

Electronic scientific and practical publication in economic sciences

Electronic scientifically and practical journal “Intellectualization of logistics and Supply Chain Management” included in the list of scientific publications of Ukraine in the field of economic sciences (category "B"): **Order of the Ministry of Education and Culture of Ukraine dated October 10, 2022 No. 894 (Appendix 2)**

Field of science: Economic.

Specialties: 051 – Economics; 073 – Management

ISSN 2708-3195

DOI: <https://doi.org/10.46783/smart-scm/2024-26>

The electronic magazine is included in the international scientometric databases:
Index Copernicus, Google Scholar

Released 6 times a year

№ 26 (2024)

August 2024

Founder: Viold Limited Liability Company

Editor in Chief: Hryhorak M. Yu. – Doctor of Economics, Ass. Professor.

Deputy editors-in-chief: Koulyk V. A. – PhD (Economics), Professor.
Marchuk V. Ye. – Doctor of Tech. Sci., Ass. Professor.

Technical editor: Harmash O. M. – PhD (Economics), Ass. Professor.

Executive Secretary: Davidenko V. V. – PhD (Economics), Ass. Professor.

Members of the Editorial Board:

SWIEKATOWSKI Ryszard – Doctor of Economics, Professor (Poland);

POSTAN M. Ya. – Doctor of Economics, Professor;

TRUSHKINA N. V. – PhD (Economics), Corresponding Member of the Academy;

KOLOSOK V. M. – Doctor of Economics, Professor;

ILCHENKO N. B. – Doctor of Economics, Ass. Professor;

SOLOMON D. I. – Doctor of Economics, Professor (Moldova);

ALKEMA V. H. – Doctor of Economics, Professor;

Henryk DŹWIGOŁ – PhD (Economics), Professor (Poland);

SUMETS O. M. – Doctor of Economics, Ass. Professor;

STRELCOVÁ Stanislava – PhD (Economics), Ass. Professor, (Slovakia);

RISTVEJ Jozef (Mr.) PhD (Economics), Professor, (Slovakia);

ZAMIAR Zenon – Doctor of Economics, Professor, (Poland);

SMERICHEVSKA S. V. – Doctor of Economics, Professor;

GRITSENKO S. I. – Doctor of Economics, Professor;

KARPENKO O. O. – Doctor of Economics, Professor;

PATKOVSKYI S. A. – Business practitioner.

The electronic scientific and practical journal is registered in international scientometric data bases, repositories and search engines. The main characteristic of the edition is the index of scientometric data bases, which reflects the importance and effectiveness of scientific publications using indicators such as quotation index, h-index and factor impact (the number of quotations within two years after publishing).

In 2020, the International Center for Periodicals (ISSN International Center, Paris) included the Electronic Scientific and Practical Edition "Intellectualization of logistics and Supply Chain Management" in the international register of periodicals and provided it with a numerical code of international identification: ISSN 2708-3195 (Online).

Recommended for dissemination on the Internet by the Academic Council of the Department of Logistics NAU (No. 7 of February 26, 2020). Released 6 times a year. Editions references are required. The view of the editorial board does not always coincide with that of the authors.

Electronic scientifically and practical journal "Intellectualization of logistics and Supply Chain Management" included in the list of scientific publications of Ukraine in the field of economic sciences (category "B"): **Order of the Ministry of Education and Culture of Ukraine dated October 10, 2022 No. 894 (Appendix 2)**

Field of science: Economic.

Specialties: 051 – Economics; 073 – Management

t.me/smart_scm
facebook.com/Smart.SCM.org
twitter.com/ScmSmart

DOI: <https://doi.org/10.46783/smart-scm/2024-26>
e-mail: support@smart-scm.org

тел.: (063) 593-30-41
<https://smart-scm.org>

Contents

INTRODUCTION	6
POZNIAK O.V. PhD (Economics), Associate Professor, Associate Professor of Logistics Department, National Aviation University (Ukraine), KISERA T.O. Graduate student of Logistics Department, National Aviation University (Ukraine), SUVOROVA I.M. PhD (Economics), Associate Professor, Associate Professor of Logistics Department, National Aviation University (Ukraine), SHVETS A.V. Assistant of Logistics Department, National Aviation University (Ukraine), PODRIEZA M.S. Graduate student of the Department of Management foreign economic activity of enterprises National Aviation University (Ukraine)	
<i>PLANNING THE CUSTOMER SERVICE PROCESS OF A LOGISTICS COMPANY BASED ON IMPLEMENTING GREEN TECHNOLOGIES</i>	7 – 20
BUGAYKO D. O. Doctor of Science (Economics), Professor, Corresponding Member of the Academy of Economic Sciences of Ukraine and the Transport Academy of Ukraine, Vice - Director of ES International Cooperation and Education Institute, Instructor of ICAO Institute, Professor of the Logistics Department, National Aviation University (Ukraine), MIRZAYEV Fuad Murvat. PhD in Economics, Associate Professor, National Aviation Academy (Azerbaijan), GARIBLI Gulgun Mushviq MSc Student, National Aviation Academy (Azerbaijan), EYNULLAZADEH Kazim Mais MSc Student, National Aviation Academy (Azerbaijan)	
<i>TRANSPORT SYSTEM OF AZERBAIJAN: WHAT'S HAPPENING NOW AND WHAT'S NEXT?</i>	21 – 43
GURINA G.S. Doctor of economic sciences, professor, department of management of foreign economic activity of enterprises National Aviation University (Ukraine), PODRIEZA S.M. Doctor of economic sciences, professor, department of management of foreign economic activity of enterprises National Aviation University (Ukraine)	
INNOVATIVE INFORMATION PROCESSES IN THE AVIATION INDUSTRY	44 – 50
REZNIK N.P. Doctor of Economics, Professor, Professor of the Department of Management named after Professor Yosyp S. Zavadsky, National university of life and environmental science of Ukraine (Ukraine)	
PECULIARITIES AND WAYS OF RESOLVING THE MILITARY-POLITICAL CONFLICT	51 – 63



