
- increasing the efficiency of movement of finished products from the place of its production to the place of consumption, etc.

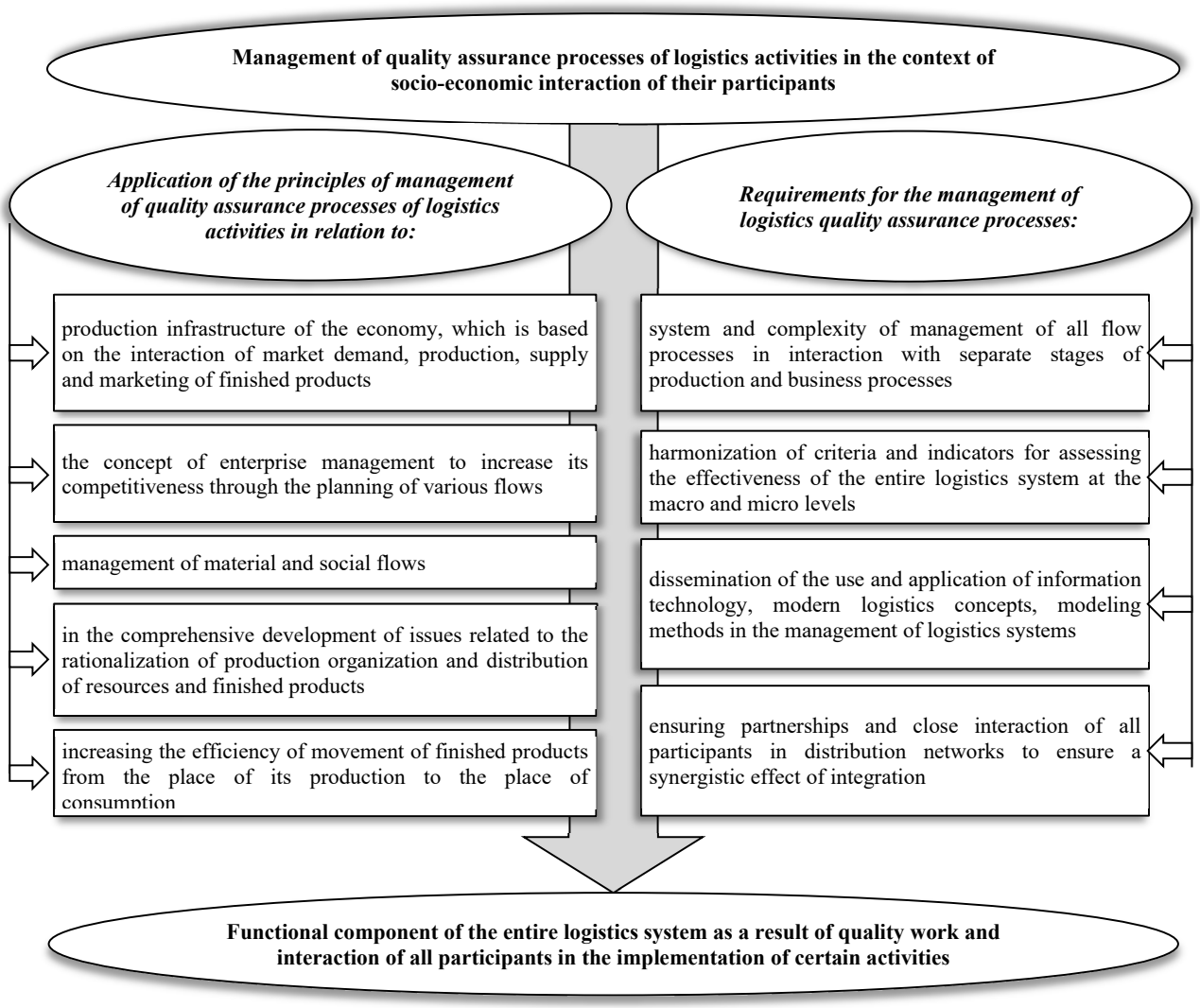

Fig. 1 Principles and requirements of management of quality assurance processes of logistics activities in the context of socio-economic interaction of their participants gislation.

