Content Analysis of System Dynamic Module Elements*

Toms SIROVS

Riga Technical University, Riga, Latvia

Correspondence should be addressed to: Toms SIROVS; Toms.sirovs@gmail.com

Abstract

In the last two decades, research has increasingly looked at business management processes in the construction sector, using system dynamics models (SDM) to determine the positive and negative casual feedback in various management processes. Taking into account the diverse approach of system dynamics to the management of construction projects, it would be necessary to initially identify the binding elements of the model, ensuring a systematic understanding of their distribution. Using literature analysis, the study provides the results of a 29 selected scientific literature sources about the system dynamics in construction industry. Based on the analyzed results, five mainstream research themes were identified and discussed, including "project management", "project performance", "project panning", "project productivity", and "risk management". Using content analysis, 107 elements of the system dynamics model were obtained from the selected scientific articles. With the assistance of software NVivo 12 obtained elements were analyzed. The influencing elements of the system dynamics model were structured into five mainstreams indicating their significance in the selected group. In addition, future research directions, such as creating system dynamic module based on obtained elements was proposed. This study is able to provide an important basis for further research of system dynamics in the field of construction.

Keywords: system dynamic, content analysis, system dynamic elements, project management, construction.