

Analysis Of the Causes of Delays in The Refinery and Wellhead Platform Construction Projects

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Objectives/Scope

The purpose of this study is to analyze and investigate relationships between the three major groups of stakeholder-related causes and project delays in refinery and wellhead platform projects.

Methods, Procedures, Process

A literature review and interviews with experts who worked in the petroleum industry were performed to develop a conceptual framework. A questionnaire survey was used to collect data from work leaders, engineers, supervisors, and managers of both a refinery and a wellhead platform project in Thailand. The data were then analyzed using structural equation modeling to investigate the causal relationship among the data.

Results, Observations, Conclusions

The results of the final SEM model show the following: (1) the most significant direct relationship with project delays were owner-related causes and the contractor-related causes (54.7% and 41.4%, respectively); (2) the designer-related causes had low direct relationship of project delays (3.9%), but it has a correlation with the owner-related causes; (3) the contractor-related causes was a high relationship with the owner-related causes (70.2%); and (4) stakeholder-related causes of delays in the top ranked were related to personnel cases such as poor qualification of representative staff assigned to the project by the project owner, inadequate experience assigned to the design team, and contractor supply of unqualified and unskilled personnel. Additionally, time overruns (53.9%) and cost overruns (46.1%) are the primary indicators of project delays from stakeholder-related causes.

Novel/Additive Information

This model informs how stakeholder-related causes are affecting project delays and could be used as a guideline to make stakeholders aware of the risks of delays, especially the project engineer and project manager in upstream and downstream oil and gas construction projects.