Source: developed by the authors.

It is the management of logistics quality assurance processes that allows economic entities at different levels to form a strategy of effective policy to ensure competitive advantage and streamline social processes through a focus on a specific consumer rather than a specific market segment.

Management of logistics quality assurance processes is based on a systems approach, theories of total costs and the theory of trade-offs for cost redistribution. Provides compliance with such principles as sustainability and adaptability, humanization of all functions and technological solutions in logistics systems, compliance with the principles of TQM (total quality management). And also provides such direction as global optimization, logistic coordination and internationalization, development of logistic service, etc.

Logistics is designed to optimize the management of end-to-end material flows through the creation of logistics systems. It is appropriate to start the creation of logistics systems in enterprises from the sphere of supply, this is due to the fact that this is where the chain of entry of material flow into the enterprise and the logistics system begins. Management of quality assurance processes of logistics activities is extremely important because it directly affects the formation of profits and losses of the enterprise, as well as its viability and competitiveness.

Logistics management as a subsystem of management in general, which aims to achieve strategic and tactical goals of the enterprise. Strategic goals are achieved through the logistics management of investment and innovation, financial, production, human resources. Achieving tactical goals at the enterprise is ensured by flow processes through logistics chains in the form of purchasing resources and receiving them at the entrance, their transportation, direct production, warehousing, sale of finished products, after-sales service.

In turn, the functioning of the enterprise as a logistics system can be represented in the form of a triad of logistics components (Fig. 2), namely:

- firstly, supply logistics, namely integrated planning, logistics management and physical processing of the flow of raw materials, taking into account the support of the information flow, which provides an accurate idea of the movement of materials from the supplier to the initial production warehousing;
- secondly, the logistics of production, which is directly related to process management from the beginning of the production cycle to the transfer of finished products to sales;
- thirdly, sales logistics involves managing the movement of finished products to the consumer.

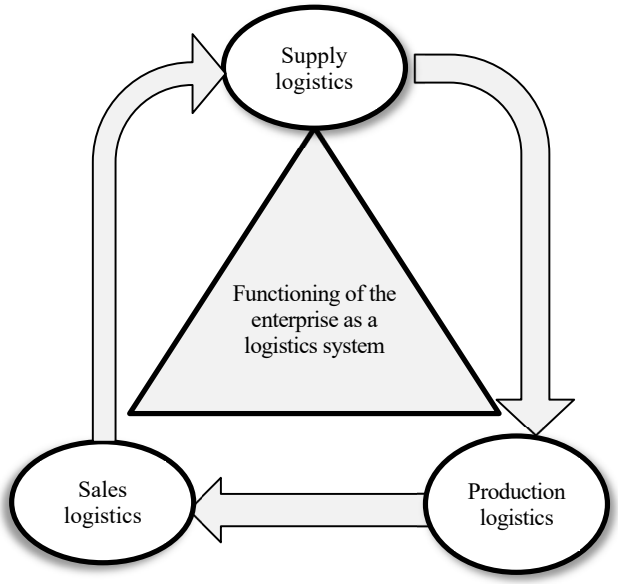

Fig. 2 Triad of logistics components of the enterprise as a logistics system
Source: developed by the authors.

As is well-known, the concept of TQM is a philosophy of doing business, including production, which is expressed through the principles, methods, tools, directions and forms of quality management to increase the competitiveness of the enterprise and has an interdisciplinary nature. The concept of TQM is recommended as a paradigm for improving the quality of all spheres of social activity and can be a guideline for economic activity of any economic entity.

In general, the concept of "quality" is a complex interdisciplinary concept that describes the effectiveness of all parts of the subject. Management of quality assurance processes of logistics activities in the context of socio-economic interaction of their participants is a functional component of the entire logistics system as a result of quality work and interaction of all participants in the implementation of certain activities.

Management of logistics quality assurance processes in the context of socio-economic interaction of their participants based on the concept of TQM based on a systematic approach involves determining logistics costs throughout the logistics chain, sociologization and humanization of technological processes, including the creation of modern working conditions, development of logistics and logistics services, adaptation and adaptation of the logistics system to turbulent conditions of the environment.

