CRITICAL CAUSES OF CONTRACTOR'S FAILURE IN INDIAN CONSTRUCTION INDUSTRY

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Abstract— This research discusses the main causes of contractor's failure in Indian construction industry. The objective of this research has been achieved by means of questionnaire survey. The survey included 59 factors they were collected through various literature review and they were listed below 6 main groups namely administration, financial, environmental, expansion, construction and political. Five point Ordinal scale was used in the questionnaire. The questionnaire included fifty nine questions distributed to ninety construction companies. Seventy three questionnaires from which received and analyzed to determine the severity of each factor affecting contractor's failure. The statistical analysis was done using SPSS 15 to determine critical factors of a company failure. Reliability test has been done to identify the consistency of the questionnaire survey. Quantitative statistical analysis for questionnaire was done to rank the severity of causes of contractor's failure in Indian construction industry. The opinions of contractors regarding the severity of each cause are to be checked by Analysis of Variance Post hoc test. Case study has been conducted for projects to validate the severity of critical factors so identified according to the actual performance.

Keywords - Contractor's failure, Questionnaire Survey, Statistical Analysis, Analysis of Variance.

1. INTRODUCTION

The construction business is large in size and significant in the role it plays in the economy of the nation but through recent years it has witnessed an increasing number of construction financial failures. The failure of a company may cause extensive losses to the business community and also to society. In particular, it may affect various stakeholders, such as investors, creditors, shareholders or employees.

Construction is always an extremely competitive business. That fact is not limited to territory or project type. With limited local opportunities available to some contractors, expanding beyond their territory or normal scope of work becomes attractive, but that injects additional risks. There are large numbers of contractor's it's easy to establish a new firm. The construction industry attracts many people because of their belief of high profit, but when they enter the business, they will feel the difficulty and complexity of it. A number of studies have been conducted to address and control the industry's problems in the developing countries. However, lack of progress was noted in solving such problems due to many reasons. The aim of this paper is to explore the causes of contractor's business failure and to investigate the impact level of these causes from the contractor viewpoint.

2. LITERATURE REVIEW

A number of researchers had studied the causes of contracting business failure.

According to Adnan Enshassi et al (2011) the main causes of business failure are delay in collecting debt from clients (donors), border closure, heavy dependence on bank loans and payment of high interest on these loans, lack of capital, absence of industry regulations, low profit margin due to high competition, awarding contracts by client to the lowest bidder, and lack of experience in contract management.

Ibrahim Mahamid et al (2011) say that there are three main factors namely financial, managerial, and external. The identified factors are ranked according to their importance as assessed by the respondents. The findings reveal that the top five affecting factors are: fluctuation in construction material cost, delay in collecting dibs from clients, lack of experience in contracts, low margin of profit due to competition.

Kivrak et al (2008) examined the critical factors causing the failure of construction companies through a survey conducted among 40 small to medium-sized Turkish construction companies. A lack of business experience and country's economic conditions were found to be the most influential factors to company failure.

Horta et al (2013) proposed a new model to predict company failure in the construction industry. The model includes three major innovative aspects. The use of strategic variables reflecting the key specificities of construction companies, which are critical to explain company failure.

Hamimah Adnan et al (Dec 2011) says that the most common unethical conduct evidenced by the contractors are cover pricing, bid cutting, poor documentation, late and short payments, subcontractors' lack of safety ethics, unfair treatment of contractors in tender/final account negotiations, competitors' overstatement of capacity and qualifications to secure work, competitors' falsification of experience and qualifications and bureaucratic, government policy.

Jacob Phaladi et al (2009) revealed that the problems faced by small contractors are as follows; Government not paying on time, lack of capital and difficulty in arranging guarantees, lack of technical skills, lack of business management skills. The importance of small contractors in South Africa has been recognized by many researchers and policy makers.

