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Aleksander Sładkowski *Editor*

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Editor
Aleksander Sładkowski
Faculty of Transport and Aviation
Technologies
Silesian University of Technology
Katowice, Poland

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Contents

Logistic Flow Control System in Green Supply Chains

Nikita Osintsev, Aleksandr Rakhmangulov, Aleksander Sładkowski and Natalja Dyorina

Abstract The effective concept implementation of sustainable development in logistics and supply chain management is based on the use of management decision-making methods for changing the parameters of logistics flows. Decisions should be made based on the measurement and evaluation of the parameters and indicators of these flows. The complexity of managing green supply chains is associated with insufficient knowledge of the system of logistics flows indicators and parameters, as well as in the absence of methods for their comprehensive assessment. In the present work, an original system of indicators (indicators and parameters) of logistic flows in green supply chains is proposed. Managed parameters of logistic flows are identified, the change of which ensures the principles implementation of the sustainable development concept. The use of the fuzzy AHP-TOPSIS method for evaluating the performance of logistics flows in green supply chains is considered. A fuzzy model for managing the parameters of logistics flows has been developed. Changing the parameters of logistic flows in order to achieve the goals of the sustainable development concept is proposed to be carried out using the original system of green logistics instruments. The work presents a calculation implementation example in the logistics flow control system of the procedure for selecting green logistic instruments.

Keywords Sustainable development · Green logistics · Transport systems · Green supply chain management · Logistics flows · Indicators · Fuzzy approach · AHP-TOPSIS · Decision-making

N. Osintsev (✉) · A. Rakhmangulov · N. Dyorina
Department of Logistics and Transportation System Management, Nosov Magnitogorsk State Technical University, Lenin Street 38, 455000 Magnitogorsk, Russia
e-mail: osintsev@magtu.ru

A. Rakhmangulov
e-mail: ran@magtu.ru

N. Dyorina
e-mail: nataljapidckaluck@yandex.ru

A. Sładkowski
Faculty of Transport, Department of Logistics and Transport Technologies, Silesian University of Technology, Krasinskiego 8, 40-019 Katowice, Poland
e-mail: aleksander.sladkowski@polsl.pl

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