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Abstract

Urbanisation in the era of Industry 4.0 is characterised by the rapid development of smart cities, in the management system of which SMART logistics infrastructure plays a special role. The main hypothesis of the study is to identify critical barriers that impede the implementation of SMART infrastructure logistics projects in smart city management systems, which, combined with the use of the fuzzy set method to build a comprehensive model for assessing such barriers, will allow for the timely development of an effective mitigation strategy. Based on the generalisation of the results of theoretical research and an expert survey on the barriers to the implementation of logistics SMART infrastructure projects, 12 of the most significant barriers were identified, and it was proposed to conditionally combine them into 4 groups: organisational, political, financial and technological. The feasibility of using the fuzzy set method for modelling the integral indicator of barrier assessment for the implementation of SMART infrastructure logistics projects is substantiated, taking into account the high degree of uncertainty of the decision-making process at the early stage of planning these projects. It is proven that the use of a fuzzy model of an integral barrier assessment indicator for the implementation of SMART logistics infrastructure projects ensures their scientifically based prioritisation and will contribute to the development of optimal scenarios for the development of smart cities.

Keywords: smart city; smart city management; logistics SMART infrastructure; barriers to infrastructure project implementation; fuzzy sets method; Ukrainian logistics infrastructure