Azlan Shah Ali et al (2010) says that the delay in construction projects is a situation where the project cannot be completed under the planned time. It is a common issue faced in the construction industry all over the world especially in developing countries. The data collected was analyzed using SPSS software. Seven factors that contribute to delay were identified through literature review, namely contractors‟ financial difficulties, construction mistakes and defective work, labor shortage, coordination problems, shortage of tools and equipment, material shortage and poor site management. The three most important factors were found to be labor shortage, contractors‟ financial difficulties and construction mistakes and defective works.

3. OBJECTIVES OF THE STUDY

The main objective of the study is

- To assess the recent trend of contractor's failure in the Indian construction industry and critical causes which are affecting them.
- Further to suggest suitable recommendations to the contractor to overcome their failure based on the analysis and validating through case study.

4. METHODOLOGY

This research discusses the main causes of contractor's failure in Indian construction industry. The objective of this research has been achieved by means of questionnaire survey. The questionnaire was divided into two main areas: the first area contains the general information about the organization and the details of the respondents and the second area contains was the factors that causes contractors failure.

The survey included 59 factors they were collected through various literature review and they were listed below 6 main groups namely administration, financial, environment, expansion, construction and political. Five point Ordinal scale was used in the questionnaire 5 representing very low impact, 4 representing low impact, 3 representing moderate impact, 2 representing high impact and 1 representing very high impact. The questionnaire included fifty nine questions distributed to ninety construction companies.

The statistical analysis was done using SPSS 15 to determine critical factors of a company failure. Reliability test has been done to identify the consistency of the questionnaire survey. Quantitative statistical analysis for questionnaire was done to rank the severity of causes of contractor's failure in Indian construction industry. The opinions of contractors regarding the severity of each cause are to be checked by Analysis of Variance in the Post hoc test. Case study has been conducted for projects to validate the severity of critical factors so identified according to the actual performance.

5. ANALYSIS AND DISCUSSION

After the data collection from seventy three respondents the data was analyzed to determine the severity of each factor affecting contractor's failure.

5.1 RELIABILITY ANALYSIS

Cronbach's alpha is used here to measure the reliability of the questionnaire between each field. Cronbach's coefficient alpha (George and Mallery, 2003) is designed as a measure of internal consistency. The normal range of Cronbach's coefficient alpha value is between 0.0 and + 1.0. The Reliability Analysis results are listed in the Table.5.1.

TABLE.5.1.RELIABILITY ANALYSIS

S.no	Main Groups	Cronbach's Alpha Values
1	Administration causes	0.755
2	Financial causes	0.759
3	Environmental causes	0.625
4	Expansion causes	0.660
5	Construction causes	0.615
6	Political causes	0.633
7	Over all	0.911

The overall Cronbach's alpha value is found to be 0.911 hence the data considered in the questionnaire is valid.

5.2 QUANTITATIVE STATISTICAL ANALYSIS

Quantitative statistical analysis was carried out to find the mean of each factor. The mean values below two are taken as critical factors because the value 1 and 2 in ordinal scale was very high impact and high impact respectively. So the mean values less or equal to 2 are considered as critical factors. The factors so identified as critical are given in Table.5.2.

TABLE.5.2.DESCRIPTIVE STATISTICAL ANALYSIS

S.no	Factors	Mean
A1	Lack of experience in line of work (construction)	2.00
A3	Assigning incompetent project leader at the site	1.87
A5	Lack of Labor productivity and improvement	1.50
A15	Not completing on schedule	1.51
A16	Lack of material control systems	1.93
F1	Low profit margin due to competition	2.00
F8	High and unstable Inflation	1.50
F12	Delay in collecting payments	1.52
EN2	Poor tendering/selection procedure	1.58
EN4	Weak construction industry regulations in India	1.56
EN5	Award of contract to lowest bidder	1.51
EX5	Change in the type of work	1.47

EX7	Change from private to public or vice versa	1.64
C1	Wastage of materials in site	1.87
C2	Construction deficiencies	1.91
C3	Rework	1.58
C4	Lack of inspection	1.94
C9	Change in material specification	1.62
P1	Delay in collecting debts from new political heads	1.63
P2	Suspension of projects of previous government	1.54
P3	Change in government policies	1.63
P6	Nonpayment of interest on delayed certificate	1.67

This result was supported by the results of Arditi et al (2000) in their study that the organizational, financial, environmental, expansion factors represents 17.14%, 56.82, 20.01%, 0.15% of construction business failure respectively.

