RISK ANALYSIS OF BRIDGE CONSTRUCTION PROJECTS IN PROVINCE OF PAPUA

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ABSTRACT

Bridge construction projects in Province of Papua have been encountering the similar problems from year to year. Among those problems are delayed works, cost overruns, limited construction funds and delayed administration of contracts, work qualities not specification. This was due to such several aspects as unskilled human resources and hard geographical and topographical conditions with dense forests, rivers, gorges, ravines, cliffs and valleys with soft soils. Hence, risk analysis of bridge construction projects was required.

The purpose of the present research was to determine perceived risks of bridge construction projects of such parties involved in it as consultants, contractors, and owners and to determine difference in perceived risks of contractors, consultants, and owners. Objects of the research were bridge construction projects with reinforced concrete and composite concrete. Data was collected by means of questionnaire administration to and interview with respondents consisting of site engineers, project managers and owner. Data collected was subjected to Probability Impact Grid with Scores of Risk. Those scores were the used to determine difference in perceived risks of contractors, consultants, and owners, which was then analyzed by ANOVA test.

Results of risk analysis of construction time indicated that, according to the consultant, the highest risk was poor performance of sub-contractors. According to contractor, it was due to under- or unskilled workers. According to Owner, it was due to difficulty in obtaining workers directly on-site. In terms of construction costs, the highest risk was, according to consultant, low level of productivity. However, according to contractor, it was due to weather conditions. Nevertheless, according to owner, it was due to under- or unskilled workers.

Result of different test, contractor and consultant have same perception in assessing risk. While perception of assessment of risk according to compared to smaller owner of perception of contractor and consultant.

Keywords: Bridge construction, score of risk, probability impact grid, risk