REZNIK N.P. Doctor of Economics, Professor, Professor of the Department of Management named after Professor Yosyp S. Zavadsky, National university of life and environmental science of Ukraine Kyiv (Ukraine)	
<i>INNOVATIVE TECHNOLOGIES IN THE LOGISTICS SYSTEM</i>	64 –74
ZAHORODNIA A.S. PhD (Management), Associate Professor of the Department of International Relations and Political Consulting, Institute of Law and Public Relations, Open International University of Human Development «Ukraine» (Ukraine), FEDORENKO T.V. PhD (Law), associate professor, associate professor of the Department of industry law and general legal disciplines, Institute of Law and Public Relations, Open International University of Human Development «Ukraine» (Ukraine)	
<i>ECONOMIC SECURITY OF THE ENTERPRISE: MODERN CHALLENGES AND THREATS</i>	75 –79
HONCHAROVA I.M. PhD student of Izmail State University of Humanities (Ukraine)	
<i>STUDY OF THE DYNAMICS OF THE MAIN INDICATORS OF THE ACTIVITY OF TRANSPORT ENTERPRISES IN THE CONDITIONS OF THE INTRODUCTION OF INNOVATION</i>	80 –89
HRYHORAK M.Yu. Doctor of Sciences (Economics), Associate Professor, Professor of Department of Management of Enterprises National Technical University of Ukraine 'Igor Sikorsky Kyiv Polytechnic Institute' (Ukraine), PICHUGINA M.A. PhD in Economics, Associate Professor, Associate Professor of Department of Management of Enterprises National Technical University of Ukraine 'Igor Sikorsky Kyiv Polytechnic Institute' (Ukraine)	
<i>ADAPTATION OF LOGISTICS MANAGERS' COMPETENCY MODELS TO INDUSTRY 5.0 CHALLENGES</i>	90 –112
SMERICHEVSKA S.V. Doctor of Science in Economics, Full Professor, Head of Logistics Department National Aviation University (Ukraine), PRODANOVA L.V. Doctor of Science in Economics, Full Professor, Professor of the Department of Management and Business Administration, Cherkasy State Technological University (Ukraine), YAKUSHEV O.V. Candidate of Economic Sciences, Associate Professor, Doctoral Student, Associate Professor of the Department of Social Welfare, Cherkasy State Technological University (Ukraine)	
<i>DIGITIZATION OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT</i>	113 –123

UDC 338.2:656.1

DOI: <https://doi.org/10.46783/smart-scm/2024-26-7>

JEL Classification: O18,O31,R42.

Received: 2 August 2024

Honcharova I.M. PhD student of Izmail State University of Humanities (Ukraine)

ORCID – 0000-0003-2607-6698

Researcher ID –

Scopus author id: – 592613689000

E-Mail: _cehovich2610@gmail.com

STUDY OF THE DYNAMICS OF THE MAIN INDICATORS OF THE ACTIVITY OF TRANSPORT ENTERPRISES IN THE CONDITIONS OF THE INTRODUCTION OF INNOVATION

Iryna Honcharova. "Study of the dynamics of the main indicators of the activity of transport enterprises in the conditions of the introduction of innovation". In the context of logistics integration, it is important to conduct analytical activities to study the effectiveness of marketing innovations in a timely manner. To form an idea of the effectiveness of marketing activities, it is necessary to study the influence of various factors on the performance indicator, in the case of logistics, this may be the volume of transported goods. The motive for writing the article was to study the capabilities of standard software for analyzing the effectiveness of economic processes in general, and in particular the results of innovative activities. The purpose of the article is to analyze the innovation, namely the integration of the logistics space in a certain region, for four companies in the Northern Black Sea region in order to assess the potential of these companies in the provision of transport services, taking into account the implemented innovation. The study used information provided by transport companies from 2013 to 2022. The choice of the focus of the study in the field of transport support is due to the importance of the quality of transport support for the functioning of the economy, especially in the context of cross-border movement of components and goods, raw materials and finished products. For the optimal study of the innovation efficiency, studies were conducted for two periods, namely from 2013 to 2019, and from 2013 to 2022. The analysis used the tools of mathematical analysis (function derivatives) for polynomial trend equations. It was found that for all four companies that participated in the implementation of the innovation, namely in the formation of an integrated logistics space with the creation of a common rolling stock base and the search for algorithms for the most optimal use of vehicles for cargo transportation, there is a positive dynamics of the total volume of cargo transportation, which indicates the effectiveness of the innovation. The introduction of innovations in logistics is the main condition for increasing the level of transport provision of the economy, which provides opportunities for a more systematic and comprehensive development of the economy. The integration of the logistics space on the example of four companies in the Black Sea region allowed not only to improve the quality of transport services, but also to increase the total profit of the group of companies, which indicates the effectiveness of marketing innovations. The results of the study can be used to replicate the innovation to other transport enterprises both within the region and for other regions. The proposed methodology for analyzing the effectiveness of innovations can be extended to other innovations in various sectors of the economy.

