

Assessment The Scenarios Regarding Termination of Construction Contracts In India

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Abstract- Construction contracts are one of the high risky contracts because of its unique features such as long period, complicated processes, unexpected environment, financial intensity and dynamic organization structures. The major objective of this research was to identify the factors affecting the construction contracts termination, impacts of termination in India, relationship between number of contracts where terminating factors arise & number of terminated contracts and study whether contracting firms win any contract from the same client due to termination at earlier. This research relied mainly on analytical, descriptive and field study methodologies. And the questionnaire was designed in the light of the literature review on a sample of ten contracting companies in India. In this study five factors like managerial, financial, political, environmental & project characteristic mentioned which affects the termination of construction contracts. The consequences of termination of contracts had classified here as external & internal. Relative Importance Index (RII) method, Wilcoxon Signed-rank Test & Spearman's rank order correlation coefficient method were used in this study. The collected data is manipulated by Ms Excel.

Keywords- Construction contracts termination

I. INTRODUCTION

In spite of huge opportunities for the construction organizations of the country, only a small number of organizations will succeed and establish its existence. The basic reason for the failure of many numbers of construction organizations is selection of inappropriate projects for execution which leads to disputes and termination in contract thereafter. Contracts are made to be performed by the responsible parties. When parties enter in to a contract, they have to perform it as expected by its' terms. Indeed, a contract consists of a number of terms which determine the scope of the performance obligations, which the parties have accepted. A failure to perform in accordance with these terms is a breach of contract, which will entitle the other party to have an appropriate remedy based on the contract. Termination of construction projects often results in many problems like

claims, disputes and issues to project stakeholders. Therefore, the decision to proceed with that option should not be taken lightly. Termination of a project is inevitable, but the way of termination will incur long lasting impact on the project stakeholders which cannot be predicted. The success of future projects may depend on not only the success of past ones but also on how unsuccessful projects were treated by the organization and its stakeholders (Amir *et al.*, 2000).

Therefore as a developing country, it is essential to avoid terminations in Indian construction projects to drive towards more developed and sustainable construction industry. For the purpose it is useful to study what are the factors & consequences of terminations of construction contracts in India and use them as lessons for future projects.

In this study three factors that affect termination of construction contracts were selected as mentioned below:

- Financial factors
- Political factors
- Managerial factors
- Project characteristic factors
- Environmental factors

In this study consequences of terminations of construction contracts are divided in two ways

- Internal consequences
- External consequences

II. OBJECTIVE OF THE STUDY

The main objectives of this study were as follows,

- Identify & ranking the factors affecting the construction contracts termination in India
- Identify & ranking the consequences after construction contracts termination in India

- Study the relationship between number of contracts where terminating factors arise & number of terminated contracts
- Study whether there is any effect about contracting firm's win any contract from the same client due to termination at earlier

III. LITERATURE REVIEW

The termination of a contract results in its end and neither party is required to continue performance under it. However, once the contract is terminated, the parties may still be entitled to damages based on the termination. The nature and amount of these damages depends, again, on the way termination is treated in the construction contract (Wittbrodt et al., 2009).

It is vitally important that contractors and owners understand when and how a termination can legally occur and how to handle such termination threats (Brumback, M., 2006).

A. Factors affecting termination in construction contracts

In accordance with Interface Construction Consultancy (2009), in a termination for convenience, the owner may terminate the contract for whatever reason such as economic/business reasons, or as the most expeditious way of eliminating a non-performing Contractor with minimum risk of a legal dispute.

Cause for termination may occur when the owner believes the Contractor has not performed according to its contractual obligations and thus has materially breached the agreement.

In most recent research, Arulnesan (2010) has presented that how and what disputes are mostly affected toward the project termination. The most common classification of type of disputes that have been seen in contractual relationship is summarized as follows,

- Relationships and people's conflict in the industry
- Financial matters (claims & payments)
- Standard of the workmanship (design & manual works)
- Time related disputes

Dey (2001) in his paper analyzes the key problems faced by project management professionals in terminating projects in Indian Industry. The paper shows that negotiating claims with clients, compliance of statutory requirements,

receipt of the final installment of payment, performance guarantee tests, and handling claims of suppliers are the key problems faced by the project managers in India in terminating projects. Enshassi et al. (2006) in their paper explore the causes of contractor's business failure in Palestine, and investigate their severity from the contractor's point of view. The study's results shows that 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.

