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Faculty of Engineering

# **Risk Factors Effect on Roads Construction Projects in Egypt**

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# **STATEMENT**

This dissertation is submitted to Ain Shams University for the degree of Master of Science in Civil Engineering (Structural).

- The work included in this thesis was carried out by the author in the Structural Engineering Department, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
- No part of this thesis has been submitted for a degree or qualification at any other university or institution.

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# ABSTRACT

- Road projects in Egypt suffer from many risks through the different stages of their construction especially through the last seven years according to the hard political and economic circumstances.
- This thesis aims to extract risk factors from literature and find out the top risk factors that confront the construction of road projects in Egypt depending on the opinion of road construction engineers in Egypt with various experience years ranges and subspecialties.
- A structured questionnaire was developed for this purpose with forty risk factors extracted from previous studies and divided into six main categories depending on the risk source and the project stage.
- The questionnaire includes the probability and the impact of each risk factor in order to calculate the relative importance index for each risk factor using the multiplication of each risk factor likelihood and effect.
- The data was analyzed by using IBM SPSS software in order to rank the forty risk factors and authenticate the gathered data. In addition to that a model of the factors affecting the construction of road projects in Egypt was created.
- As a case study, we observed and monitored the risks in reality for ten completed road construction projects.

**Key Words:** road construction; risk assessment; risk factors; statistical analysis.



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