

LIFE CYCLE COSTS OF PASSENGER TRANSPORTATION SYSTEM. CASE STUDY OF WROCLAW CITY AGGLOMERATION.

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Abstract:

Passenger transport services may be performed with the use of different types of means of transport. In the Wroclaw city agglomeration this services are provided by regional carriers which use rail cars and buses. Following this, the paper is focused on the development of comparison analysis of LCC of defined means of transport.

Relevance for the Seminar: The developed LCCA of means of transport fits the area of issues on *Reliability Assessment and Life Cycle Costs Analysis of Structures and Infrastructures*, because on the one side provide a comprehensive investigation of the main cost structures of chosen means of transport life cycles, on the other there is a possibility to compare two types of passenger transportation services processes performed with the use of different types of means of transport.

Novelty: In the presented paper, there is to be presented a comparison analysis of LCC of different means of transport which are used in the same city agglomerations to provide passenger transportation services.

Methods and findings: In the article there is used LCC analysis (LCCA). Life Cycle Cost analysis is an economical-technical method of analyzing the costs of an object over its entire lifespan and assign equations to From the customer (buyer, user) point of view, the “living way” of an object starts from the purchase moment. Accordingly each investigated element. These equations represent the calculation of the cost of that particular element [1].

The presented method is possible to use with taking into account the gathered operational and maintenance data from analysed passenger transportation systems. In the first case, the research analysis covered 8 single car rail buses of particular type X. The analysed rail cars include these, which were handed over to the rail carrier from previous railway operator, as well as new ones were being bought by the regional province government and directly sent to the rail company. The data about rail buses’ operational process performance are taken from their operational books which are prepared by department of tram maintenance employees. In the second case, there is analysed bus fleet of regional transport operator. To compare the transportation systems performance in the area of LCCA, the main systems economical and dependability characteristics are obtained.

Literature:

- [1] Dziaduch I. 2010. Unreliability costs in Life Cycle Cost Analysis (LCCA) – comparison of calculation methods. *Journal of Summer Safety and Reliability Seminars*, vol. 1, No. 1.