B. Consequences after construction contracts termination

Hormozi, McMinn, and Okeleke (2000) stated that, organizing for a project's termination process is especially important when it has failed, because of the lasting impact on future projects as well as the organization's image. Including project team members to the termination process will increase their loyalty and commitment, not only to the organization but also to the success of future projects. In addition, Bommerand Pease (1991) showed that although the reasons may vary, the impact is frequently the same. Project cancellation can affect employee productivity, the reputation of the firm and the value of the firm's stock. In Sri Lanka, Silva *et al.* (2005) states that the construction industry is a major contributor to the development of economy contributing around nine percent (9%) to the Gross Domestic Product of the country. Due to this fact construction industry plays one of major role as a key component of the economy. Improving construction capacity and capability is important to most developing countries (Yogeswaran, 2004). However, premature termination of construction projects/ contracts effects country's economic growth badly by reducing construction capacity and capability.

IV. RESEARCH METHODOLOGY

A. Sample Size & Data Collection

Several surveys were conducted to reach the solution of the study objective. 17 respondents pertaining experience from five to fifteen years, from 3 construction firms, head office based at Gurgaon, Ahmadabad and Bhopal were randomly selected for the study.

Data was collected for the study in one way, i.e. primary data. Primary data collected through the distribution of questionnaires via electronic mails, telephonic discussions, personnel meetings.

B. Data Analysis

Relative Importance Index (RII) method for ranking of factors, Spearman’s rank order correlation coefficient for measure of association between two variables & Wilcoxon Signed Rank Test was used to measure the result of two paired samples after the experimentation.

C. Hypothesis

In the words of Leedy and Ormrod (2005), a hypothesis is a logical supposition, a reasonable guess or an educated conjecture. It is a speculation on how the study will turn out. The following are the four hypotheses tested in this study;

Hypothesis 1 (H1): There is a positive relationship between “number of contracts where terminating factors arise” & “number of terminated contracts”

Hypothesis 2 (H2): There is no difference in the project contract win by the firm because of termination of contracts earlier with the same client

V. DATA ANALYSIS

A. Relative Importance Index (RII) Method for ranking the factors & consequences.

1) *Factors affecting termination in construction contracts:* As previously mentioned objectives were to examine the factors that affect termination of construction contracts. 17 respondents randomly selected from 3 construction firms, employed in the department like contract, business development & pertained experience from 5 to 15 years. Total factors were chosen for the all five factors. The respondents were asked to give their perceptions using a five-point likert scale (from 1 for ‘very less important’, 2 for less important, 3 for moderate important, 4 for high important and 5 for very high important). The Relative Importance Index (RII) was calculated in Microsoft Excel using the following equation (Naoum, 1998; Assaf et al., 1999, 2001; Abdul-Hadi, 1999; Wanous et al., 2003):

$$\text{Relative Importance Index} = \frac{\sum W}{AN} = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{5N}$$

W = is the weight given to each factor by the respondents and ranges from 1 to 5.

n_1 = number of respondents for ‘very less important’, n_5 = number of respondents for ‘very high important’
 A = is the highest weight (i.e. 5 in this case) and;
 N = is the total number of respondents. (Here total number of respondents 17 Numbers)]

Total 61 factors were analysed using RII Method and ranked as shown in Table 1 to Table 7.

