

**UNIVERSITI TEKNOLOGI MARA**

**INFORMAL RISK MANAGEMENT PRACTICES  
FOR COST OVERRUNS IN MALAYSIAN PUBLIC  
LINEAR PROJECTS**

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## ABSTRACT

The Malaysian construction industry is associated with a high degree of risk due to the nature of its business activities, process, environment and organisation. However, systematic risk management is not practiced in most public construction projects in Malaysia. This situation leads to project failure such as cost overrun, schedule slip and poor quality performance. Risk management is important to improve project performance in term of cost, time and quality. There is little information on the way informal reactive risk management practice contributes either positively or negatively to the project outcomes. The aim of this study was to understand the influence of informal risk management practice to mitigate cost overruns in Malaysian linear-type public projects. It involved projects that had cost overruns and were supervised by Malaysian government technical agencies on behalf of Malaysian ministries and other government agencies. A qualitative-quantitative research methodology was used. The qualitative study involved interviews with a triad of client, consultant and contractor participants in 15 projects. Inductive content analysis produced 16 categories of risk factors, 3 categories of risk treatments, 6 categories of barriers to risk treatment usage and 5 categories of coping actions to overcome the barriers to risk treatment usage. In the second phase of the study, a questionnaire was designed using the respective subcategories of these categories from the qualitative study phase and literature review findings. The questionnaire was surveyed on triads of project participants in 250 projects. Hence, 750 persons were surveyed. The data from returned completed questionnaires from the triad respondents of 31 projects generated the findings. Factor analysis was used to confirm the categories. Mean scores were used to determine the ranking of the categories. The top risk factor categories were: 1) design, 2) inadequate information and 3) land issue risks. The top risk treatment category was risk treatments during planning and design stage. The top three barrier categories were physical, technical as well as procedural and contractual barriers. The top three coping action categories were rescheduling, redesign and extra resources. T-tests and ANOVA were conducted to detect significant differences between four project characteristic variables and categories of the four risk-related variables (i.e. the risk factor variable, risk treatment variable, barrier variable and coping action variable). There were altogether 10 test results that showed significant differences ( $p < 0.05$ ). One-way correlation analyses were done on the relationships of overall mean scores among the risk factor variable, risk treatment variable, barrier variable and coping action variable. There is a moderately strong significant one-way correlation between the risk factor variable and cost overrun variable ( $p < 0.05$ ). Multiple regression of the categories that made up the risk factor variable (independent variables) and the cost overrun variable (dependent variable) was conducted. Only the third party organisations risk factor category and tender price risk factor category loaded on the regression equation. It is concluded, therefore, that third party organisations and tender price are two risk factors having an impact on cost overruns.

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