

FACTORS INFLUENCE FOR CONTRACTOR'S FAILURE IN RESIDENTIAL CONSTRUCTION PROJECT: A CASE OF 51 BUNGLOWS PROJECT IN BARDOLI CITY

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Abstract:With rapid growth and infrastructure development of India, Construction sector is also becoming very risky. What are the key reasons of contractor failure and his non-performance to commence the work. In this research author defined what are the various factor influences on the failure of the Contractor, to perform his allotted work within stipulated budget and time. His Non-performance and failure to complete the allotted work within time frame is due to poor specifications, Low margin profit due to competition, labour shortage, financial issues, etc. Based on the feedback of Interviews and pilot study subsequently a questionnaire has been designed and distribute to total 17 construction work experts who represent contractor, site engineer. The study limits of the area of Bardoli which is situated near Surat district of the South Gujarat region. The method which is used to analysis the responses by Important Index. Then ranking have been done to top 10 factors of contractor failure. Based on those factors the recommendations are given to improve the current practices.

Keywords: Contractor's failure, Factor of Contractor's failure, Project delivery, Quality, performance.

I. INTRODUCTION:

Construction is complicated business day by day its representatives face new challenges with changing working Conditions. We all know that in construction every project having unique site conditions and challenges so who are well experienced only can come out and solve their problems but others face many troubles and ultimately project can't complete with desired pre requisites. Public and private construction project owners can mitigate the risk of contractor failure by requiring bid, performance and payment bonds.Contractors failure usually is the result of multiple causes, contractors may default if there is finance change due to the economy, unforeseen changes in job site conditions, or death or illness of a key employee. Other factors include: accounting issues, management issues, unrealistic grown changes in the type of work performed, expansion and performance issues, inadequately trained personnel or insufficient personnel.

In construction, there are three parties involved, namely, owner, consultant, and contractor. The relationship and communication between these parties is adversarial

because each party has goals which conflict with the other party's goals. For example, the owner wants his project to be of a good quality and low cost, but this will reduce the profit of the contractor. The consultant wants the project to be safe and attractive which could cause both the contractor and the owner extra expenses. Also, the labourers hired by the contractor want their salary to be higher, which is not possible given the competitive prices in the contracting business. The weak relation and communication among parties could be a major source of a contractor's failure. This research helps to define causes affects perfectly healthy to collapse or fail. Understanding this mechanism can improve current practices with better understanding prevent their failure.

I. OBJECTIVE:

To Identify and priorities factor for contractor's failure.

II. LITURATURE REVIEW:

Jeffrey S.Russell defines Contractor's failure occurs when a Contractor is unable to perform his/her contractual duties. And say that requiring the facility owner to invoke the contract's non-performance clause. Contractor failure represents a large cost to the construction industry through decreased productivity, increased project costs, and schedule overruns. To account for these losses and inefficiencies, future facilities are affected by inflated construction costs. According to Frederikslust (1978), failure is the inability of a firm to pay its obligations when they are due. It mostly appears in a critical situation as consequences of a sharp decline in sales, as a result of recession, the loss of an important customer, shortage of raw materials, deficiencies of management etc.

Altman (1993) defined failure from the point of view of economics criteria. A company is considered to have failed if the realized rate of return on invested capital, with allowances for risk considerations, is significantly and continuously lower than prevailing rates on similar investments. Another criterion is insufficient revenues to cover costs and situations where the average return on investment is below the firm's cost of capital.

III. RESEARCH METHODOLOGY

Research methodology of this study contains three main steps. The first step includes literature Survey. The literature review was conducted through books, research papers, journals, internet, etc. As the outcome of this step is to identify factors of contractor's failure for residential construction project and their effect were grouped in owner related, engineer related, contractor related. Second step includes the questionnaire survey conducted by 17 experts in the construction industry as a contractor and engineer. The questionnaire is prepared in two parts. The first part contains personal information of respondent is experience, qualification, site details, etc. and the second part contains factors of contractor's failure. The questionnaire is distributed to expert participants of Bardoli. Third step contains result analysis and concludes with importance index methods.

