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Title: The method of the car fleet composition for short-term rental companies taking into account the total costs of ownership

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Słowa kluczowe: *TCO, Total Cost of Ownership, car fleet management, optimization of the car fleet costs, method of composition short-term rental fleet, car fleet management of short-term rental*

This dissertation concerns the composition of a car fleet for a short-term rental company, taking into account total costs of ownership (TCO), which are one of the key aspects in the decision-making process of acquiring vehicles for the car fleet and decisions regarding the size and composition of the fleet. Short-term rental companies face the challenge of effectively managing their car fleet, taking into account the demand for services and minimizing the costs associated with owning and using a car fleet.

Observations of market reality indicate that in many market segments, the purchase of a car should be based primarily on a precise and realistic economic calculation, due to the fact that it is an investment with long-term economic consequences. In practice, this means that you should take into account all expenses for a car and the costs associated with it. As available reports and studies indicate, when choosing a car, many people focus primarily on the purchase price, without analyzing the costs associated with its operation. Therefore, knowledge of the essence of the Total Cost of Ownership (TCO) parameter, i.e. the total costs of owning and using a vehicle, becomes of fundamental economic importance both for private users, but above all for people managing the purchases of car fleets.

The most important goal of this dissertation is to create a method of the car fleet composition for short-term rental companies, taking into account the total costs of ownership these vehicles, as well as the random tasks they perform and the revenues from making the vehicles available to customers.

The dissertation has been divided into ten chapters, which contain theoretical considerations, the developed method and its practical application. The theoretical part of dissertation, the issue of selecting vehicles for the car fleet along with the characteristics of the cars. Then, the state of knowledge regarding methods that can be used in the area of car fleet composition of short-term rental companies was reviewed and the characteristics of individual TCO components were carried out. The purpose, thesis and scope of the dissertation were defined and practical aspects of the research problem related to the selection of a car for a car rental company and the main elements important for the composition of the fleet of short-term car rental companies were presented. The practical part of this dissertation presents an original decision support model in the field of car fleet composition, developed for short-term car rental companies, which takes into account, among others: the most important features of the company, vehicle financing methods and currently used and obtainable means of transport along with their characteristics, as well as tasks resulting from the needs of car rental customers. As part of the research, an implementation of the model was carried out using Microsoft Excel with package the What's Best! which indicated the correctness of the considerations.

The considerations presented in the dissertation fill the research gap in the area of the application of TCO to the composition of the car fleet for short-term car rental companies. The dissertation ended with a summary and identification of directions for further research.