Management of quality assurance processes of logistics activities at the enterprise involves a combination

of a single inseparable system of information flows with the process of strategic and tactical planning of logistics activities. This combination makes it possible to increase the efficiency of responding to endogenous changes in the changing environment through rapid action in accordance with the changes to ensure the stability of the enterprise and its competitiveness. The quality of logistics activities will affect the level of economic potential, rationalization and optimization of all logistics flows.

Management of quality assurance processes in logistics in the context of socio-economic interaction of their participants involves a set of consistent actions and measures to optimize economic activity and results of appropriate quality using a system of methods, techniques and taking into account the peculiarities of logistics processes.

To ensure the quality of logistics activities in the context of socio-economic interaction of their participants, it is important to constantly monitor the movement of all logistics flows through the use of innovative technologies.

Management of quality assurance processes of logistics activities in the context of socio-economic interaction of their participants involves, according to the authors, the following main areas:

firstly, the introduction of a quality system of logistics processes;

secondly, development and implementation of the general strategy of improvement of quality at the enterprise;

thirdly, integration of internal (ensuring the development and observance of the relevant quality system, including through harmonization of employees of different functional units) and external (coordination of activities in the context of socio-economic relations in logistics chains between partners) quality improvement system;

fourthly, controlling.

Management of quality assurance processes of logistics activities in the context of socio-economic interaction of its participants requires compliance with the following requirements:

- systematic and comprehensive management of all flow processes in cooperation with the individual stages of production and business processes in order to optimize the entire logistics system;

- coordination of criteria and indicators for assessing the effectiveness of the entire logistics system at the macro and micro levels, as well as its individual logistics units to assess the quality of logistics activities;

- dissemination of the use and application of information technology, the use of software, automated control systems, modern logistics concepts, modeling methods in the management of logistics systems;

- ensuring partnerships and close cooperation of all participants in sales networks to ensure a synergistic effect of the integration of such efforts, which will contribute to achieving the goals of all participants through a balanced distribution of all powers, responsibilities and risks of logistics.

Management of quality assurance processes of logistics activities in the context of socio-economic interaction of its participants requires updating the work of quality services at partner companies involved in logistics processes (Fig. 3). Such an update should be aimed at:

- clarity and rhythm of the organizational structure of the quality service at the enterprise;

- purposefulness in solving the tasks and focus on optimizing resources and time in making logistics decisions;

- coordination of interaction of all participants of logistic activity for a possibility of receiving synergetic effect concerning functioning of all system;

- increasing the competencies of specialists by providing them with training and advanced training;

- financial security due to sufficient resources to ensure logistics processes and motivate employees;

- active policy on socio-economic interaction of participants in logistics activities requires joint cooperation and creativity in management approaches.

Renewal of the work of quality services at enterprises partnering in logistics processes will contribute to the establishment of interfunctional team fruitful work of quality services and socio-economic interaction of all participants in logistics activities. This interaction will help to combine skills, knowledge and innovations that will improve the quality of management decisions and logistics in general.

