

Factor Affecting Quality Management in Construction Industry

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Abstract: *Construction industry plays a important role in the development of country. The development of construction depends on the quality of construction of projects. This research is carried out to examine the factors that have adverse effect on the construction project. A questionnaire was developed based on identified factors that are taken based on past literatures to take opinion from construction experts. The survey was conducted at various sites to collect all required data for assessment of factors affecting the quality of construction. After the feedback from construction experts, the analysis is done by using important index technique. By this analysis most significant factors that affect quality in construction can be ranked. These ranked factors can be improved to attempt good quality in construction.*

Keywords: Quality, quality management, factors affecting

1. Introduction

Construction companies have to improve their competitiveness continuously in order to achieve success in the market and it is possible mainly through better performance of construction project to deal with quality issue and fulfill the requirement of the client has progressively been recovered by construction organization by grasping quality management.

Design and construction are two important phases of project lifecycle which affect the quality outcome of project. More than 90% of failure depend on both the factors these factors are called critical project success factor in this paper the factors affecting the quality performance of construction project is studied.

2. Objectives

Objective of project are:

Determine the major factors that will affect the quality of construction project particularly in execution phase.

3. Methodology

The methodology of the study was thorough literature reviews which were conducted to identify the factors that affect quality as recognized by researchers and practitioners in this field. Many literature papers were studied. The life-cycle phase of building projects consists of construction phase. In construction phase the factors that affect quality were identified and studied. So questionnaires were designed and administered to the groups of respondents namely consultants and contractors. The surveys were conducted on various sites as to collect data for factors affecting the quality. And based on the collected data the following factors were identified which affect the quality

- Management factors
- Conformance to Codes and Standards

- Financial issue
- Selection of sub-contractor
- Material
- Labour
- Equipment
- Lack of communication
- Lack of training for staff
- High level of competition
- Planning and control technique
- Selection of designer
- Co-operation of parties
- Contract document
- Time factor
- Productivity
- Environmental factor

After finding the factors relative important index method is used to rank these factors as per their degree of importance. The following steps were carried out in this paper. These are as follows

- After title conformation relevant literatures were collected.
- Framing the questionnaires based on the analysis from literature review.
- Conduct the questionnaire survey on various sites.
- Ranking is done by using RII.



4. Relative Importance Index technique

The six-point scale ranged from 0 (not important) to 5 (extremely important) were adopted and transformed to relative importance indices. The RII was used to rank (R) the different factors which affect the quality of construction. These rankings made it possible to cross-compare the relative importance of the factors as perceived by the two groups of respondent's i.e. private firm and government organization. The quality of construction industry.

The RII was computed as follow:

$$RII = \frac{\sum W}{A * N}$$

Where,

- RII - Relative Importance Index,
- W = weighting given to each factor by the respondents (ranging from 0 to 5)
- A = highest weight (i.e. 5)
- N = total number of respondents

5. Result

It illustrates the top significant factors affecting the performance of quality of construction projects. It can be inferred from the Table that most important factors according to the perception group of respondents are Management Commitment, Material, Labor, Financial Issue and Planning and Control Technique. It seems that Management Commitment has been ranked in first position among all the factors with RII equal to 0.82. Material and Labor factor has been placed at second and third position with RII equal to 0.8 and 0.76 respectively. Financial Issue, Equipment and Planning and Control Technique has been ranked in fourth, fifth and sixth position with RII equal to 0.71, 0.7 and 0.67 respectively. Conformance To Codes and Standards, Lack of Communication and Lack of Training for Staff has been placed in seventh, eighth and ninth position with RII factor equal to 0.66, 0.62 and 0.6 respectively. Selection of Sub-Contractor, Productivity and Time Factor has been ranked in tenth, eleventh and twelfth position respectively with RII equal to 0.59, 0.58 and 0.58 respectively. Following to the above factors Selection of Designer, Co-Operation of Parties and Contract Document has been ranked at thirteenth, fourteenth and fifteenth position with RII equal to 0.57, 0.54 and 0.52 respectively. Environmental Factor and high level of competition has been ranked at sixteenth and seventeenth position with RII factor equal to 0.47 and 0.46 respectively.

Factors	Responses (Ranking)						Total (N)	ΣW	RII	Rank
	0	1	2	3	4	5				
Management Commitment	0	1	6	9	20	31	67	275	0.82	1
Conformance To Codes And Standards	0	4	11	23	20	9	67	220	0.66	7
Financial Issue	0	6	4	22	15	20	67	240	0.71	4
Selection of Sub-Contractor	0	3	19	30	10	5	67	196	0.59	10
Material	0	3	4	5	34	21	67	267	0.78	2
Labor	0	1	9	8	36	13	67	252	0.76	3
Equipment	1	4	7	27	16	12	67	223	0.67	6
Lack Of Communication	3	1	12	29	13	9	67	209	0.62	8
Lack Of Training For Staff	0	4	17	26	14	6	67	202	0.60	9
High Level Of Competition	3	17	20	18	5	4	67	151	0.45	17
Planning And Control Technique	0	3	8	22	22	12	67	233	0.7	5
Selection Of Designer	1	6	21	19	15	5	67	190	0.57	13
Co-Operation Of Parties	3	6	21	19	13	5	67	182	0.54	14
Contract Document	4	13	14	20	6	10	67	175	0.52	15
Time Factor	1	5	25	16	12	8	67	191	0.58	12
Productivity	1	7	16	25	10	8	67	194	0.58	11
Environmental Factor	2	15	27	11	7	5	67	155	0.47	16

6. Conclusion

Project performance is not just the concerned of clients, contractors and consultant but other stake holder including end users. The study has clearly established the fact that most of the factors affecting the effective project of quality management. The work presented in the paper has focus on the factors are ranked by RII. According to the importance of factor quality of work can be enhanced.

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