ABSTRACT OF Ph.D. Thesis

Utility Enhancement of Building Projects Through Value Engineering

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House construction is a very important part of development of any country. Unless the key areas of user satisfaction are identified and implemented it may not be possible to attain customer satisfaction. A house even with little shortcomings causes displeasure and dissatisfaction to the users for the entire life. Hence, the importance of research in the field of customer satisfaction in the housing sector cannot be overstressed.

An extensive review of literature related to utility enhancement in building construction has been carried out. Micro and macro variables have been identified and defined on the basis of the literature review. Based upon the discussions held with the customers, construction industry experts and academicians, a detailed questionnaire was formulated. The response of the users has been obtained in two phases. In the first phase, opinion of the customers has been considered through an open ended questionnaire. In the second phase, the response of the industry professionals was obtained through a questionnaire based survey.

The present study analyses the status of customer satisfaction in India by considering different issues viz. cost, time, safety, relations, type of material and sizes leading to the utility enhancement through value engineering. The survey response data is analyzed for mode, correlation, regression against their criteria for customer satisfaction measurement. Based upon the feedback of the respondents, a set of issues that are considered most important in the customer satisfaction have been identified. Issues having significant correlation are also highlighted. The study also identifies and recommends a Linear Regression model with all the issues analyzed separately. Similar regression model is also obtained with all the issues taken together.

The empirical study was carried out for validating the hypothesis with various methods of analysis such as factor and regression analyses. For the choice of material, rank method was used and for the other responses five point Likert Scale was used. The quantitative data gathered through questionnaire survey was analyzed using various statistical techniques such as correlation, regression and factor analysis. The analysis has been done with the help of the computer packages particularly SPSS 13 and other statistical packages.

Expert opinion of the industry experts and academicians helped in framing the issues and also contributed a lot in identification of the major factors affecting the utility. The results of analysis clearly indicate that some of the factors affect utility more than the others. By taking due care of these factors the utility of the projects may be greatly enhanced. An important outcome of the study is in the form of three mathematical models that have been framed on the basis of the statistical techniques such as correlation, regression and factor analysis. A distinct practical advantage of the models developed herein is that these models can be applied in evaluating utility of housing projects. The developed models, therefore, provide effective tools for improvement in the utility of housing projects.