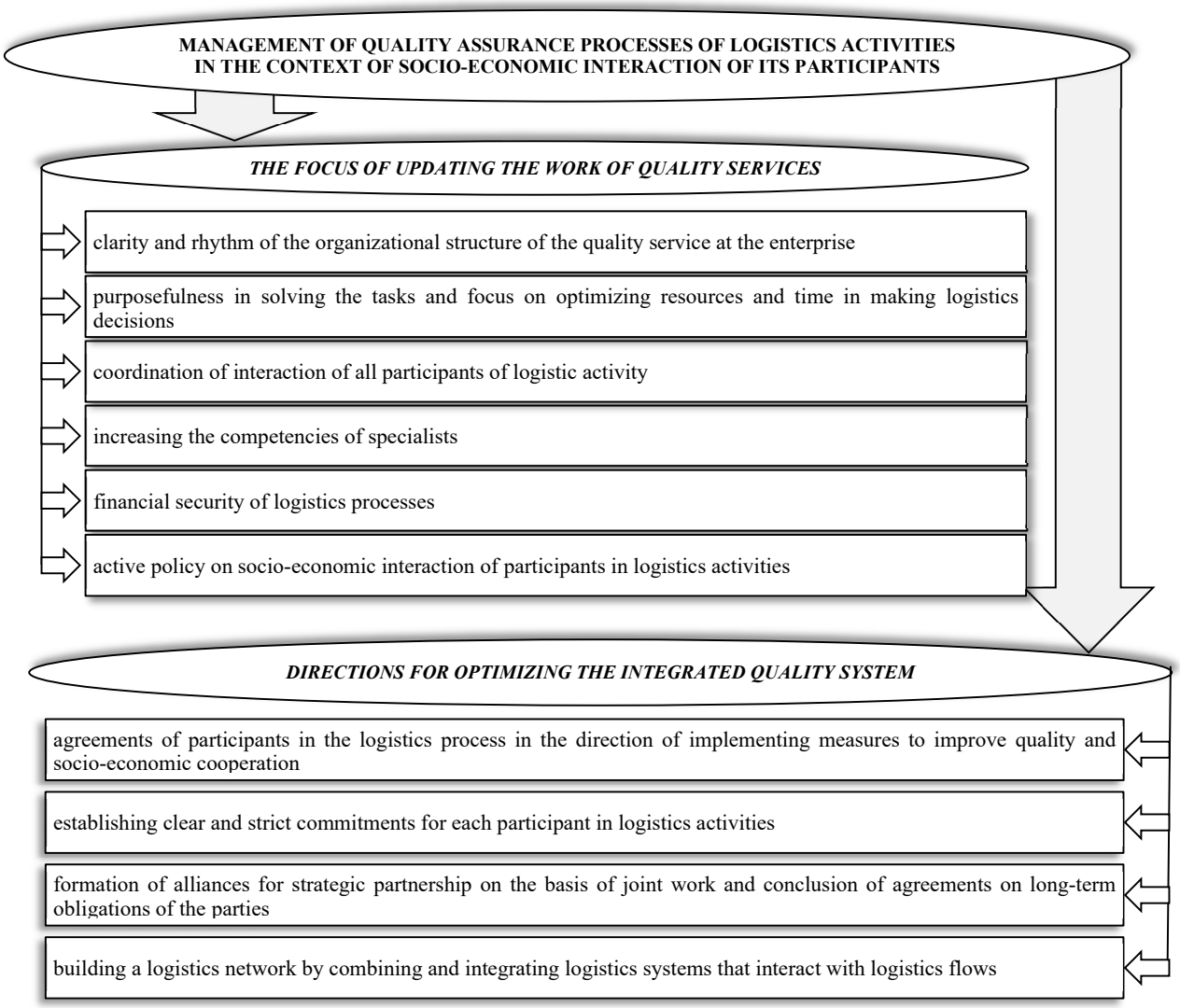

Fig. 3 Measures to optimize and direct the update of the quality service Source: developed by the authors.

Source: developed by the authors.

Management of quality assurance processes of logistics activities in the context of socio-economic interaction of its participants is impossible without optimizing the work of the integrated quality system in such areas as:

- firstly, the agreements of the participants of the logistics process in the direction of implementing measures to improve quality and socio-economic cooperation;

- secondly, the establishment of clear and strict obligations for each participant in logistics activities, regardless of their organizational and legal forms and the status of a participant in logistics chains;

- thirdly, the formation of alliances for strategic partnership based on joint work and the conclusion of agreements on long-term commitments of the parties, which are based on the fact that further work will provide benefits for all participants in logistics activities based on socio-economic cooperation. The creation of such unions will promote the intensification of investment processes and improve the quality of logistics activities;

- fourthly, building a logistics network by combining and integrating logistics systems that interact with each other through logistics flows. Construction of such logistics networks provides investment, information, financial unity, which is provided by the organizational

and legal structure of the logistics network. Also, contributes to the optimization of intensive economic flows by creating favorable conditions for streamlining the use of resources and expanding the resource, financial, investment base of the logistics network

4. Conclusions

Thus, modern globalization challenges and trends in reducing the life cycle of products and production processes determine the speed of turnover of material and financial resources, reducing the number of participants in logistics chains and processes. In turn, such challenges place new demands on the participants of the logistics process, which lead to increased management of the quality assurance of logistics activities in the context of socio-economic interaction of its participants. Quality management of logistics activities must be based on a balanced, logical sequence of a set of synchronization actions on the basis of socio-economic interaction of its participants.

