## ACADEMIC YEAR 2017 – 2018

**TITLE OF DIPLOMA THESIS**:

Prediction Models of construction cost for Technical Projects on Public Road Works

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**ABSTRACT**

The present research, concerns the up to today investigation of Neural Networks applications, as well as the applications of Artificial Neural Networks on predicting the actual construction cost of technical road projects. Also this research attempts to document the preference, reject or acceptance of artificial neural networks as a method for forecasting the cost of technical road projects against the traditional methods that are used.

In order to elect all the above regards, a detail analysis of conceptual frame of neural networks is attempted. So at the beginning, a description of the definition of neural networks and their structure is held. There is also a reference report in their historical development and their applications and at the same time on the advantages and their limits of use. A report in the various types of neural networks that are used in the processes of forecasting the cost of technical projects is attempted aw well, with objectives:

➢ The recognition of the field and the level of analysis that the artificial neural networks apply in processes of forecasting the cost of technical projects.

➢ The evaluation of applications of Artificial Neural Networks in processes of forecasting the cost of technical projects.

➢ The application of Artificial Neural Networks on forecasting the construction cost of technical road projects and specifically the maintenance of road facilities.

The investigation of extend of Artificial Neural Networks applications on forecasting technical project's cost, was implemented through an extensive bibliographic review. That review revealed, that the artificial neural networks apply on technical project's cost management so much with qualitatively and quantitative data and with techniques of supervised education. It was also obvious, that there is an extensive probability on growing powerful models for forecasting technical

project's cost under the term of their education with sufficient, representative and reliable sample of variables. Aiming therefore on the documentation of preference, reject or acceptance of artificial neural networks as a method of forecasting technical road project cost, a number of neural network models were developed.

The research finally, confirms the usefulness of artificial neural networks with use of quantitative construction data of technical road projects for forecasting their cost. The basic proposal of this paper is that the research in this sector has to be continuous. Reliable artificial neuron models have to be produced while this method is of course more reliable than the traditional methods of management of cost.

**KEYWORDS**

Neural Networks, Artificial Neural Networks, Cost Prediction of Technical Projects, Road Works