Keywords: integration, logistics space, transportation, innovation, analysis of innovation, trends

Ірина Гончарова. «Вивчення динаміки основних показників діяльності транспортних підприємств в умовах впровадження інновації». В умовах інтеграції логістики важливо вчасно проводити аналітичні заходи для вивчення ефективності маркетингових інновацій. Для формування уявлення про ефективність маркетингових заходів необхідно вивчити ефект впливу різних факторів на результативний показник, у випадку логістики це може бути обсяг перевезених

вантажів. Метою статті є проведення аналізу інновації, а саме інтеграції логістичного простору в певному регіоні, для чотирьох компаній Північного Причорномор'я, надання оцінки потенційним можливостям цих компаній у сфері надання транспортних послуг з урахуванням реалізованої інновації. Дослідження проводилося з використанням інформації, наданої транспортними компаніями за період з 2013 по 2022 рік. Для аналізу використовувалися інструменти математичного аналізу (похідні функцій) для поліноміальних рівнянь тренду. Встановлено, що для всіх чотирьох фірм, які брали участь у впровадженні інновації, а саме у формуванні інтегрованого логістичного простору з формуванням загальної бази рухомого складу та з формуванням найбільш оптимального використання транспортних засобів для перевезення поза вантажоперевезеннями спостерігається позитивна динаміка загального обсягу вантажоперевезень, що свідчить про ефективність впровадження інновацій. Впровадження інновацій у логістику є основною умовою підвищення рівня транспортного забезпечення економіки. Інтеграція логістичного простору на прикладі чотирьох компаній Чорноморського регіону дозволила не тільки підвищити якість надання транспортних послуг, але й збільшити загальний прибуток групи компаній, що свідчить про ефективність маркетингу інновації. Результати дослідження можуть бути використані як для тиражування інновації на інші транспортні підприємства як в межах регіону, так й для інших регіонів. Запропонована методологія аналізу ефективності інновації може бути поширена на інші інновації у різноманітних галузях економіки.

Ключові слова: інтеграція, логістичний простір, транспортне забезпечення, інновація, аналіз інновації, тренд.

Introduction. In economics, the static state of processes, production lines, and the static level of professional skills of teams leads to unfavorable consequences, since the lack of growth and development immediately affects competitiveness. Innovation processes must accompany all economic processes and not only the content since innovation provides the basis for comprehensive development and acts as a vaccine against crisis phenomena.

Increasing the efficiency of primary and secondary indicators of various economic activities underlies the motivation for innovative marketing. Transport in modern conditions requires constant innovation since most vehicles are used with insufficient efficiency. Since the formation of transportation tariffs initially includes the full cost of cargo transportation, if the vehicle is not fully loaded, the cost of a specific service increases (Honcharova & Metil, 2022). In addition, with a large number of vehicles, each of which is used inefficiently, the potential level of air pollution is higher than if transport is used efficiently. To solve these problems, logistics integration is necessary, which is driven by globalization processes (Karlsson, et al., 2009). Globalization occurs in

all areas, however, the integration of logistics is the basis and catalyst of globalization processes. One of the problems in the formation of an integrated logistics space is the difference in the degree of perception of innovation of specific objects that participate in integration processes. Eliminating the imbalance in the degree of perception of innovative actions is necessary for equal participation in the integration processes of its participants. At the level of specific transport enterprises, integration processes in logistics are innovative in nature and require high-quality marketing.

Taking into account the development of digital technologies, it is necessary to take into account the possibilities of prompt and effective control over the process of introducing innovations. Timely analysis of the effectiveness of innovative marketing is important for making management decisions (Pascalau, 2017). There are a variety of evaluation methods used in performance analysis, but for the sake of clarity, this article will focus on the functions that are standard in Microsoft Excel. Considering the marketing of innovations as the basis for improving the economy, they often draw up a plan for marketing activities. Partial analysis of the

implementation of the marketing plan is carried out qualitatively, partly quantitatively. These methods are not interchangeable, they complement each other (Nagaraj, 2021).

The presented research provides answers to the following questions:

- How does the profit trend change when studying selected companies for the periods from 2013 to 2019 and for the period from 2013 to 2022?

- What function determines the growth rate of the profit trend?

- Does innovation in the form of digitalization of cargo transportation affect the profit trend of selected transport companies?

The study examined the profit data of four transport companies operating in the lower Danube region over the past 15-17 years. The time period 2013-2022 was chosen for the study because data for 2023 was not yet available at the time of the study.

Analysis of recent publications on the problem. Research in the field of improving transport provision is very diverse and diverse. Timely delivery of goods, quality of conditions of transportation, storage, loading and unloading, conditions of cargo insurance, factors of responsibility for delivery times, and condition of goods - this is just a small list of issues that are dealt with by various researchers. All of the above and many other issues in the field of delivery of goods often lead researchers to conclusions about the need to develop and implement innovations (Stefan, 2021).