Management of quality assurance processes of logistics activities in the context of socio-economic interaction of their participants is a functional component of the entire logistics system as a result of quality work and interaction of all participants in the implementation of certain activities.

Management of quality assurance processes of logistics activities in the context of socio-economic interaction of its participants requires compliance with the following requirements:

- systematic and comprehensive management of all flow processes in cooperation with the individual stages of production and business processes in order to optimize the entire logistics system;
- coordination of criteria and indicators for assessing the effectiveness of the entire logistics system at the macro and micro levels, as well as its individual logistics units to assess the quality of logistics activities;
- dissemination of the use and application of information technology and modeling methods in the management of logistics systems.

Further scientific research in the direction of managing the quality assurance of logistics activities in the context of socio-economic interaction of its participants requires assessing the level of socio-economic interaction of participants in logistics processes and establishing close socio-economic cooperation with higher education institutions to improve the quality of logistics professionals.

References

[1] Derhaliuk, M., Popelo, O., Tulchynska, S., Mashnenkov, K., Berezovskyi, D. (2021). State policy of the potential-forming space transformation in the context of the regional development intensification. *CUESTIONES POLÍTICAS, 39*(70), 80-93. DOI: 10.46398/cuestpol.3970.04.

[2] Dergaliuk, M., Khanin, S., Popelo, O., Tulchynska, S., Pakhota, N. (2021). Intensification of the development of regional economic systems in the conditions of the creative economy formation. *Laplage em Revista (International), 7*(3), 80-88. DOI: https://doi.org/10.24115/S2446-62202021731259p.80-88.

[3] Dmuchowski, R. (2021). Methods of measuring the effectiveness of logistics activities. *Contemporary Economics, 15*(3), 309-320. DOI: 10.5709/ce.1897-9254.451.

[4] Hein, C., Lasch, R. (2021). Organisational network structures of humanitarian non-governmental organisations in relation to their logistics activities. *International Journal of Logistics Research and Applications*. DOI: 10.1080/13675567.2021.1942806.

[5] Khanin, S., Tulchynska, S., Popelo, O., Derhaliuk, M., Ishchejkin, T. (2021). Systematization of functional features of intellectual and innovative determinants of the intensification of the regional economic development. *Laplage em Revista (International), 7*(2), 710-720. https://doi.org/10.24115/S2446-62202021721118p.710-720.

[6] Khaoula, A., Jabir, A., Badr, B.M. (2021). Exploratory study of the role of logistics service providers in terms of traceability in the process of outsourcing of logistics' activities: Case of moroccan lsp. I*nternational Journal of Engineering Research in Africa, 54*, 187-208. DOI: 10.4028/www.scientific.net/JERA.54.187.

[7] Kholiavko, N., Popelo, O., Dubyna, M., Panchenko, O., Tarasenko, A., Kozlianchenko, O. (2021). Criteria for the description of the financial behavior model of households in the digitalization conditions. *Laplage em Revista (International), 7*(3B), 57-67. https://doi.org/10.24115/S2446-6220202173B1486p.57-67.

[8] Kholiavko, N., Popelo, O., Tulchynska, S. (2021). Priority Directions of Increasing the Adaptivity of Universities to the Conditions of the Digital Economy. *Revista Tempos E Espaços Em Educação, 14*(33), e16383. https://doi.org/10.20952/revtee.v14i33.16383.

[9] Kholiavko, N., Popelo, O., Bazhenkov, I., Shaposhnykova, I., Sheremet, O. (2021). Information and communication technologies as a tool of strategy for ensuring the higher education adaptation to the digital economy challenge. *IJCSNS International Journal of Computer Science and Network Security, 21*(8), 187-195. https://doi.org/10.22937/IJCSNS.2021.21.8.25.

