DEVELOPMENT OF LIFE CYCLE COST STRATEGY AND PROTOCOL ON COST DATA INPUT IN MALAYSIA

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ABSTRACT

Life Cycle Cost (LCC) is an economic assessment technique that produces outputs, which will give useful cost information to the clients, cost estimators and researchers in facilitating them to make better decision in the process of determining the most optimum total ownership costs of an asset over an anticipated life or in comparing the most cost-effective of mutually exclusive alternatives. The availability, accessibility, currency and reliability of cost data used as inputs in LCC analysis is of paramount importance that should be emphasized in the estimation to produce reliable LCC outputs. The aim of this research is to enhance quality of LCC outputs through the enhancement of quality data input requirements. There are different kinds of data inputs used in LCC analysis; however this research only focuses on cost data inputs of building LCC. This research seeks to achieve the following objectives; (i). to establish the background, evolution and the present practice of LCC with specific reference to its practice in the construction industry, (ii). to assess cost data used as inputs in the practice of LCC, (iii). to develop and propose strategies in relation to the practice of LCC focusing on data inputs, (iv) to develop, evaluate, validate and test protocol which provide procedures on how cost data as inputs of LCC could be made more available, accessible, current and reliable into the process of producing reliable LCC outputs in the Malaysian construction industry. The methodology employed comprises a literature review, modified Delphi and Focus Group Discussion (FGD). The literature study has found that one of the major hurdles in carrying out the LCC analysis is lack of current and reliable data. In addition, commentators pointed out that there is a very important need to give greater emphasis on the quality of data used as inputs in LCC analysis to ensure reliability in LCC analysis can be achieved. Furthermore, the literature study has found the practice of LCC analysis in the Malaysian construction industry has been relatively limited however; it has gone through the process of evolution. The results of modified Delphi show all the panellists have the same opinion that there is limited availability and inaccessibility of current and reliable cost data inputs of LCC in the Malaysian construction industry. In addition, the modified Delphi study has generated consensus regarding the most appropriate strategies that could be proposed to make the data more available, accessible, current and reliable as inputs into the process of producing reliable LCC analysis. Looking at the proposed strategies, there is an overwhelming requirement for a clear procedure to be prepared on the acquisition of cost data inputs in purposely to enhance quality data input requirements of LCC. Hence, a protocol of LCC

data input requirements process that comprises a flow chart, step by step procedures and remarks was developed, evaluated, validated and tested in this research using FGD approach to provide robust procedures on how the cost data could be made more available, accessible, current and reliable as inputs into the process of producing reliable LCC outputs in the Malaysian construction industry.