

XXV Polish – Russian – Slovak Seminar “Theoretical Foundation of Civil Engineering”

The methodology of carrying out empirical research on the cumulative effect of the factors generating construction delays

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Abstract

The aim of this article is to present the model of carrying on empirical research of the cumulative effect of the factors generating delays on the construction site. The paper describes the successive stages of the proceedings, the process of implementing the model, the problems that emerged during the research and the directions for further research work. Moreover, it was developed graphical model structure decision, which shows the successive stages of research

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Keywords: Empirical research; decision model; construction delays

1. Introduction

For several years, there is a trend in Poland to orient researches to meet the needs arising from the industry. The beginning of this trend can be conventionally considered in 2007, when there was appointed " Program Operacyjny Innowacyjny Gospodarka 2007-2013" [3,9]. The project met with a very positive reception, and has contributed to the development of many innovative solutions and their implementations. Moreover, the benefits achieved through the undertaken cooperation, argued for a continuation of this type of project. They have been reflected in the next program– „Inteligentny Rozwój 2014-2020”. One of the industries that receives many benefits from this project is undoubtedly civil engineering.

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The main problems, which the Polish construction sector has to overcome, are delays of works [1,5,6,7,8]. The purpose of this article is to present a methodology that will make possible thoroughly study the presented problem.

2. Difficulties in obtaining data

Construction companies are very willing to share so-called best practices. There may be mentioned the procedures relating to security, acceptance of works and control of quality of construction elements. This information is easily available, usually in the form of brochures attached on the websites of individual companies. It is much more difficult to get so-called adverse information. There may be mentioned the conflicts with other participants in the investment process, accidents on construction sites or construction delays. The author, during his research work focuses on the last-mentioned problem - missing the deadlines of building works.

It should be noted that the adverse information require confidentiality, because they can greatly harm the image of the company. Moreover, the deterioration of the image will almost certainly have a negative impact on the financial result of the company. However, the adverse data is the most valuable, because they let researchers to develop tools that are helpful in the critical points of the entire project.

The author has partnered with a number of companies that are general contractors due to recommendations received from his Alma Mater, as well as many organizations and associations. Two of the most important associations are Polish Construction Employers' Association and Polish Association of Construction Managers. It is worth to be noted, that there constantly appear new partners from industry, which join the project.

3. Plan of the developed methodology

On the day of writing an article, a research project is not funded by any external entities. True, it limits the pace and scope of work carried out, but this also gives one very important advantage - independence. Typical projects after obtaining adequate funding, in Polish conditions, very often have to hold rigidly previously accepted project frameworks. This is, unfortunately, incorrect behavior because the essence of research consists in the fact that, depending on the results obtained, it is recommended to correct the next actions. It allows for complete customization of the research to the needs of obtaining specific solutions. This is particularly important if the project involves a large number of partners and each of them has its own contribution to the assumptions of the project. Of course, it should be looked for an appropriate compromise that allows all partners to achieve most of the benefits initially planned.

Figures 1, 2 and 3 show the decision-making model, which presents the methodology of research.

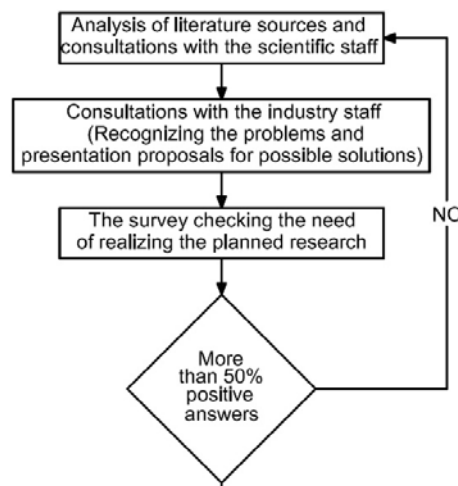


Fig. 1. The structure of decision model - Part 1 of 3. [own elaboration]

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