World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

A Systematic Review on Development of a Cost Estimation Framework: A Case Study of Nigeria

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Abstract : Cost estimation in construction is often difficult, particularly when dealing with risks and uncertainties, which are inevitable and peculiar to developing countries like Nigeria. Direct consequences of these are major deviations in cost, duration, and quality. The fundamental aim of this study is to develop a framework for assessing the impacts of risk on cost estimation, which in turn causes variabilities between contract sum and final account. This is very important, as initial estimates given to clients should reflect the certain magnitude of consistency and accuracy, which the client builds other planning-related activities upon, and also enhance the capabilities of construction industry professionals by enabling better prediction of the final account from the contract sum. In achieving this, a systematic literature review was conducted with cost variability and construction projects as search string within three databases: Scopus, Web of science, and Ebsco (Business source premium), which are further analyzed and gap(s) in knowledge or research discovered. From the extensive review, it was found that factors causing deviation between final accounts and contract sum ranged between 1 and 45. Besides, it was discovered that a cost estimation framework similar to Building Cost Information Services (BCIS) is unavailable in Nigeria, which is a major reason why initial estimates are very often inconsistent, leading to project delay, abandonment, or determination at the expense of the huge sum of money invested. It was concluded that the development of a cost estimation framework that is adjudged an important tool in risk shedding rather than risk-sharing in project risk management would be a panacea to cost estimation problems, leading to cost variability in the Nigerian construction industry by the time this ongoing Ph.D. research is completed. It was recommended that practitioners in the construction industry should always take into account risk in order to facilitate the rapid development of the construction industry in Nigeria, which should give stakeholders a more in-depth understanding of the estimation effectiveness and efficiency to be adopted by stakeholders in both the private and public sectors.

Keywords : cost variability, construction projects, future studies, Nigeria
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020