

Application of “TQM” and “TSM” in UAE Construction Safety Management

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Abstract

One of the chief goals of the construction industry is to maintain a safe environment at construction sites, a goal best achieved by implementing Quality Management. Deming's Total Quality Management (TQM) tools serve as an excellent option when it comes to efficiently using available resources to improve construction management at the site. Various accidents in the construction sites, however, may still occur, leading to loss of lives, delays and increasing project cost. Thus, an effective safety management system should be enforced to mitigate these accidents so as to reduce delay, cost and most importantly, prevent harmful accidents. A combination of TQM and Total Safety Management (TSM) ranks as one of the best available practices that establish a safe environment at the construction sites. In this paper, a survey has been designed, conducted and analysed in order to solicit feedback from 61 engineers working in various construction companies and organizations in the UAE. Two construction processes that necessitate safety management are studied: safety of tower cranes and temporary formwork. The interrelationship between safety, quality, and reliability is also discussed along with the various causes of failure. The results of the survey reveal that the majority of the survey participants had implemented routine safety and health procedures to avoid accidents. The number of accidents, however, was still inordinately high due to top management pressurizing middle managers into completing construction goals within a designated time period

Keywords

Safety management; Construction industry; Total safety management; Total quality management

Introduction

Many Middle Eastern countries place more emphasis on flaunting their high-rise buildings; lengthy bridges and massive airports than the safety of their labour force. Fatal accidents and failures during different stages of construction are prevalent;

leading to major injuries and death. Often times; the investors and government sectors continue developing construction projects even when all construction projects are not providing a safe area for their employees and end-users. While investors and construction companies worldwide must concentrate on the cost and duration of the project to maximize their profits; they must also ensure the implementation of proper safety procedures for their workers; labour and engineers on site. Although all construction companies strive towards high quality products and services; they must also apply total quality safety management at their construction sites. A common problem at construction sites is the numerous objectives set by different departments in the project, with managers and engineers struggling with myriad deadlines and goals, thus neglecting the importance of safety. Implementing Deming's and Peterson's points might have a positive effect on the organization's work area since it reduces the number of accidents on site.

It is not uncommon for construction companies to underestimate the need of a safety plan prior to starting a project. To guarantee a positive safety performance through all stages of the project it is essential to plan exactly how a safe work area will be provided. Planning is critical for construction safety and setting a goal will help familiarize the safety management department with each project's strategic plan; thereby resulting in the identification of safety objectives. In fact; the safety management department should have safety plans for all stages of construction so as to predict all potential failures that may occur during the entire project. TQM is a management philosophy and its goal is to align an organization's product and service quality with customer satisfaction through proper planning and continuous improvement.

Research Methodology

The survey in this research was designed based on questions covering the Deming's fourteen points on (TQM) and Peterson's theory on (TSM) concept. The information gathered from these points helped define the targeted respondents' objectives and goals of the study. The analysis of the survey will reveal

who is more liable for fatal accidents in the construction sites. Implementing some of the Deming's fourteen points augments the quality of the work environment and provides a safer work area in any construction projects. The design of the survey is conducted to ascertain whether different companies are implementing these points to remain committed towards procedures that help define the safety roles and responsibilities for all the organization employees. The questionnaires posed seven questions designed as a rating scale where the strongly agree; agree; neither agree nor disagree; disagree; and strongly disagree options were rated as 5; 4; 3; 2 and 1; respectively. The questionnaire was reviewed three times to make sure that all the questions are clear; straight forward; and easily answerable. Some respondents were concerned about the safety and reliability in case of accidents; and asked the researcher to provide them with the result of the study at its completion

Conclusions

Based on this study; it can be argued that virtually all personnel avoid responsibility for accidents and failures; opting instead to blame others. The result of the survey demonstrates how people will react in the case of a real accident. Engineers try to blame each other and none of them will accept that it was his/her mistake. As such; there should be a clear statement identifying the responsibility of all engineers/managers involved in the project; thereby preventing such blame juggling. In addition; this would make the work site safer because

Accountability makes the staff thorough and responsible when undertaking an assigned task. A major point according to Peterson's

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