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Defining Quality in Construction Industry

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Abstract: *Quality is a word with many implications depending upon the business. It is thus not possible to phrase an exclusive definition for the term quality. During recent years the significance of quality management approach for business enhancement has been agreed and applied by many industries. Successful implementation of various such methods was possible having that the sense of quality was appropriately defined. However such approaches have been far away from been practiced in the construction industry. The unique character of the industry being the reason. Besides quality have different perspectives in the construction industry itself. Thus an attempt has been made to highlight the various perspectives of Quality with respect to the construction industry.*

Keywords: *Quality, Construction Industry, Quality Management.*

I. INTRODUCTION

The construction industry is often criticized for its poor performance, low safety and poor work quality, wasteful, inefficient, and low productivity. Insufficient planning, project mismanagement, and poor craftsmanship contribute to poor quality performance. Many studies have urged managers in the sector to understand the relationship between quality management and performance. This calls for a need in the construction industry for quality management strategies and quality improvement program to improve work quality and to enhance performance.

The recent trend of adopting quality management strategies to improve work quality has benefited many industries. The requisite for application of quality management strategies is the character of the industry and the desired product output. For example manufacturing industry being the most prominent in adopting quality management principles could do so because of its self-contained, clearly defined, recurring processes involved. The final product has a set of certain desired specifications which if effectively met along with some other variables such as time, cost etc. within the spareable limits signifies successful implementation of the quality program.

But when it comes to construction industry the story completely changes. The features of the construction industry are quite unique. The main obstruction to management system implementation is the nature of the construction process: the projects are often very large, labour intensive and rarely situated in the same location; the workforce tends to be temporary; the demand fluctuates, subject to the client's perception. The nature of the industry is complex with several participants involved, each with their own perspective and interest. The various complexities involved makes it difficult to precisely define "quality" with respect to the construction industry. In our study, an attempt has been made to comprehend the definition of quality.

II. METHODOLOGY

In order to obtain more information about quality, and more specifically, quality performance measures used by contractors in the local construction industry 24 open-ended interviews were taken along with questionnaire survey. The study population

involved private contractors, builders, structural/ executive/site engineers and material suppliers. Questions about present work practices, contractors’ opinion about quality, customers’ opinion and expectations etc. were asked.

III. RESULTS AND DISCUSSION

In order to obtain more information about quality, and more specifically, quality performance measures used by contractors in the local construction industry, open interviews were taken with the respondents which represent the construction industry of India. Their responses are vital as they represent the actual scenario of the industry in the country.

83% of the interview respondents indicated that the primary measure of quality performance in the construction industry was a contractor’s reputation on the street or the satisfaction expressed by customers (20/24 respondents). The perceptions of how the construction industry could improve its quality performance varied from education and training to stronger pre-qualification and bonding criteria. According to contractors, quality is most often measured through customer satisfaction. The best way to improve quality is through education and training and the biggest barrier to quality is personnel.

Definition of quality	Response %
Do not use a definition of quality, or not applicable to our work	0
Looks good, works good, or proud to be called as the company's product	15
Meets customers' requirements	45
Meets design or code requirements, minimum callbacks or rework needed	20
Able to guarantee that the product will not fail to perform	20
Total	100

Table I Contractors Opinion About Quality

Question	Responses	Number of respondents
How to measure quality performance?	Reputation or customer satisfaction	23
	Getting continued business or new work	20
	Formal quality programs	0
	Construction favors low bid, thus not possible	21
How to improve quality performance	Education and training	5
	Assessment of work or product for flaws	3
	Better craftsmanship	24
	Improved management-employees relations	10
Barriers to quality	Workers' attitude	15
	Lack of skilled workers	8
	Lack of proper equipment	15
	Lack of supervision	3
	Working with new people	2
	Unrealistic deadlines	17
	Final effect on structures' performance	22

Contractors’ own perceptions of quality and customer satisfaction are the aspects most often associated with quality. Meeting design codes and warranties are considered yet less important. Results show that employee involvement, commitment from the management, a skilled workforce and good communication are considered important characteristics for improving.

The deciding control is with the decision makers. Thus it can be said that quality implications in a particular firm are completely in the hands of the owner, he can set a benchmark which would then be considered as a competing factor. Others, in order to complete in the market, will eventually have to provide a work output above the set benchmark.

Table II shows various implications of “quality” and the respondents in percentage agreeing with the comment.

Table II. Defining quality

Respondents were asked to highlight the factors that would help to achieve quality work output. The responses are tabulated below.

Table III Elements that are important and that are effective for quality work performance.

	Important %	Effective %
Training and education of both management and employees	65	75
Clearly defined guidelines for customer satisfaction	75	55
Means and methods for ensuring continuous improvement	20	45
Clearly defined goals for quality work performance	15	85
Measures for collecting and tracking data for ensuring quality objectives	15	87
A review/analysis process for identifying errors in the system	10	25

It was observed that even if provided with an opportunity the employees of the company would never be interested to get involved in any formal quality improvement training. It for was an obvious reason, that the employees especially when we talk about the Indian scenario had their families to feed and the period of training would earn them nothing. But even if compensated for the training period the response remained quiet the same as no group of employees were working permanently with a particular company. Their working tenure was transient up till the project completion period. Till today, no formal quality training program exists in most of the companies. Suppliers and subcontractors are rarely involved.

It was interesting to see that officials do understand the benefits of quality improvement. More repeated customers, reduced rework, improved safety and improved job satisfaction are considered important benefits, schedule performance, and relationships with subcontractors, process, and reduced change orders are considered less important. According to contractors, the two most important barriers to quality improvement in construction are the lack of skilled workers and the low bid mindset in awarding contracts.

CONCLUSIONS

Every person in the construction industry has his own perception about quality. This perception is primarily based one’s role in the construction process. Most of the time the decision makers and the customer are the ones who set an implication for quality rather than the executive staff. Thus it is difficult to have an exclusive definition for quality. It is, therefore, difficult to quantify quality. Customer satisfaction is an obvious outcome measure of quality but most of the time, this measure is not adequately quantified in construction. More repeated customers, reduced rework, improved safety are taken as positive measures of good quality performance.

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