

# 公共工程於施工階段採專業營建管理作業之研究

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## 摘 要

政府採購法施行之後，公共工程委託專業營建管理（PCM）始有法源依據，加上政府人力精簡，工程主辦機關工程方面能力、人力不足，及公共工程委員會鑒於專業營建管理制度的優點而大力推行，使得近年來公共工程委託專業營建管理成為一種趨勢。但從許多文獻中發現，許多工程委託專業營建管理的成效並沒有達到預期的效果。而至今業主與專業營建管理廠商仍藉由工程委託專業營建管理來累積雙方之經驗。

專業營建管理制度在美國施行已久，其成效良好。而國內應用在公共工程實行上其效用卻發揮有限。因此本研究欲以專業營建管理者的角度出發，以問卷進行資料的蒐集，經由模糊語意變數的轉換後，使用灰關聯度分析方法探討公共工程施工階段影響工程品質、進度、成本、風險因子的影響程度大小及專業營建管理方法之重要性，並同時針對 PCM 管理者的學歷、經驗背景做一研究，以了解不同學、經歷背景對影響因子及專業營建管理方法認知上的差異。

研究結果發現，影響因子中最重要因子分別為施工廠商“人為疏忽、人為錯誤、技術不良等造成工程施工品質瑕疵施工”、“施工廠商進料、出工、工地管理不佳、各包商進度協調不佳影響工程進度”、“營建物料價格的波動”及“底價過低或最低價得標過低之風險”。而最重要的專業營建管理方法分別為“工作項目界面（土建、水電、空調設備、管線等）之協調及整合”、“工程變更設計之評估、處理與建議”、“合理底價”及“採用最有利標決選施工廠商或經過資格及規格審查選取若干廠商進行比價”。其中學經歷愈高者有愈重視界面整合問題之傾向。

關鍵字：公共工程、專業營建管理（PCM）、灰關聯度分析、模糊語意變數

# **The Public Construction Adopts Professional Construction Management in Construction Stage**

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## **Abstract**

After Government Procurement Law has been published, Professional Construction Management (PCM) system applied to public construction has its basis of law. Due to the government policy of downsizing, public works project executive departments' lack of professional human resource and ability of civil engineering and Public Construction Commission advocating the advantages of PCM system for promoting quality of public construction, it has become a trend that applying PCM system to public construction for recent years. Many papers reveal that the effect of PCM applied to public construction is not as satisfied so owner's expectation. Owners and PCM companies are still at the stage exploring and accumulating experience of PCM system.

PCM system has been executed in America for many years and its effect is well, but it has the limited effect when applying to public construction domestic. From the aspect of professional construction manager the study explores the influence factors of quality, duration and cost and the importance of professional construction management means at the construction stage by means of using questionnaires to collect data, data handling of fuzzy linguistic terms and grey relational analysis. The study also explores the relation between the difference of educated background and experience with the recognition of influence factor and professional construction management means.

The study come to the conclusion that the most important influence factors are human inadvertence, mistake and lacking of skilled workmen making poor construction quality; the conflict between contractors delay construction timing; the price fluctuation of construction material; the risk of low engineering budget, or the tendering price is too low. The respectively PCM means are integration of interfaces; handling of changing order; reasonable engineering budget and using the most advantageous tender. The study also discloses the trend that the higher educational background PCM management put more emphasis on the issue of interface integration.

**Keywords:** public construction, professional construction management ( PCM ), grey relational analysis, fuzzy linguistic terms