Managerial factors:

Table 1: Managerial factors that affect termination of construction contracts

Sl. No.	Factors	RII	Rank
1	Lack of experience, skill in the line of work	0.929	1
2	Neglect & unprofessionalism	0.870	2
3	Poor communication between involved parties	0.858	3
4	Resource management	0.858	3
5	Unclear goals & objective	0.835	4
6	Ability to put plans to work	0.800	5
7	Frauds & corruption	0.776	6
8	Company organization	0.765	7
9	Inaccurate quantities	0.753	8
10	Ability to work as a team	0.741	9
11	Ability to use computer in management	0.729	10

Financial factors:

Table 2: Financial factors that affect termination of construction contracts

Sl. No.	Factors	RII	Rank
1	Client or Contractors bankrupting or insolvent	0.941	1
2	Unmanaged cash flow	0.918	2
3	Low margin of profit due to competition	0.918	2
4	Lack of capital to invest	0.906	3
5	Difference of local currency exchange with contract currency	0.894	4
6	Client delay in the contractor financial payments	0.882	5
7	Cost and time organization i.e. cash flow and schedule	0.871	6
8	Evaluation of profit yearly	0.847	7
9	Material wastages	0.836	8

Political factors:

Table 3: Political factors that affect termination of construction contracts

Sl.No.	Factors	RII	Rank
1	Difficulty to get permits	0.941	1
2	Lack of resources	0.929	2
3	Increment of material prices	0.905	3
4	Closure	0.882	4
5	Internal political troubles; as: rebellion, civil war, or disorder	0.870	5
6	Lack of clear expectations	0.870	5
7	Change in regulatory problems	0.858	6
8	Banks policy	0.613	7
9	World inflation	0.607	8
10	Change in funding source	0.589	9

Project characteristic factors:

Table 4: Project characteristic factors that affect termination of construction contracts

Sl. No.	Factors	RII	Rank
1	Wrong cost estimation	0.918	1
2	Increase number of projects	0.882	2
3	Quality of work	0.870	3
4	Life cycle period	0.858	4
5	Wrong estimation for the total time of the project	0.858	4
6	Size & value	0.835	5
7	Change in overall project complexity	0.800	6
8	Project position	0.776	7
9	Change in the type of work	0.765	8
10	Increment of project size	0.753	9
11	Ability to negotiating claims with clients	0.741	10

Environmental factors:

Table 5: Environmental factors that affect termination of construction contracts

Sl.No.	Factors	RII	Rank
1	Working at dangerous geographical areas	0.941	1
2	Adverse climate conditions	0.929	2
3	Change in resources (people, materials, machinery, funds)	0.905	3
4	Acts of God	0.882	4
5	National slump in economy	0.870	5
6	Accounting and tax practices	0.870	5
7	Social environment	0.858	6
8	No specialized arbitrators to help settle fast	0.613	7
9	Fare of project position to company	0.607	8

2) Consequences after construction contracts termination contracts:

The consequences were divided into two ways

- External consequences
- Internal consequences

Table 6: External consequences after termination of construction contracts

Sl.No.	External Consequences	RII	Rank
1	Country's economic growth affected badly by reducing construction capacity and capability	0.882	1
2	Increase in unemployment in construction industry	0.858	2
3	Foreign investment in construction sector will be reduced	0.858	2
4	Infrastructure development of the country will be delayed	0.835	3
5	Modification in construction contract laws, dispute resolution techniques	0.800	4

Table 7: Internal consequences after termination of construction contracts

Sl.No.	Internal Consequences	RII	Rank
1	Reputation of the firm will be reduced	0.905	1
2	Affect badly of the contractor's financial capability	0.870	2
3	Client-contractor relationship will be changed, either good or bad	0.858	3
4	Reduction of value of the firm's stock	0.835	4
5	Development of dispute resolution techniques	0.800	5
6	Affect employee productivity	0.753	6

B. Hypothesis Testing

1) Null Hypothesis (H0): There is a positive relationship between “number of contracts where terminating factors arise” & “number of terminated contracts”

Here last 10 years data has been collected from five firms in India. Two types of variable data's collected such as; first one is “number of contracts where the factors affecting termination rose” & second one is “number of termination of contracts”. Now we find out rankings according to Spearman's rank order correlation coefficient method.

