UNIVERSITI TEKNOLOGI MARA

FACTORS INFLUENCING THE CONSTRUCTION TIME OF PUBLIC SECTOR CIVIL ENGINEERING PROJECTS IN MALAYSIA

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Abstract

The government appears to be the major provider of infrastructure projects in many developing countries including Malaysia. There are limitations and even drawbacks to these efforts as time required to complete the construction of public projects is frequently greater than the time originally specified in the contract.

The main purpose of the study is to identify factors affecting the construction time of public sector civil engineering projects in Malaysia. The study had been structured into three different phases where each phase had specific objectives and adopted different methods of data collection and analyses.

The first phase was based on 244 data sets collected from project files from three different public agencies completed between 1999 and 2003. Irrigation and flood mitigation, roads and sewerage projects were found to be delayed on average 26, 37 and 4 percent of their original contract duration respectively. Multiple regression analysis indicated that construction time performance of public projects was affected more by excusable variables than project characteristics variables. Through the regression models different variables were found to have different levels of effect on the construction time performance.

The second phase adopted a mailed questionnaire survey involving three groups of respondents, namely, government engineers, consultants and contractors. Out of 413 questionnaires mailed, 249 (60.3%) were duly returned. Using factor analysis and logistic regression, five factors with 42 underlying variables were found to be significant in contributing to the probability of project delays.

The third or final phase adopted case studies involving ten selected projects, five completed early or on time while the other five experienced delay in completion time. A total of 20 persons were interviewed involving both contractors and superintending officers' staff. The results of the case studies validated the findings of the earlier phases.

The study concluded that the construction time of public projects can be affected by a number of factors, they were contractor and workers related factor, project or site related factor, contractor's financial status, superintending officer and contractual relationships, and materials related factors. Recommendations were put forward at the end of the study to improve the construction time and minimize delays in public projects.

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CHAPTER 1

INTRODUCTION

1.1 Background

The construction industry is a vehicle through which a nation's physical developments are activated by initiating projects from blue print stage to implementation. The implementation and materialization of such projects inevitably can bring about benefits to the people and the nation, thus satisfying the aspirations of national progress and growth and in up-lifting the status of the nation economically. The government has contributed to the development of the construction industry in several ways and appeared to be the major provider of infrastructure projects in many developing countries, including Malaysia.

The government expenditure for infrastructures and utilities under the Seventh Malaysia Plan (1996-2000) and Eighth Malaysia Plan were RM23.53 billion and RM38.69 billion, respectively (Economic Planning Unit, 2006). The infrastructure component under the agricultural sector was irrigation and flood mitigation where the expenditure under the Seventh and Eighth Malaysia Plans were RM1.93 billion and RM2.57 billion respectively. In the light of Ninth Malaysia Plan which has been announced early 2006, allocation for infrastructure and utilities is RM46.84 billion while allocation for irrigation and flood mitigation is RM5.46 billion. Apparently, there are significant increases of allocation on those projects (infrastructure and utilities increased by 21.1%, irrigation and flood mitigation increased by 112.4%) in the Ninth Malaysia Plan.

There are limitations and even drawbacks to these efforts as time required to complete the construction of public projects is frequently greater than the time specified in the contract. Abdul Rahman (1979) postulated that in the process of national development planning and public policy making, developing countries are beset with program implementation failures. These failures are characterized by