[10] Kondratenko, N.O., Kolesnyk, T.M., Vovk, S.M., Zarichkova, M.V., Prunenko, D.O. (2021). Organizational and economic support of logistics activities of machine-building enterprises. *Estudios de Economia Aplicada, 39*(6). DOI: 10.25115/eea.v39i6.5160.

[11] Kozenkova, T.A., Abalakina, T.V., Suleymanov, Z.E., Bank, S.V., Sokolnikova, O.B. (2021). Customs and logistics activity in geopolitical and economic changes: Problems, strategies, and risks. *Studies in Systems, Decision and*

Control, 316, 1105-1115. DOI: 10.1007/978-3-030-57831-2_118.

[12] Liu, K., Zhang, B., Chen, H., Liu, B. (2021). Research on Farmers' Willingness to Participate in Rural E-commerce Activities and Influencing Factors Based on a Multivariate Logistic Model. *Proceedings 2nd International Conference on E-Commerce and Internet Technology, ECIT 2021* (pp. 206-212). DOI: 10.1109/ECIT52743.2021.00053.

[13] Maraschin, C., Machado, A.L.M., Damiani, R.M. (2021). Modelling Spatial Centrality of Logistics Activities: Study in the Porto Alegre Metropolitan Region, Brazil. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 12952*, 688-703. DOI: 10.1007/978-3-030-86973-1_48.

[14] Pane, S.F., Awangga, R.M., Siregar, M.A.H., Majesty, D. (2021). Mapping log data activity using heuristic miner algorithm in manufacture and logistics company. *Telkomnika* (*Telecommunication Computing Electronics and Control*), 19(3), 781-791. DOI: 10.12928/TELKOMNIKA.v19i3.18153.

[15] Popelo, O., Garafonova, O., Tulchynska, S., Derhaliuk, M., Berezovskyi, D. (2021). Functions of public management of the regional development in the conditions of digital transformation of economy. *Amazonia Investiga, 10*(43), 49-58. https://doi.org/10.34069/AI/2021.43.07.5.

[16] Popelo, O., Tulchynska, S., Sytnyk, H., Vysochyn, I, Khanin, S. (2021). Formation of imperatives of the creative economy creation under the influence of intellectual and innovative determinants. *Laplage em Revista (International), 7*(Extra B), 624-633. https://laplageemrevista.editorialaar.com/index.php/lpg1/article/view/1110/1013.

[17] Popelo, O.V. (2017). Methodological approaches to modernization processes of the productive forces in the conditions of Eurointegration. *Scientific Bulletin of Polissia, 1*(1(9)), 218-224.

[18] Rudnichenko, Y., Savina, H., Franchuk, V., Nestoryshen, I., Savin, S., Havlovska, N. (2021). Theoretical and Practical Aspects of Strategic Management of Balanced Interaction between Subjects of Foreign Economic Activity and State Institutions. *TEM Journal, 10*(2), 707-718.

[19] Sadeghian Esfahani, S., Cahoon, S., Chen, S.-L., Pateman, H., Sajadi, S.M. (2021). Prioritising environmental activities based on their effect on improving sustainable performance in Australian logistics. *Supply Chain Forum, 22*(3), 250-267. DOI: 10.1080/16258312.2021.1879601.

[20] Tulchynska, S., Shevchuk, N., Popelo, O., Pohrebniak, A., Kravchyk, Y. (2021). Operation of industrial parks in the conditions of sustainable development and the paradigm of circular economy. *Laplage in Journal, 7*(3C), 238-247. https://doi.org/10.24115/S2446-6220202173C1602p.238-247.

[21] Vovk, O., Tulchynska, S., Popelo, O., Tulchinskiy, R., & Tkachenko, T. (2021). Economic and Mathematical Modeling of the Integration Impact of Modernization on Increasing the Enterprise Competitiveness. *Management Theory and Studies for Rural Business and Infrastructure Development, 43*(3), 383-389. https://doi.org/10.15544/mts.2021.35.

[22] Živković, A., Franjković, J., Dujak, D. (2021). The role of organizational commitment in employee turnover in logistics activities of food supply chain. *Logforum, 17*(1), 25-36.