ABSTRACTS

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EVALUATION OF SUPPLIERS' QUALITY AND SIGNIFICANCE BY METHODS BASED ON WEIGHTED ORDER
(pages 1-4)

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Keywords: suppliers, products, cost, price, quantity
Abstract: The efficiency of the purchasing process co-decides on the success of the production organization. One of the basic tools for quality purchasing management is the selection and evaluation of suppliers. We can use a wide range of tools to evaluate suppliers, and this evaluation can be based on a large and diverse set of criteria. In the case of evaluating many potential suppliers according to a number of criteria, it is not possible to rely solely on the intuitive nature of the evaluation. Therefore, managerial tools based on the mathematical principles of multi-criteria decision-making have been increasingly important. The article deals with the analysis of the realized research focused on the use of mathematical methods in the evaluation of suppliers in an industrial enterprise. This article aims to analyse the possibility to use tools based on determining weighted order when evaluating suppliers. Data obtained from the research in a selected industrial enterprise in the Czech Republic was used for evaluation.

DISTRIBUTION FLOW IDENTIFICATION IN COOPERATION AND SUPPORT FOR ECOLOGICAL INNOVATION INTRODUCTION IN SLOVAK ENTERPRISES
(pages 5-8)

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Abstract: Innovations play an important role in achieving success of a company in a strong competitive environment. It is not sufficient just to innovate, but the more emphasis is placed on the creation of innovations implemented on the principle of sustainable development. This is the reason why ecological innovations are so important and why they have become the object of our survey which results are the topic of this paper. The paper presents the results of the survey monitoring the state of knowledge and usage of selected incentives within the distribution flows in cooperation and support for ecological innovation introduction in Slovak enterprises. The survey was realized by questioning in Slovak enterprises. The sample consisted of 517 enterprises that were selected by random selection from the population sample of the Slovak Republic. The surveyed questionnaires were processed into the database and subsequently evaluated quantitatively. Through a cluster analysis they were processed by cluster analysis in the STATISTICA program. Following the results, we can claim that in cooperation and support for ecological innovation introduction in Slovak enterprises, the distribution flows are mainly focused on sectoral innovation activity and less on regional and national innovation activity. The results show the difference in the use of selected incentives within the distribution channels in cooperation and support for the ecological innovation introduction in Slovak enterprises, which according to several authors is not a market failure, but from the point of view of a system approach to innovation, it is so called "innovation paradox".

DIGITALIZATION EFFECTS ON THE USABILITY OF LEAN TOOLS
(pages 9-13)

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Abstract: Current industrial engineering methods and techniques due to the complexity of new knowledge-based methods need to be extended to technologies and tools for modelling and simulation of production processes, logistics flows, production facilities as well as product design. It is important to focus on the whole life cycle of the company as well as the product. The article deals with the effects of digitization on lean-manufacturing tools that are often used in industrial practice.

IN THE ISSUES OF MATHEMATICAL MODELLING LOGISTICS PROCESSES
(pages 15-18)

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Abstract: Mathematical modelling came to logistics from economics. Economic models have been used for quite some time, but the results obtained force us to develop new branches of the theory. The solution of the characteristic equation is the basis of these algorithms as a rule. The classical solution of the characteristic equation from geometry is used. The solution is based on two postulates: the type of the characteristic equation is not changed and the solution is obtained in an orthogonal basis. The transformation matrix change the form of the characteristic equation is proved. The symmetries of space vary it. Solutions for complex non-linear processes should be considered in a non-orthogonal basis. This basis is primary. The orthogonal basis appears from it or in a particular case.

CONCEPTING FREIGHT HOLDING PROBLEMS FOR PLATOONS IN PHYSICAL INTERNET SYSTEMS
(pages 19-27)

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Abstract: For the sustainability of future logistics systems, Physical Internet is one of the most determined idea. Initial solutions and ideas exist, but the development in this area is far from complete. In our opinion, vehicle technology trends such as interconnected, autonomous vehicles and the platooning system are an important opportunity for the development of logistics network. This research aims to investigate how these new types of processes can be modelled using the results of a freight holding problem. The article surveys the possibility of reconfiguration of the platoons in the Physical Internet system by creating a virtual transfer point.