

Applying Prefabrication Techniques and Its Performance Improvement in Developing Countries

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Abstract: In developing countries like India the construction rate is increasing day by day, in this type of culture it is very important to focus on more buildings with low cost and less time. And thus the cost of construction and time is being reduced by one such type is to use prefabrication technology. The aim of this paper is focused on rectifying the problems in prefabrication technology and improves its performance by using Benchmarking tool. SPSS (Statistical Package for Social Science) software and MATLAB is used to analysis the data's collected and an comparison is made between the software's. Here the performance of prefabrication technique is improved based on the Benchmarking tool.

Keywords: Prefabrication, MATLAB, SPSS, Benchmarking tool.

1. Introduction

Prefabrication technology is one of the developing technology in and around the world and also in developing countries like India, Africa, etc, In this fast moving society people begin to trust on the prefabrication technology which have the major benefit of faster construction time with low cost. In this study the major factors affecting the performance improvement of prefabrication technique is identified and ranked based on their criticality. The data collection is by questionnaire method and the data collection is analyzed by using software's SPSS (Statistical Package for Social Science) and MATLAB. A comparison is also made between the software's with the obtained results. The suitable measures for performance improvement are also recommended in the study based on the major factors affecting the performance improvement of prefabrication construction. This study aims at understanding the needs of prefabrication construction by improving its performance by using Benchmarking tool. The main objective of this study is to provide an overview of the development and performance improvement of prefabrication techniques in the developing countries.

2. Need and Scope of the Project

Prefabrication technology is the newly emerging technology in developing country for its wide range of applicability such as faster rate of construction time, low cost, use of locally available materials and also suitable in all weather conditions. The main theme of this paper is to introduce and to provide more knowledge about prefabrication technology in developing countries. It is done by improving its performance by using Benchmarking tool and by marking awareness in the market. It focuses specially on the rural areas of the society for a beautiful and affordable shelter. This paper also helps in rectifying the problems in the prefabrication construction by improving its performance.

3. Methodology

In this project the data's are analysed by using the software's SPSS (Statistical Package for Social Science) and MATLAB. The software's was well studied and the factors affecting the performance improvement are identified by ranking in SPSS software and the method of rectification for improving the performance in prefabrication technique is done by using Benchmarking tool. SPSS is software which is used to evaluate the performance of an organization. SPSS software is compared with MATLAB for better results. The questionnaire survey done for this project is very effective because the obtained standard data are suitable for attaining the main objectives of this study. Computation is done by the respondent's data which is been collected and the rank was determined by using the standard deviation and the mean values. The data collection through questionnaire survey was conducted to resolve the importance of factors affecting the performance improvement in prefabrication technique and which was perceived by managers, site engineers and also supervisors working within the particular prefabrication construction industry.

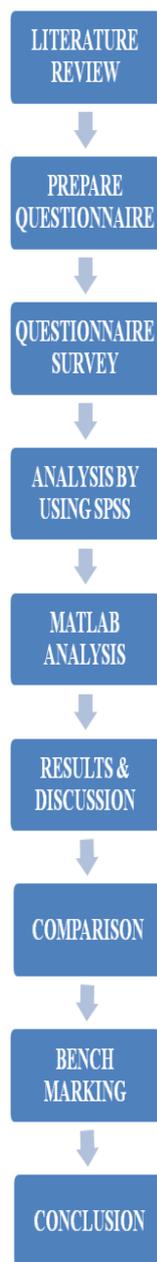


Figure 1. Methodology

4. Analysis of Data

The data's collected through questionnaire survey can be analyzed using the software's SPSS (Statistical Package for Social Science) and MATLAB. MATLAB is used in this project to make an comparison with the SPSS software and the obtained data's from questionnaire survey will be entered in both the software's SPSS and MATLAB. In SPSS software standard deviation and mean values will be shown as outcome. Depending upon the critical factors ranking is done. The ranking is based on the higher mean value. The results obtained from both the software's SPSS and MATLAB is compared.

5. Results and Discussion

The results obtained from SPSS software will be in the form of standard deviation and mean values and the ranking is done based on the critical factors accordingly. In MATLAB the results are plotted in the form of graphical representation and an comparison is made between the software's for better result. The most critical factors affecting the performance improvement in prefabrication technique is enlisted in this section for rectification.

6. Benchmarking in prefabrication technique

Benchmarking is a management tool which is used in much organization to drive overall improvement in the performance of a company. It helps to compare the current project with competitors within the industry. Benchmarking identifies the opportunities and set goals and challenge on what is possible. It helps us to understand the process of improvement. Benchmarking focuses on many characteristics in an organization and especially on the performance characteristics. The methodology involved in Benchmarking process is planning phase, collection phase, analysis phase and adaption phase. In planning phase the area to be focused is chosen. And the collection phase involves the detailed questionnaire, detailed investigation, telephone interviews and also site visits to screen the competitor's best practice. In analysis phase a brief comparison is made between the projects i.e.) current project data to your competitors data. Through this comparison the information collected are assembled and an analysis is made to identify opportunities for improvement by developing an implementation plan. Finally, in adaption phase the developed implementation plan is adapted for improvements in performance and the implementation is monitored and reported progressively. The planning is done continuously for the improvement in performance and new Benchmarking opportunities are identified and new goals are set.

In this project the data's collected is to be analyzed by using the software's SPSS and MATLAB and a comparison is made between the software's for the best result. The major factors affecting the performance improvement in prefabrication technique is taken for rectification by using Benchmarking tool. It identifies the critical factors affecting the performance improvement and determines the best practice. This project aims at understanding the needs in prefabrication technique from the process of performance improvement. The main objective of this study is to provide an overview of the development and performance improvement of prefabrication technique in the developing countries. This study also helps to

recognize the factors affecting the performance development in prefabrication construction.

7. Solution

The solution is based on the factors affecting the performance improvement of prefabrication construction which is obtained from the analysis by SPSS (Statistical Package for Social Science) software. The solution should be such that it will improve the performance in prefabrication construction by considering the factors affecting. In this study the solution will be by using Benchmarking tool for the performance improvement in prefabrication construction. For that a brief detail on Benchmarking is collected. The method for the performance improvement in prefabrication construction should be studied and investigated well for the performance improvement and the method of implementation is done.

8. Conclusion

In developing countries like India prefabrication is a well known procurement option. When looking into the past experience of prefabrication construction it has been labeled as poor quality product. This project mainly focuses on rectifying the major factors affecting the development of prefabrication construction by improving its performance. It has the capability to make changes with the developing countries in construction industry. It is important to know how much of potential changes it can make are accepted. So, that suitable development can be implemented by using Benchmarking tool for the performance improvement in prefabrication construction and attain its standardization in developing countries. The concept behind Benchmarking is comparing the current project with competitor's project to drive improvement in the performance of a company. This project aims at understanding the needs in prefabrication technique from the process of performance improvement. The main objective of this study is to provide an overview of the development and performance improvement of prefabrication technique in the developing countries. This examine additionally allows to recognize the elements affecting the performance development in prefabrication creation.

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