. Innovation does not arise by itself; it is a planned process, which is the result of analytical activities to find problem areas in the functioning of certain processes.

Since to obtain the maximum economic effect at the lowest possible cost, the quality of transport services is of great importance, the study of modern trends in logistics is becoming increasingly important and attracts the attention of many researchers. Integration in logistics is an opportunity to take the industry to a qualitatively new level. Integration processes in the field of logistics

allow us to consider from a new perspective such fundamentals of market relations as healthy competition and government intervention (Pfohl, 2022). If we consider the fact of competition, then under conditions of integration, competitive advantages may change their composition, for example, in conditions of the desire to limit the carbon footprint, an environmental factor will be added to the usual components of competition. State intervention in the context of integration can be demonstrated by tutoring in the organization of supply chains, stimulation of mutually beneficial cooperation, and the creation of business incubators for the formation of integration logistics relationships (Kunert, 2018).

Modern specialized literature examines various ways to analyze the effectiveness of innovation in general and in particular the innovation marketing system (Aram, et al., 2019). The authors describe the processes associated with conducting analytical activities in different ways, but upon detailed study, it should be noted that analytical activities differ in structure, but have common methodological foundations (Fragerberg, et al., 2006). In particular, most authors view qualitative analysis as the basis for determining quantitative analytical activities (Honcharova, et al., 2023).

When studying innovations in transport in quantitative terms, the main ones are the cost volumes of services provided for the transportation of goods (in ton-kilometers), the percentage of vehicle load, and company profit. However, it is very rare to find conditions for considering such quantitative indicators as the amount of harmful emissions from transport into the atmosphere, the efficiency of using labor resources, and assessing the quality and timeliness of cargo delivery from consumers (Pfohl, 2022).

Carrying out innovative methods in transport in the context of logistics integration is aimed at improving the quality of transport services provided. To obtain analytical information on the effectiveness of innovation marketing, criteria and

performance indicators are needed, which will be considered when making further management decisions (Brem, et al., 2019).

Allocation of previously unsolved parts of the general problem. Innovation certainly has an impact on the bottom line of the companies in which it is implemented. The formulation of the results of innovation activity has been studied and considered in various studies and the results of analysis of the work of specific enterprises after a number of events. To assess the potential positive impact of innovation on the final result of transport companies, an accessible and convenient assessment tool is needed that can assess the potential benefits of innovation, regardless of the amount of money spent on introducing innovation. Since innovative activity in the field of transport management is associated with a number of problems, most of which are related to the provision of transport services across the territories of different states, a mechanism for potential assessment of the effectiveness of innovation is necessary not only as an economic tool but also to preserve the image component in working with foreign partners.

Formulation of research objectives (problem statement). The main goal of this study was to show the need for a preliminary analysis of planned innovations. The research involved solving several problems. The first goal was to obtain a tool for assessing the impact of innovations, accessible through standard software products. The second task was to analyze a specific innovation, namely the innovation of creating an integrated logistics space in the Lower Danube region. The third objective of the study was to establish the consequences of the innovation for the four transport companies involved in the innovation.

Materials and Methods. To determine the interdependence of factors that describe the effectiveness of innovative activities carried out during the marketing of innovations in the context of logistics integration, we will consider the possibilities

of using standard Microsoft Excel tools to obtain analytical information (Machado & Davim, 2022).

To determine the degree of relationship between the cost volume and the percentage of transport load, between the percentage of transport load and the company's profit, and between the cost volume and the company's profit for the period chosen for the study, we will use the correlation coefficient (Trachenko, et al., 2021). Since the correlation coefficient shows the degree of relationship between the indicators (strong for a value close to one, weak for a value of about 0.5, and no relationship for a value close to zero), and the nature of the relationship (direct for a positive value and inverse for a negative value).

By studying the correlation between various quantities, you can select pairs with the strongest dependence. Selecting such pairs for further research allows us to obtain information about the effectiveness of innovation marketing by comparing the trend line of a certain indicator for the base period of the study with the trend line for the entire period, starting from the stage before the innovation is introduced, ending with the period in which the consequences after the innovation are introduced (Stefan, 2021). By comparing trend lines of the same format using differential calculus methods, we obtain information about the nature of the trend in the pre-innovation period and the full period under study.

An outline of the main results and their justification. Description of the research object. As an example, consider the work of four transport companies: Bessarabia-trans, Diamant, Euro-Moving, and ITL. All selected companies operate in the lower Danube region in the freight transport sector. Companies are united by common innovation. The essence of the innovation is to create a common logistics system and customer service. This innovation has been in operation since 2020. As part of the study, we will analyze the effectiveness of marketing innovation in the conditions of integration of the logistics space.

As an object of study, we will consider four companies that are engaged in the delivery of small and medium-sized industrial cargo in one area. Companies have vehicles similar in composition, but different in number. Before the introduction of innovation, all companies did not have electronic communication services with clients.

The essence of innovation. Marketing the innovation consisted of building an algorithm for creating a unified customer support service. The main obstacle to the implementation of this innovation was the fear of a decrease in the flow of customers in some companies due to an increase in others, however, complete transparency in the formation of routes based on customer orders allowed the owners of all four companies to be convinced of the high potential of this innovation, the implementation of which began in 2020. The innovation

implementation technology is as follows. A logistics center was opened based on the Bessarabia-trans company, the work of which is financed by all participating companies in the amount of 0.05% of the cost of the order received through this center, which is an example of the integration of the logistics space. Work with clients is carried out by center specialists. The formation of orders and information on settlement transactions with clients is available in real-time for all participants in the integration project.

