

CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT

Improving the quality of as-planned programmes for effective project control

The construction industry plays a significant role in the UAE economy by developing key infrastructures for the country and contributing a share of 14% to GDP. Research demonstrates that 50% of the construction projects in UAE encounter delays which can significantly impact not only the project stakeholders but the wider national economy. From a project management perspective, a successful project is one which is successfully delivered within the parameters determined by the client or sponsor, typically including time, cost and quality. Project planning and control are among the most significant project management processes and are largely schedule driven. Research demonstrates that shortcomings in as-planned programmes or baseline schedules developed during the planning phase contribute to construction projects failing to achieve successful outcomes.

With the aim of overcoming the shortcomings in as-planned programmes, this study focuses on answering the research question 'How can the quality of as-planned programmes be improved to enable effective project control?'. A mixed methodology with an exploratory approach was adopted in this study using a combination of surveys and interviews. Before undertaking the study, a literature review was performed to establish benchmarks and the characteristics required to develop high-quality as-planned programmes. A survey was conducted with project and planning engineers and managers in UAE, with questions based on the required characteristics of as-planned programmes and using the Plan Do Check Act cycle to understand shortcomings in the current practice employed for the development of as-planned programmes. The quantitative survey data were used to develop open-ended questions for the semi-structured interviews conducted with target participants. The objective of the interviews was to explore and address shortcomings in the production of as-planned programmes in order to enable improvements.

From the initial analysis of the qualitative data collected during the interviews, shortcomings were noted against each characteristic along with challenges and barriers to overcoming them. The findings were further elaborated by comparison with evidence from previous studies identified in the literature review. The key shortcomings identified were limited engagement of key stakeholders, insufficient inputs from SC and Suppliers, not using advanced tools and techniques, limited engagement of Planning Engineers, no effective communication between the Project team members, not approaching the as-planned programme development as a process and no quality management practice is implemented to continuously improve the quality of as-planned programmes. The important root causes, barriers and challenges to overcome these shortcomings are the contractual limitations to engage stakeholders, insufficient time to submit as-planned programme, contractual limitations to use advance tools and techniques and Planning Engineers are office based and engaged in multiple projects.

The potential ways to overcome the shortcomings and to enable improvement in as-planned programme and its development process are, to develop and distribute a narrative report to enable effective communication within the project team, allocation of planning engineers for sufficient time at the initial stage of the project and addressing the contractual limitations. Most importantly the underlying potential solution is to have effective communication, collaboration and engagement with key stakeholders and attention towards the due diligence throughout the client and MC procurement process and planning process and their interfaces.