UNIVERSITI TEKNOLOGI MARA

THE INFLUENCE OF ESTIMATORS' COMPETENCIES ON COST ESTIMATION PERFORMANCE: TEAMWORK PROCESSES AS A MEDIATOR

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Thesis submitted in fulfilment
of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Postgraduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Accurate cost estimation during the tendering stage is essential for the successful planning and execution of construction projects. Although previous studies have examined various strategies and factors influencing cost estimation, limited research has addressed how these factors function collectively at the operational level, particularly in team dynamics. This study adopts the Input-Process-Output (I-P-O) Model to explore the relationship between estimator competencies (EC) as the input, teamwork processes as the process, and cost estimation performance (CEP) as the output, with competencies framed around the knowledge, skills, and attitudes (KSA) framework. A quantitative survey was conducted among professionals involved in construction tendering to identify and validate internal factors that influence cost estimation accuracy, including quality, time, and errors. The analysis confirmed that all identified factors significantly contribute to cost estimation performance. Human-related factors, such as individual knowledge, skills, and attitude, were perceived as more critical than organisational support systems. This finding raises important questions about how effectively estimators collaborate and perform within team environments to deliver accurate estimates within tight tender deadlines. The study applies teamwork effectiveness theory to better understand this dynamic, highlighting the importance of role clarity, coordination, and alignment between individual contributions and organisational expectations. The mediation analysis confirmed that teamwork processes significantly translate individual competencies into improved cost estimation performance outcomes. By integrating the I-P-O Model, this research advances current understanding through a combined competency-based and team-based approach to cost estimation, offering both theoretical contributions and practical implications for enhancing the performance of construction tendering teams.

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