

Decision Support for Modularisation: Engineering Construction Case Studies

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Abstract : This paper aims to investigate decision support strategies in the EC sector to determine the most appropriate degree of modularization. This is achieved through three oil and gas (O&G) and two power plant case studies via semi-structured interviews (n=59 and n=27, respectively), analysis of project documents, and case study-specific semi-structured validation interviews (n=12 and n=8). New terminology to distinguish degrees of modularization is proposed, along with a decision-making support checklist and a diagrammatic decision-making support figure. Results indicate that the EC sub-sectors were substantially more satisfied with the application of component, structural, or traditional modularization compared with system modularization for some types of modules. Key drivers for decisions on the degree of modularization vary across module types. This paper can help the EC sector determine the most suitable degree of modularization via a decision-making support strategy.

Keywords : modularization, engineering construction, case study, decision support

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