

TITLE OF DIPLOMA THESIS

Investigation and prioritization of the criteria affecting construction equipment operators performance using VosViewer and Analytic Hierarchy Process (AHP)

AUTHOR

Tsakelidou Konstantina

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ABSTRACT

The construction sector plays a major role in the economic growth of a country, indicating its importance. Construction equipment is an integral part of every construction project, and its contribution is a necessary condition for the project's completion. It, also, represents a significant capital investment for companies in this sector. One of the strategic goals for such companies is the increase of equipment's productivity, which is affected mostly by its operators. The aim of this master's thesis is the recognition and prioritization of the criteria affecting the performance of construction equipment operators. Scientometric analysis, using VosViewer software, was implemented for the formation of different kinds of bibliometric networks, proposing a holistic approach to this research field. Those networks delineated the field concerning construction equipment operators and revealed the correlations between the network's items which was formed due to previous research and finally conclusions were drawn. There was also an indication about a gap in research of the past 20 years, concerning this domain. An extensive literature review in conjunction with unstructured interviews with operators determined the factors affecting operators' performance, with a view to create a hybrid decision model based on the Analytical Hierarchy Process (AHP), which was implemented by Transparent Choice's tool for AHP. Many experts evaluated the criteria affecting operators' performance and the outcome was the attribution of weights to each one of them, leading to remarkable conclusions.

KEYWORDS

Construction equipment, operators, performance, VosViewer, AHP.