Determination of a pair of the most significant indicators. Let's consider the correlation between such indicators as the value of cargo delivered, the percentage of vehicle load, and company profits for the period from 2013 to 2022. Table 1 presents the results of calculating the correlation coefficient for pairs of indicators for each company separately.

Table 1 – Results of the study of correlation between pairs of indicators

Companies/indicator pairs	Cargo delivered - percentage of vehicle load	Percentage of vehicle load - company profits	Cargo delivered – company profits
Bessarabia-trans	0.923041	0.949211	0.91698
Diamant	0.900326	0.927397	0.849807
Euro-Moving	0.807751	0.942454	0.853865
ITL	0.929461	0.93144	0.869445

Source: compiled by the author based on data provided by companies

As can be seen from Table 1, the selected indicators have a strong direct relationship, which is characterized by the resulting correlation coefficients ranging from 0.8 to 0.95. Consequently, the selected indicators can be used to conduct a trade analysis to obtain information about the effectiveness of the innovation being introduced, which will be carried out for each company separately.

Research of vehicle load percentage.

Let us show an example of a study using the example of the Bessarabia-trans company. Figures 1 and 2 show the results of constructing trends for the percentage of vehicle load in a given company for the periods from 2013 to 2019 and for the period from 2013 to 2022, respectively.

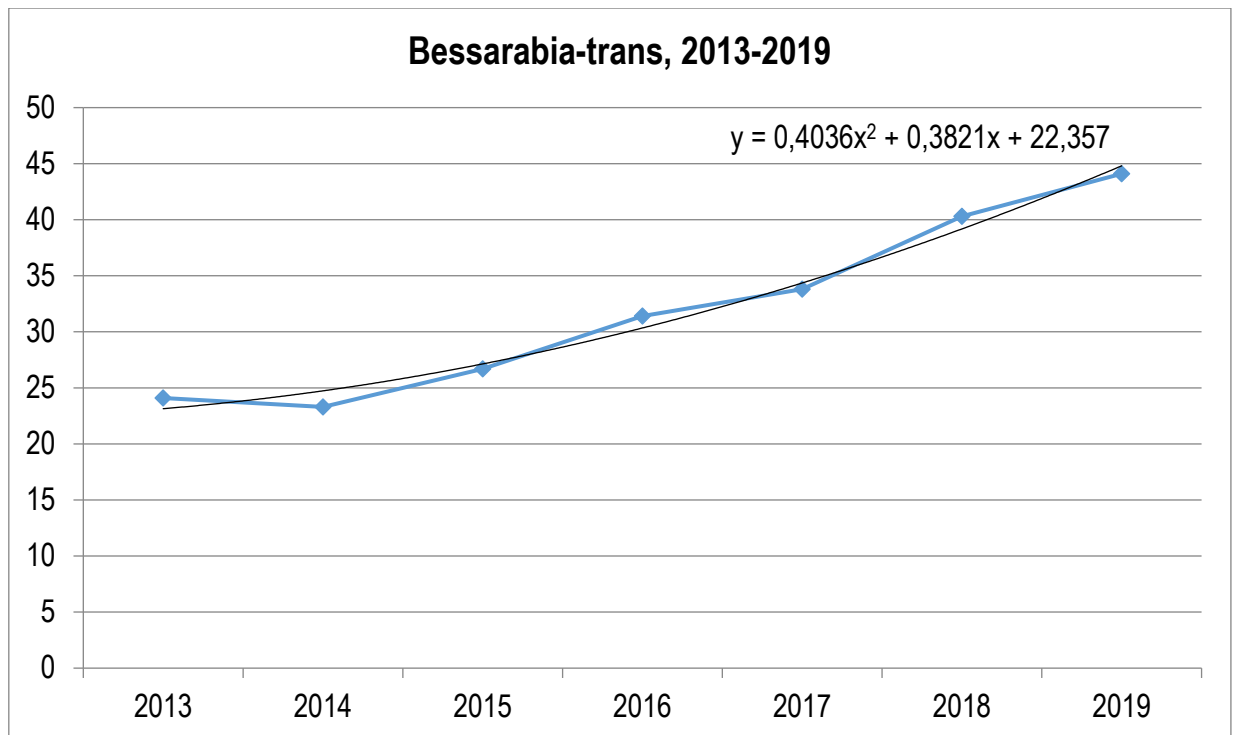


Figure 1 – Percentage of vehicle load, 2013-2019
Source: compiled by the author based on data provided by Bessarabia-trans

