

MAJOR FACTORS IN SELECTING CONSTRUCTION PLANTS AND
MACHINERIES

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ABSTRACT

A wrong selection of plants and machineries for the assigned work can cause a lot of problems such as cost overrun, occurrence of accidents, delay of work and poor quality of work. In order to acquire the right plants and machineries for the assigned work, the factors related to task, equipment costs, acquisition options, economic conditions and characteristics of mechanical equipment should be considered by contractors in selecting plants and machineries. Thus, the objective of this study is to identify the major factors considered by contractors in selecting plants and machineries. In this study, questionnaire is used as the instrument for collecting data and Relative index method is applied for analysing the data collected. The respondents of this study are limited to G5, G6, and G7 contractors in Johor and Kuala Lumpur area. All respondents are required to rate each likert scale question in the questionnaire based on their experience and view. The findings of this study revealed that there are nine (9) factors for building operations and fourteen (14) factors for civil works with relative index of more than 0.80 identified as the major factors considered by contractors in selecting plants and machineries. The data analysis has shown that most of the factors are under the category of agreement with relative index ranging from 0.6 to 0.8. In the comparison between building operations and civil works, it has shown a different level of consideration for each factor related to task and characteristics of mechanical equipment. Hopefully, this research can help to provide reliable information related to the major factors in selecting construction plants and machineries which can be used as a guideline for inexperienced contractors or project managers in order to optimise the usage of construction plants and machineries.

ABSTRAK

Pemilihan jentera dan mesin yang salah untuk sesuatu kerja boleh menyebabkan banyak masalah seperti kelebihan kos, kemalangan berlaku, kelewatan pekerjaan dan rendahnya kualiti kerja. Bagi mendapatkan jentera dan mesin yang betul bagi sesuatu kerja, faktor-faktor yang berkaitan dengan tugas, kos jentera, pilihan pengambilalihan, keadaan ekonomi dan ciri-ciri peralatan mekanik harus dipertimbangkan oleh kontraktor dalam memilih jentera dan mesin. Oleh kerana itu, tujuan kajian ini adalah untuk mengenalpasti faktor-faktor utama yang dipertimbangkan oleh kontraktor dalam memilih jentera dan mesin. Dalam kajian ini, borang soal selidik telah digunakan sebagai alat untuk pengumpulan data dan kaedah Relatif indeks diterapkan untuk menganalisis data yang dikumpul. Kajian ini tertumpu kepada firma-firma kontraktor kelas G5, G6 dan G7 di Johor dan Kuala Lumpur dan dihendaki menilai setiap soalan skala Likert dalam borang soal selidik berdasarkan pengalaman dan pandangan mereka. Dalam kajian ini didapati bahawa terdapat sembilan (9) faktor-faktor untuk projek kerja bangunan and empat belas (14) faktor-faktor untuk projek kerja awam dengan indeks relatif melebihi 0.80 telah dikenalpasti sebagai faktor-faktor utama yang dipertimbangkan oleh kontraktor-kontraktor dalam memilih jentera dan mesin. Keputusan data analisis menunjukkan bahawa sebahagian besar faktor-faktor dalam kategori persetujuan dengan indeks relatif 0.60-0.80. Di samping itu, ia juga didapati bahawa tahap pertimbangan untuk setiap faktor yang berkaitan dengan tugas dan ciri-ciri peralatan mekanik adalah berbeza untuk kerja-kerja bangunan dan kerja-kerja awam. Diharapkan, penyelidikan ini dapat memberikan maklumat yang berkaitan dengan faktor-faktor utama dalam memilih jentera dan mesin pembinaan yang boleh digunakan sebagai panduan oleh kontraktor atau pengurus projek yang tidak berpengalaman untuk mengoptimumkan penggunaan jentera dan mesin di sesuatu kerja pembinaan.