

Logistics Challenges and Opportunities of Automotive Industry Against the Background of COVID-19 In Poland: An Analytical Research*

Iouri SEMENOV

WSB University in Poznan, 5 Powstancow Wielkopolskich, 61-895 Poznan, Poland
iouri.semenov@wsb.szczecin.pl

Włodzimierz ROSOCHACKI

West Pomeranian University of Technology in Szczecin, Faculty of Maritime Technology and Transport, 41 Piastów Ave., 71065 Szczecin, Poland
wlodzimierz.rosochacki@zut.edu.pl

Ludmila FILINA-DAWIDOWICZ

West Pomeranian University of Technology, Szczecin, Faculty of Maritime Technology and Transport, 41 Piastów Ave., 71065 Szczecin, Poland

Correspondence should be addressed to: Ludmila FILINA-DAWIDOWICZ; ludmila.filina@zut.edu.pl

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Abstract

The COVID-19 pandemic essentially influenced global market, including automotive industry. This effect created challenges faced by cars' manufacturers and spare parts suppliers considering the changes in demand and time for products delivery. The article proposes an expert method to assess the efficiency of cars' maintenance services. The current cars fleet operating in Poland was analyzed, as well as forecasts for possible demand for new cars were examined. Research results show that the effectiveness of tackling the problems arising within automotive industry will depend on its degree of adaptation to the specificities of pandemic and post-pandemic phases. The possible impact of COVID-19 on age structure of cars' fleet in Poland and its possible changes in short-term and mid-term periods is investigated. The expert method for assessing the wear rate of the serviced cars considering repair duration is introduced. In a result of investigations, the threshold values of aged cars requiring repairs due to threat to lose their reliability were obtained. It is revealed that extending car lifetime radically decreases the probability to operate safely and influences time-consuming repairs.

Keywords: automotive industry, wear process, vehicle repair, logistics, auto spare parts, COVID-19