



Cairo University

# **Measuring Construction Performance in Public Private Partnership Projects**

**By**

**Emad Fayez Gaid Abd El-Said**

A Thesis Submitted to the  
Faculty of Engineering at Cairo University  
in Partial Fulfilment of the  
Requirements for the Degree of

**DOCTOR OF PHILOSOPHY**

**in**

**STRUCTURAL ENGINEERING**

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### **Title of Thesis**

## **Measuring Construction Performance in Public Private Partnership Projects**

### **Key Words**

Public Private Partnership, Key Performance Indicators, Concession, Construction Performance, Principal Component Analysis.

### **Summary**

PPP projects has different phases and stakeholders needed to measure and assess the level of success and achievements of their targets. Performance measurement is a crucial component of business management. It is necessary to have a well-designed measurement system has the ability to check and monitor the performance and support the long-term strategic decisions for the company. key performance indicators (KPIs) present one of the best methods to measure and improve performance evaluation. The main target of this research to identify and prioritize KPIs that measure and evaluate PPP projects and contractors' performance in Egypt taking into consideration the size of the organization and the type of the project. Exploratory Factor Analysis (EFA) method has been used to analyze and determines the interrelationships between the set of indicators. the research introduces set of mathematical models to measure the overall project performance. Two prediction models are created to predict the cost at completion of the construction project.

## **Disclaimer**

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Emad Fayez Gaid Abd El-Said

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Completing this work is a huge step towards my career and life aspirations. I am grateful and hugely indebted to all those who have contributed to my achievements. I may never be able to repay the invaluable support I have received and hope that my commitment to this work demonstrates and is an acceptable gesture of my appreciation.

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