Understanding the interrelationship between different knowledge areas in PMBOK through the development of system dynamics model

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ABSTRACT

Last minute changes, error, rework, cost overrun and delays are common issues in project management. Besides that project managers also face the pressure of completing projects within the given time and allocated budget. Project Management Body of Knowledge (PMBOK) by Project Management Institute (PMI) compiles guidelines for project management through the introduction of ten knowledge areas. Although, PMBOK provide detailed, step-by-step guidance through the project management process, there is no discussion on the interrelationship and interdependencies between the knowledge areas. Frequent changes in the projects also lead to uncertainly and unpredictable outcome as project manager's well intentioned efforts to solve a problem sometimes make it worse. This is because the action's outcome are delayed, diluted or defeated by unforeseen reactions of other factors due to the interconnected factors in project management. System dynamics methodology will be used in this study to capture the interdependencies between different knowledge areas that occurred during the pre-construction phase of a residential housing construction project. The developed model can be used by project managers to understand the interconnectivity and interrelationship between different knowledge areas. Also, the model can be extended as a learning tool where project managers can test extreme conditions or strategies to the model and observe its impact before implementing it to the real project.

KEYWORDS

Project Management; Simulation; Systems dynamics; PMBOK; PMI; Interdependencies

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