5.3 ANALYSIS OF VARIANCE

The opinions of contractors regarding the severity of each cause are to be checked by Analysis of Variance. The one way ANOVA analysis was carried based on different background information's respondents.

5.3.1 RESPONDENTS

One way ANOVA Post hoc test was done between the groups of the respondents. Two factors were identified with less than 5% significance is shown in Table.5.3.

TABLE.5.3.RESPONDENTS

S.no	Factors	Sig
1	Owner involvement in construction phase	0.04
2	Opening a regional office	0.00

The factor viewed differently by the Contractor's is Owners involvement in Construction phase. Project manager views are different in the factor called Opening a regional office.

5.3.2 NUMBER OF PROJECTS HANDLED

The results of the ANOVA for the number of projects handled are shown in Table.5.4. Thirteen factors were identified with less than 5% significance.

TABLE.5.4.NUMBER OF PROJECTS HANDLED

S.no	Factors	Sig
1	Lack of using project management techniques	.011
2	Lack of Labor productivity and improvement	.001
3	Delayed submissions of claims	.002
4	Owner absence from the company	.000
5	Not completing on schedule	.011
6	High and unstable Inflation	.001
7	No Cash flow management system	.011
8	No Employee benefits and compensation	.002
9	Lack of book keeping systems	.000
10	Delay in collecting payments	.011
11	Award of contract to lowest bidder	.011
12	Opening a regional office	.016
13	Change in the type of work	.015

The factors viewed differently by the respondents with less than 30 projects in 5 years are Lack of using project management techniques, Lack of Labor productivity and improvement, Delayed submissions of claims, Owner absence from the company, not completing on schedule.

The factors viewed differently by the respondents with less than 20 projects in 5 years are No Cash flow management system, No Employee benefits and compensation, Lack of book keeping systems, Delay in collecting payments, Award of contract to lowest bidder, Opening a regional office

The factors viewed differently by the respondents with less than 10 projects in 5 years are high and unstable Inflation and Change in the type of work.

5.3.3 TOTAL EXPERIENCE

The results of the ANOVA for total experience in construction field are shown in the Table.5.5. Five factors were identified with less than 5 % significance.

TABLE.5.5.TOTAL EXPERIENCE

S.no	Factors	Sig
1	Delayed submissions of claims	0.026
2	Increased number of projects	0.029
3	Opening a regional office	0.031
4	No Employee benefits and compensation	0.035
5	Change in the type of work	0.020

The factors viewed differently by the respondents have greater than 10 years of experience are delayed submissions of claims, increased number of projects and No Employee benefits and compensation.

The factors viewed differently by the respondents have less than 10 years of experience are Opening a regional office and Change in the type of work.

6. CONCLUSIONS AND RECOMMENDATIONS

The results of analyzing fifty nine causes of failure showed that main causes of contractor's failure are Poor tendering/selection procedure, Weak construction industry regulations in India, Award of contract to lowest bidder, Lack of Labor productivity and improvement, Assigning incompetent project leader at the site, Lack of experience in line of work (construction),Not completing on schedule, Lack of material control systems, Low profit margin due to competition, High and unstable Inflation, Delay in collecting payment, Change in the type of work, Wastage of materials in site, Construction deficiencies, Rework, Lack of inspection, Delay in collecting debts from new political heads, Suspension of projects of previous government, Change in government policies. Case study has been conducted for two different projects to identify the severity of critical factors according to their experience.

The results of the case study recommends the contractors to react according to the political and environmental changes, assign the proficient project leader at site to avoid delay, wastages and rework, award contract to the capable sub contractors, improve the practice of calculating the project cost, to establish a system for motivating labors and to take the contract at reasonable cost.

This study also recommends the contractors to preplan the activities according to the critical factors before the commencement of the project and to become a successful contractor in the industry. This study has to be updated for every five years to identify the recent causes of contractor's failure in Indian Construction Industry.

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