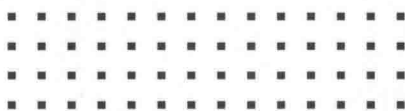


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商德福 著

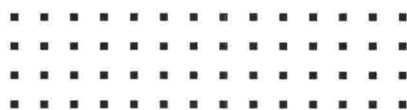


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Abstract

All kinds of risks affect the performance throughout the construction industry. The aim of this thesis is to explore the relationships between risk factors and cost performance dimensions in the Chinese construction industry.

The study identified, analyzed, and assessed the impacts of risk factors on the performance from the cost perspective and from the contractor's viewpoint. First, it identified 99 variables affecting the construction cost performance through literature review, then extracted 17 risk factors and 18 cost performance dimensions through factor analysis, then regressed risk factors against 18 cost performance dimensions, finally correlated risk factors with the cost performance dimensions through canonical correlation analysis. The study found that 18 models were produced through regression analysis with 16 risk factors affecting the cost performance dimensions, and a five - dimensional model was obtained through canonical correlation analysis with 10 critical risk factors influencing the cost performance dimensions.

The results showed that cost performance dimensions were affected by 10 critical risk factors which represented the important areas that all participants of construction projects should focus on. Especially Support of Consultants had triple correlations with cost performance dimensions, which showed its significance in the Chinese construction projects. Project managers should focus on this in the Chinese construction market. Although these ten factors did not cover all aspects of cost performance dimensions, they accounted for various important elements of cost performance dimensions of construction projects. It is expected that these ten project risk factors can lay

a foundation for future project risk and performance research in the Chinese construction industry.

Keywords: Risk Factors Affecting Cost Performance; Cost Performance Dimensions; Project Management of Construction; Chinese Construction Industry

前 言

本文作者对中国施工企业风险因子和成本绩效维度的相关性进行了有价值的研究。中国正在大力投资基础设施建设来推动其经济快速增长。中国投资在基础设施建设上的资金几乎占国内生产总值的 50%，几乎是其他发展中国家投资的两倍。为了使这项投资带来预期的效益，必须了解风险和成本绩效之间的关系表现。通过他的作品，正如在这本书里描述一样，本文作者进行非常实用的研究来确定这种相关性。

首先通过覆盖全球建筑行业进行文献搜索，发现有近 100 个潜在的风险因子和潜在的成本绩效因子对建设项目产生影响。在每种情况下，大约三分之二的识别因素是通过调查中国建筑行业，其他有三分之一补充因子是通过其他国家识别的。然后通过因子分析法，确定了中国建筑行业的 17 个独立的风险因子和 18 个独立的成本绩效因子。然后通过多元回归分析，显示 17 个风险因子和 18 个成本绩效因子之间的关系，并显示在每个成本绩效因子中，哪些风险因子有助于提高或降低绩效。这对于施工项目经理是非常有用的。这样可能是在任何建设项目中，只有六到九个成本绩效因子将有助于项目成功的重要因素。因此通过显示回归关系的列表，项目经理可以识别哪些风险因素对施工项目是最重要的。

本文作者也进行了典型相关性分析(CCA)，提出了一个五维度模型，该模型包含 10 个重要风险因子与 10 个重要的成本因子具有相关性。典型相关性分析显示这 10 个风险因子对中国施工项目重要性以及对项目成本绩效的贡献。这表明，项目经理在中国建设项目应该把大部分精力放在风险

管理上,以便于项目成本绩效最大化。我强烈推荐商德福的研究著作可以作为中国项目经理必备读物。

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《国际项目管理杂志》总编

PREFACE

Shang Defu has undertaken valuable research into the relationship between risk factors and cost performance dimensions in the Chinese construction industry. China is investing heavily in infrastructure to fuel its rapid economic growth. China is spending just under 50% of its GDP on infrastructure development, nearly twice what is being spent in other developing countries. In order for this investment to deliver the desired benefits to is essential to understand the relationship between risk and cost performance. Through his work, described in this book, Shang Defu performed useful work to identify this relationship.

First through a literature search covering the global construction industry, he identified just under 100 potential risk factors and potential cost performance factors on construction projects. In each case about two thirds of the factors he identified by investigating the Chinese construction industry, and the other one third were additional factors identified in other countries. Then through factor analysis, he identified 17 independent risk factors and 18 independent cost performance factors in the Chinese construction industry. Then through a multiple regression analysis he was able to show the relationship between the 17 risk factors and 18 cost performance factors and show which risk factors contribute to over or under performance in each cost performance factor. This is very useful for construction project managers. It may be that on any construction project only six to nine cost performance factors will be the main contributors to success on the project, and so through the table showing the regression relationships the project manager can identify which risk factors are most signifi-

cant on his project.

Shang Defu also conducted a canonical correlation analysis, and identified a five dimensional model with ten significant risk factors and ten significant cost performance factors, and showing the relationship between them. This canonical correlation analysis shows what are the ten most important risk factors on Chinese construction projects, and their contribution to project cost performance. This shows where project managers on Chinese construction projects should put most effort in managing risk on their projects to maximise cost performance. I strongly recommend this work as essential reading for project managers on Chinese construction projects.

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