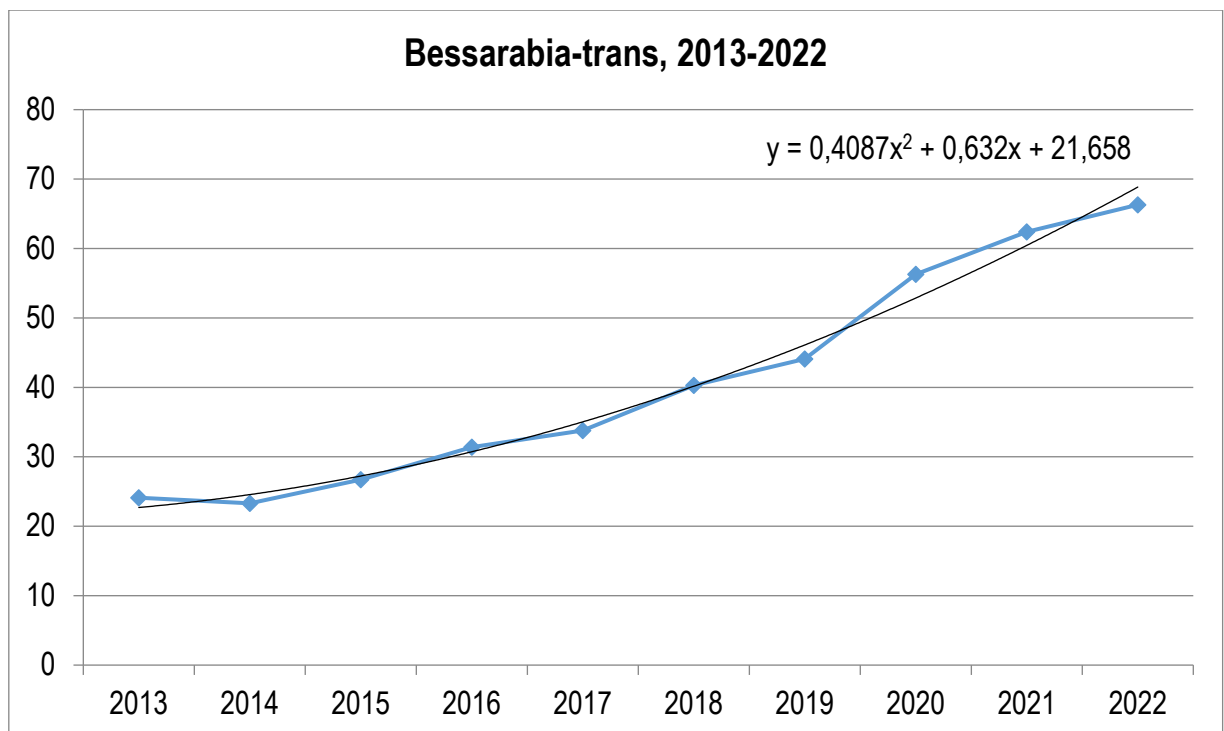


Figure 2 – Percentage of vehicle load, 2013-2022
Source: compiled by the author based on data provided by Bessarabia-trans

Using Microsoft Excel tools, the following trend lines were obtained: (1) for period 2013-2019, and (2) for period 2013-2022.

$$y_1 = 0.4036x^2 + 0.3821x + 22.357 \quad (1)$$

$$y_2 = 0.4087x^2 + 0.632x + 21.658 \quad (2)$$

To compare the nature of trends in changes in the percentage of vehicle loads before and after the start of the introduction of innovation in selected areas, we will find

the derivative of each of the obtained functions. After differentiation we obtain (3) and (4).

$$\frac{dy_1}{dx} = 0.8072x + 0.3821 \quad (3)$$

$$\frac{dy_2}{dx} = 0.8154x + 0.632 \quad (4)$$

Since the nature of changes in trends is described by increasing linear functions, it is possible to compare the rate of increase of the characteristic using the angular coefficients of these straight lines. Based on the results, we see that after the introduction of the innovation, the trend in the percentage of vehicle load in the Bessarabia-trans company increased.

Research of enterprise profits. When considering the profitability indicator of the Bessarabia-Trans company, using Microsoft Excel tools in a similar manner to previous actions, we obtain the results that are shown in Figure 3 for the period from 2013 to 2019 and in Figure 4 for the period from 2013 to 2022.