Table 8: Spearman’s rank order correlation coefficient table

Company	number of contracts where the terminating factors arise	number of terminated contracts	Rankings according to number of contracts where the terminating factors arise (R ₁)	Rankings according to number of terminated contracts (R ₂)	Difference R ₁ -R ₂ =d	d ²
Company A	16	3	2	2	0	0
Company B	21	2	4	1	3	9
Company C	13	4	1	3	-2	4
Company D	25	6	5	5	0	0
Company E	18	5	3	9	-1	1

Now, $\sum d^2 = 14$

Now, spearman’s rank correlation formula:

$$6\sum d^2$$

$r = 1 -$

$$n(n-1)$$

$r = 0.3$

So, accept null hypothesis (H₀).

But there is a low positive relationship between “numbers of contracts where the factors affecting termination rose” with “termination of construction contract”.

2) Null Hypothesis (H₀): There is no difference in the project contract win by the firm because of termination of contracts earlier with the same client

In this study the data of ‘termination of construction contract’ was taken from 5 years before & 5 years after of the termination of particular contract from 10 firms from A to J. The hypothesis was tested by Wilcoxon Signed-rank Test method. All collected data are represented in the following table:

Table 9: Contracts win by the company before & after the termination.

Company	A	B	C	D	E	F	G	H	I	J
Contract win before termination	5	7	1 0	4	8	7	6	1 1	5	9
Contract win after termination	6	9	7	6	5	8	5	9	7	6

Table 10: Calculate the positive and negative ranking of the contract win by the company before & after the termination.

Company	Contract win before termination	Contract win after termination	Difference	Absolute Difference	Rank of Absolute Difference	Negative Rank	Positive Rank
A	5	6	-1	1	2		2
B	7	9	2	2	6		6
C	10	7	-3	3	9.5	9.5	
D	4	6	2	2	6		6
E	8	5	-3	3	9.5	9.5	
F	7	8	1	1	2		2
G	6	5	-1	1	2	2	
H	11	9	-2	2	6	6	
I	5	7	2	2	6		6
J	4	6	2	2	6		6
					Total	27	28

T₊= Sum of positive rank = 28, T₋ = Sum of negative rank = 27

$$T = \min. (T_+, T_-) = 27$$

$$\mu_T = (n+1)/4 = 27.5$$

$$\sigma_T = \sqrt{(n(n+1)(2n+1))/24} = 9.810$$

The test statistic Z is written as; $Z = (T - \mu_T) / \sigma_T = (27 - 27.5) / 9.810 = -0.0509$

The critical value of Z at 5% level of significance ($\alpha = 0.05$) is 1.96

i.e. Absolute calculated value < Absolute critical value
-0.0509 < 1.96

So, Accept Null Hypothesis (H₀)

That means, there is no difference in the project contract win by the firm because of termination of contracts earlier with the same client

VI. CONCLUSIONS & RECOMMENDATIONS

The study has following major findings:

- Within Managerial factors, Lack of experience & skill in the line of work, Neglect & unprofessionalism, Poor communication between involved parties are the main factors affect the termination of construction contracts in India.
- Within Financial factors, Client or Contractors bankrupting or insolvent, unmanaged cash flow, Low margin of profit due to competition are the main factors affect the termination of construction contracts in India.
- Within Political factors, Difficulty to get permits, lack of resources, increment of material prices are the

main factors affect the termination of construction contracts in India.

- Within project characteristic factors, Wrong cost estimation, Increase number of projects, quality of work is the main factors affect the termination of construction contracts in India.
- Within Environmental factors, working at dangerous geographical areas, adverse climate conditions are the main factors affect the termination of construction contracts in India.
- Within External Consequences, Country's economic growth affected badly by reducing construction capacity and capability, Increase in unemployment in construction industry, Foreign investment in construction sector will be reduced.
- Within Internal Consequences, Reputation of the firm will be reduced, Affect badly of the contractor's financial capability, Client-contractor relationship will be changed, either good or bad, Reduction of value of the firm's stock, Development of dispute resolution techniques & Affect employee productivity.
- From hypothesis 1 (H1), it could be concluded that terminating factors arise in a contract doesn't mean that the contract will be terminated. Termination of contracts could be avoided by various ways.
- From hypothesis 2 (H2), it could be concluded that the relationship between contractors & client doesn't affect due to termination of contracts by the same client in some earlier days.

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