SUMMARY

This study is an attempt to illustrate the significance of appropriate consultant selection criteria and procedures for development and infrastructure projects. It focuses on construction client organizations, in particular governments and public sector agencies, and investigates their selection strategy including the attributes on which consultants are evaluated upon as well as the procedures followed in the selection process. Its primary focus is to highlight the complexity arising in the consultant selection process due to features like non-linearity, uncertainty, subjectivity and adaptivity and aims to find a solution with the help of knowledge engineering, to deal with this complexity.

Prior research on consultant selection focused primarily on the type and number of attributes and deriving formulae to be considered by construction clients while procuring consultant teams. Currently, the selection strategies adopted by governments and public sector agencies do not consider the complexity arising due to non-linearity, uncertainty, subjectivity and adaptivity that is inherent in the process of selection. An enquiry into conventional decision-making aids reveal that they are not sophisticated enough to address complexity involved in the selection process.

The costs involved in infrastructure projects are exorbitantly high. Moreover, development and infrastructure projects have such far-reaching implications that they could influence the lives of millions of people in and around the vicinity of the project. The impact could be social, environmental or economical, etc. Undoubtedly the consultant team plays a vital role in order to ascertain the success of the project. Consultant selection model for infrastructure projects should therefore be capable of addressing the complexity that is generated due to non-linearity, uncertainty, subjectivity and adaptivity, for failure to take account on this complexity weakens the selection model and accordingly the chances of project success.

The complexity mentioned above is however difficult to deal with as these features have neither been captured in construction client’s databases nor in
their selection models, simply due to the fact that conventional databases are not sophisticated enough to capture and retain this kind of knowledge about consultants. Hence in the absence of historical data, an approach that is more qualitative in nature has been adopted in this research.

Structured interviews were conducted at a few government agencies, which are considered to be major construction clients in Singapore. Further a questionnaire was sent to international institutions that issue standard guidelines for consultant selection namely, World Bank, Asian Development Bank, Federal Aviation Administration, International Labor Organization and various government agencies in Singapore. The responses and interviews support the hypotheses that current selection strategies adopted by construction clients fall short of addressing the complexity highlighted and emphasized that they should incorporate ways to deal with it.

The analysis led to an enquiry into knowledge based decision support systems as they illustrate a much-sophisticated behaviour while dealing with the complexity in the selection process.

A need for developing and maintaining of a "knowledge base" for public sector organizations is evident. Further, a theoretical base is provided for the development of knowledge based decision-support model for assisting the assessment committees while selecting consultants. This sets a base for further applied research for the actual development of the model.