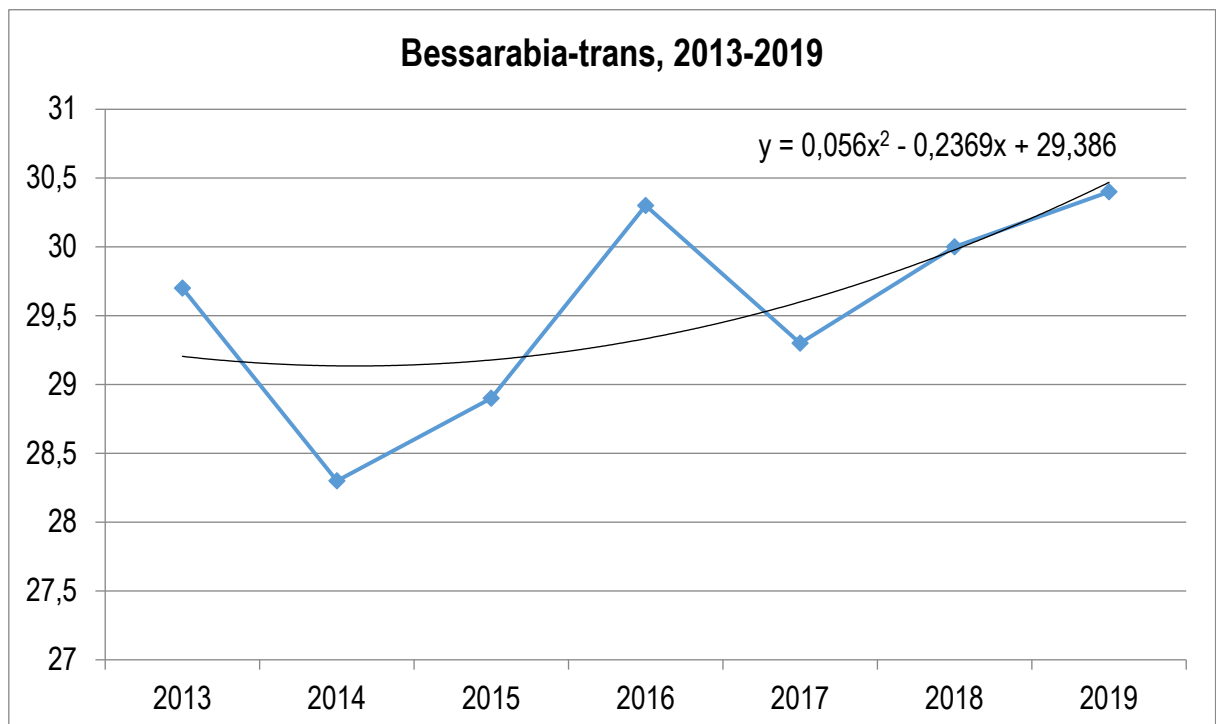


Figure 3 – Profit, 2013-2019

Source: compiled by the author based on data provided by Bessarabia-trans

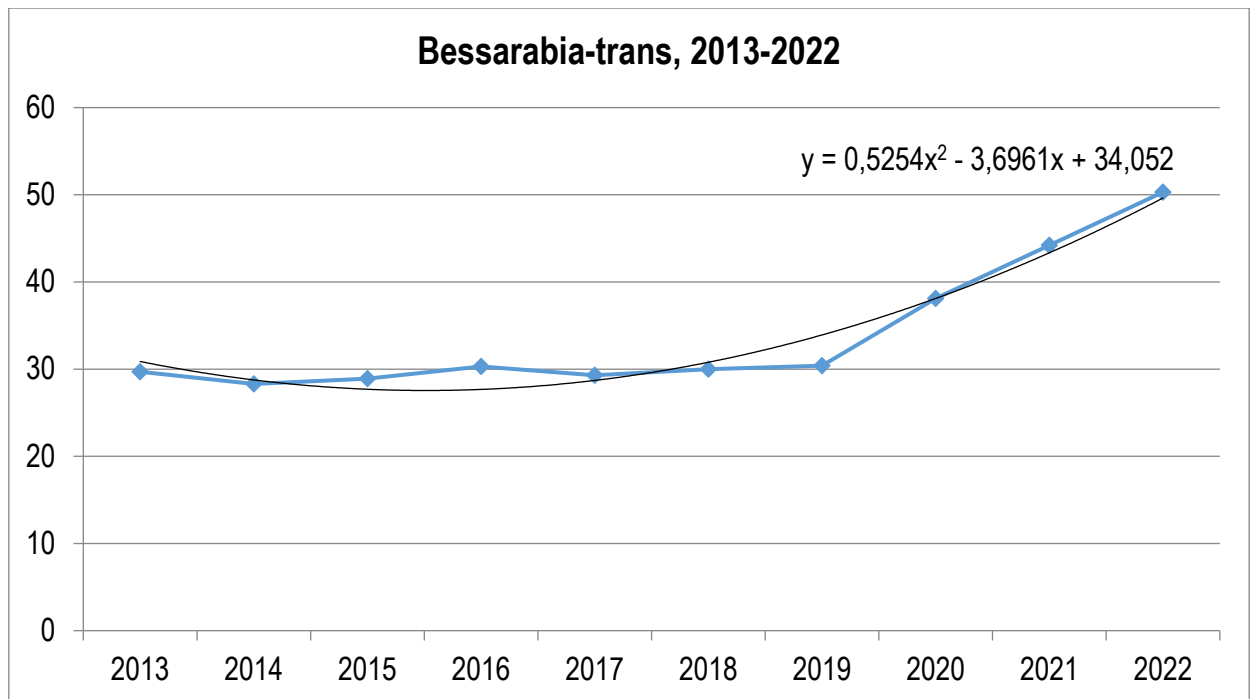


Figure 4 – Profit, 2013-2022
 Source: compiled by the author based on data provided by Bessarabia-trans

Let's look at the trend lines obtained using Microsoft Excel for enterprise profits for

the period 2013-2019 (5) and the period 2013-2022 (6).

$$y_3 = 0.056x^2 - 0.2369x + 29.386 \quad (5)$$

$$y_4 = 0.5254x^2 - 3.6961x + 34.052 \quad (6)$$

When differentiating the obtained functions that describe the trend in the profit of the Bessarabia-trans company, we obtain

the following increasing linear functions (7) and (8).

$$\frac{dy_3}{dx} = 0.112x - 0.2369 \quad (7)$$

$$\frac{dy_4}{dx} = 1.0508x - 3.6961 \quad (8)$$

Reasoning similarly, for the remaining companies we will obtain polynomial trends

and find their derivatives. The results of the study are recorded in Table 2.

