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Evaluation of quality management system by implementing quality matrix in construction using SPSS

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ABSTRACT

Quality has become a very popular subject in recent years due to conceptual changes in the industry. The product in any industry should be manufactured to a required standard, one that provides customer satisfaction and value for money. Quality is one of the critical success factors in the construction industry. The need for achieving the quality of the finished product in the building construction is very important. The high cost of buildings makes it necessary to ensure the quality of the finished product. Quality is an essential element for sustainability and customer satisfaction. In construction projects, quality performance is considered as vital for client satisfaction. This study is intended to provide clients, project managers, designers, and contractors with the necessary information needed to better manage the quality of a construction building projects by identifying the factors that affect process quality o f construction projects and to rank them by the degree of importance. Developing a quality system is the first step towards improving quality in the construction industry. Towards this goal, firstly a questionnaire survey will be conducted in a construction industry. From the data collected by the questionnaire survey analysis can be done by using SPSS statistics software.

Keywords: *Quality management systems, Effectiveness.*

1. INTRODUCTION

Quality has become a very popular subject in recent years due to conceptual changes in the industry. Quality and quality systems are topics which have been receiving increasing attention worldwide. The product in any industry should be manufactured to a required standard, one that provides customer satisfaction and value for money. Quality is one of the critical success factors in the construction industry. The need for achieving the quality of the finished product in the building construction is very important. The high cost of buildings makes it necessary to ensure the quality of the finished product. Quality is an essential element for sustainability and customer satisfaction. In construction projects, quality performance is considered as vital for client satisfaction. This study is intended to provide clients, project managers, designers, and contractors with the necessary information needed to better manage the quality of a construction building projects by identifying the factors that affect process quality of construction projects and to rank them by the degree of importance. Quality can be defined as consistently" meeting" or „Exceeding" the customer expectations", or" compliance with customer specification". No matter what definition we follow for quality, it becomes very complex when we try to put it into actual practice. Developing a quality system is the first step towards improving quality in the construction industry.

For the implementation of quality management in construction projects, the concepts of quality planning (identification of quality standards), quality assurance (evaluation of overall project performance) and quality control (monitoring of specific project results). Several tools and techniques will identify as part of the implementation process, like benefit-cost analysis, benchmarking, flow-charting, the design of experiments, cost of quality, quality audits, inspection, control charts, Pareto diagrams, statistical sampling, flow-charting and trend analysis

1.1 Background

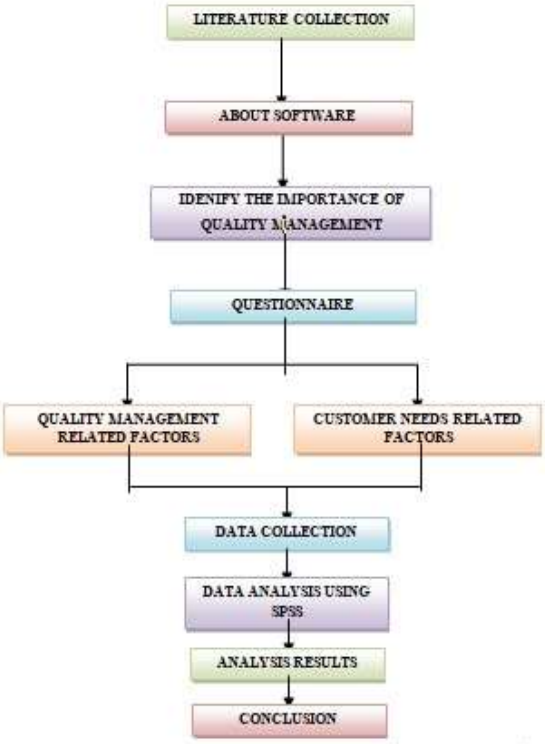
During the last decade's construction industry has been heavily criticized for its performance and productivity in relation to other industries. With the turn of the new millennium, it appears that the construction industry is going through an intense

period of introspection, which is exacerbated by increased technological and social change. These changes are altering the tempo of the environment within which construction operates. Moreover, such changes extensively affect the way business is carried. No organization operating in the construction industry, whether large or small, private or public, can afford to ignore its changing environments if it is to survive. The construction industry shows a rapid pace in the 21st century. Construction companies have recognized something new; the culture of quality. They have opened their doors to Quality Management Systems (QMS).

1.2 Objective of Study

- To study the quality measures in the maintain their existences in the construction industry.
- To find the most affecting factor to the quality management system.
- To identify the most crucial factor which affects Quality Management System and Provides reliability for the reputation of firms.
- To generate matrix models to evaluate the success of QMS.
- To improve quality and productivity by generating matrix as per mentation and customers feedback

2. METHODOLOGY



A detailed literature review was carried out to collect the information about the objectives of this study by considering construction practitioners in various locations. Through the literature review helped to establish the research topic in detail and general. The construction quality management considered for this research includes categories are JIT delivery, Material handling, Records maintenance, Inventory control, Inspection Procedures, Quality Tool earth

3. SPSS SOFTWARE

Statistics is generally understood as the subject dealing with number and data, more broadly it involves activities such as collection of data from survey or experiment, summarization or management of data, presentation of results in a convincing format, analysis of data or drawing valid inferences from findings. Whereas Bio-Statistics is science which helps us in managing medical data with application of statistical methods/techniques/tools or a collection of statistical procedures particularly well-suited to the analysis of healthcare-related data

4. FACTORS' INFLUENCING QUALITY MANAGEMENT SYSTEM

The owner/operation should provide a definition of the records to be provided. Records should be controlled in conformance with the owner/operator's specifications and as applicable, the owner/operator's procedures. Controls and responsibilities should be defined for:

- Identification,
- Collection,
- Storage,
- Protection,
- Retrieval,
- Retention time, and

- Disposition of records.

Records should be retained in accordance with the operator's specifications, operating procedures, and applicable regulatory requirements.

5. CONCLUSION

In the construction industry, there are more companies attempting to adopt quality as a tool for continuous improvement. The root causes of inefficiency in the quality management should be considered. The low level of construction quality is mainly caused by the result-oriented quality management due to the fact that quality problems can be detected only after they occur. Also, few systems provide the quality managers with the numerical objectives or tangible goals. The paper examines the quality and its constituent attributes from three perspectives: clients, constructor and third party. Trough a bi-directional ranking system of the importance level of quality attributes, the views of the three parties is identified. It is determined that some of the construction firms are operating QMS and no way of measuring the effectiveness of these systems has been developed apart from their perceptions. The efficiency of the quality management is identified by measuring and analyzing quality cost on site. The Quality Cost Ratio (QCR) is calculated to check the comparative value of quality cost using interim expenditure. To improve effectiveness in construction firms, it is an appropriate way to encourage contractors by new ideas for the motivation and support of staff established under the full support of the government. Through the quality performance management, managers will be able to improve the construction quality by monitoring the major indicators of construction project success and ultimately increase the competitiveness of the overall construction organization.

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