Table 2 – Research results

Company	Indicator	Period	Polynomial trend	Derivate of trend
1	2	3	4	5
Diamant	. Percentage of vehicle load	2013-2019	$0.1345x^2 + 0.5845x + 65.414$	$0.269x + 1.169$
		2013-2022	$0.1784x^2 + 0.2793x + 65.805$	$0.3568x + 0.2793$
	Profit	2013-2019	$0.0476x^2 + 1.519x + 8.1$	$0.0952x + 1.519$
		2013-2022	$0.0549x^2 + 1.4522x + 8.2033$	$0.1098x + 1.4522$
Euro-Moving	. Percentage of vehicle load	2013-2019	$0.6048x^2 - 0.6667x + 35.771$	$1.2096x - 0.6667$
		2013-2022	$0.6264x^2 - 0.3866x + 34.868$	$1.2528x - 0.3866$
	Profit	2013-2019	$0.4226x^2 - 1.7131x + 20.429$	$0.8452x - 1.7131$
		2013-2022	$0.4534x^2 - 1.7499x + 20.248$	$0.9068x - 1.7499$
ITL	. Percentage of vehicle load	2013-2019	$0.0488x^2 + 4.156x + 53.814$	$0.0976x + 4.156$
		2013-2022	$0.1629x^2 + 5.7898x + 51.517$	$0.3258x + 5.7898$
	Profit	2013-2019	$-0.0345x^2 + 0.6726x + 4$	$-0.069x + 0.6726$
		2013-2022	$0.0197x^2 + 0.2524x + 4.5933$	$0.0394x + 0.2524$

Source: compiled by the author based on data provided by companies

If we analyze the results obtained in column (5) of the table and the results described in formulas (7) and (8), then a general upward trend in the obtained polynomial trend equations is determined both for the period from 2013 to 2019 and for the period from 2013 to 2022, which indicates a generally positive trend as a result of the use of innovative means, the marketing effectiveness of which is considered in this study.

Conclusions and perspectives of further research. Judging by the change in the angular coefficients of trend polynomials for individual indicators for the periods from 2013 to 2019 and from 2013 to 2022, we see that positive dynamics are typical for all companies. This means that marketing innovations in the field of logistics space integration for all four firms included in this experiment lead to an increase in the vehicle load percentage, that is, they increase the efficiency of transport use. Thus, for the Bessarabia-trans company, the percentage of vehicle loading for the period from 2019 to 2022 increased by 22.2%, for the Diamant

company by 8.9%, for the Euro-Moving company by 12.5%, and for the ILT company by 7.8%. The situation is similar to the other indicators that were studied, that is, in profit. As shown in Table 2, when considering the dynamics of company profits over a longer period, that is, taking into account the period of integration activities using digitalization cross-sections, all trend lines of company profits have a derivative, which is an increasing function. That is, when the period of innovation is included in the study, positive results in the dynamics of company profit growth are clearly visible.

The profit of the group of companies as a whole increased by 53.5%. Such a significant increase in profits is due to successful marketing of the innovation. Therefore, this example of logistics integration can be considered an effective innovation. Since the experience of creating a single logistics center for four companies is positive, a scenario for the development of innovations with the involvement of other similar companies is possible.

References

- 1.Aram, E., Baxter, R. & Nutkevitch, A., 2019. Adaptation and Innovation. s.l.:Taylor & Francis Group.
- 2.Brem, A., Tidd, J. & Daim, T. U., 2019. Managing Innovation: Understanding And Motivating Crowds. s.l.:World Scientific.
- 3.Fragerberg, J., Mowery, D. C. & Nelson, R. R., 2006. The Oxford Handbook of Innovation. s.l.:OUP Oxford.
- 4.Honcharova, I. & Metil, T., 2022. Finding areas of innovative activity of the enterprise. s.l., Upravlinnja ta administruvannja v umovah protidii gibridnim zagrozam nacional'nij bezpeci: Materiali III Mizhnarodnoï naukovo-praktichnoï konferencii (m. Kiïv, 22 listopada 2022 roku).
- 5.Honcharova, I., Metil, T., Koval, V. & Neskhodovskyi, I., 2023. MARKETING INNOVATIONS IN CROSS-BORDER PASSENGER TRANSPORTATION. AGORA INTERNATIONAL JOURNAL OF ECONOMICAL SCIENCES, pp. 24-30.
- 6.Karlsson, C., Johansson, B. & Stough, R., 2009. Entrepreneurship and Innovations in Functional Regions. s.l.:Edward Elgar.
- 7.Kunert, C., 2018. Design for Stability in Transport Logistics - Definition, Concepts and Evaluation. s.l.:KIT Scientific Publishing.
- 8.Machado, C. & Davim, J., 2022. Organizational Innovation in the Digital Age. s.l.:Springer Nature.
- 9.Nagaraj, S., 2021. Insights, Innovation, and Analytics for Optimal Customer Engagement. s.l.:IGI Global.
- 10.Pascalau, S. V., 2017. Evolution and Ethics of Digital Technology in Marketing. AGORA INTERNATIONAL JOURNAL OF ECONOMICAL SCIENCES.
- 11.Pfohl, H.-C., 2022. Logistics Systems: Business Fundamentals. s.l.:Springer Nature.
- 12.Stefan, K., 2021. Innovation Management: Insights by young Business Developers Volume 3. s.l.:BoD - Books on Demand.
- 13.Trachenko, L. et al., 2021. Optimization modeling of business processes of engineering service enterprises in the national economy. Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu, Issue 4.