IV. SURVEY OF FACTORS FOR CONSTRUCTION CONTRACTOR'S FAILURE:

Design of questionnaire survey: A questionnaire survey is designed by identified 48 causes of contractor's failure in Bardoli. The questionnaire carries both the instructions and questions to

respondents and provides an enough space for respondents to write down any comments or remarks. The authors considered both the subject content and the wording of each question in termsFor shared vocabulary and clarity. Each question is stated in a way as to be as precise, short, simple as possible. There are two main parts in the questionnaire:

- **Part I:** this part included a general introduction of Respondents and description of the analysis method.
- **Part II:** this part included a listing of the identified 48 factors of contractors’ failure in industrial projects. The contractor’s causes of failure are divided into five groups, namely; Managerial causes, Financial causes, Expansion causes, Environmental causes and other Uncontrollable causes. For each question, the respondents having four options as follows: For Frequency Index “Always”, ”often”, ”Sometimes” and “Rarely” For Severity Index “Extreme”, ”Great”, ”Moderate” and “Little”.

I. ANALYSIS AND DISCUSSION

SR NO.	FACTOR	Factors of contractor's failure	IMPI	RANK
A. Financial aspect	A1	Low margin profit due to competition	5.44	1
	A2	Cash flow management	3.87	5
	A3	Profitability Report	2.16	27
	A4	Controlling Equipment cost and Usage	2.11	36
	A5	Depending on banks and paying high interest	2.74	11
	A6	Poor estimating practices	5.02	3
	A7	Employee benefits and compensation	2.11	37
	A8	Material Wastage	2.11	38
	A9	Lack of capital	2.16	28
	A10	Mistiming of capital expenditures	2.41	17
	A11	Difference of local currency exchange with contract currency	2.05	40
B. Managerial Aspect	B1	Lack of Experience	5.26	2
	B2	Replace key Person	2.06	39
	B3	Assigning Project site Engineer	1.8	48
	B4	Labour Productivity	2.55	12
	B5	Bad Decisions in regulating company policy	2.05	41
	B6	Improper use of project management Techniques	2.32	22
	B7	Company procurement practice	2	45
	B8	Claim	2.49	13
	B9	Internal company issues	2.38	19
	B10	Recruitment dependency	3.51	7
	B11	Owner’s absence from company	2.21	26
	B12	Fraud	2.05	42
	B13	Neglect	2.05	43
	B14	One man rule	3.51	8
	B15	Company Organization	2.11	34

	B16	Lack of Experience in Contract	1.9	47
	B17	Inflation	2.43	15
	B18	Communication System	3.31	9
	B19	React to change	2.16	29
	B20	Commitment	2.16	30
	B21	Competent consultation	2.21	25
	B22	Control system	2.22	24
C. Expansion	C1	Expanding in new Exposure condition	3.65	6
	C2	Opening a Regional office	2.32	21
	C3	Increase number of project	2.16	31
	C4	Change in the type of work	2.41	18
	C5	Change from private to public	2.16	32
	C6	Lake of project management maturity	2.11	35
D. Business environment	D1	National slump or Government funding	2.42	16
	D2	Award contract to lowest price	2	46
	D3	Absence of specialize court	2.8	10
	D4	Policy	2.05	44
E. Uncontrolled Causes	E1	War	2.33	20
	E2	Frame agreement with supplier	2.44	14
	E3	Bank polices	2.27	23
	E4	Type of contract	4.01	4
	E5	delay in process payment	2.16	33

Table 1: The ranking of the causes of failure as agreed by the combined sample of Engineer contractors and Site Engineer.

Rank	Causes of contractor failure	Group
1	Low margin profit due to competition	Financial Aspect
2	Lack of Experience	Managerial Aspect
3	Poor estimating practices	Financial Aspect
4	Type of contract	Uncontrolled Cause
5	Cash flow management	Financial Aspect
6	Expanding in new Exposure condition	Expansion
7	Recruitment dependency	Managerial Aspect
8	One man rule	Managerial Aspect
9	Communication System	Managerial Aspect
10	Absence of specialize court	Business environment

Table 2: Top Eleven factor of contractor's failure by combining view of Engineer and Contractor.

		CONTRACTORS		ENGINEERS	
GROUP	CONTRACTOR'S FAILURE	IMPI	RANK	IMPI	RANK
NO.	FACTOR				
A1	Low margin profit due to competition	92.86	1	83.13	1
A2	Cash flow management	43.37	7	76.50	4
A3	Profitability Report	21.43	38	45.56	21
A4	Controlling Equipment cost and Usage	23.21	28	42.19	36

A5	Depending on banks and paying high interest	30.61	12	54.38	10
A6	Poor estimating practices	78.57	3	81.00	3
A7	Employee benefits and compensation	19.64	43	45.56	22
A8	Material Wastage	23.21	29	42.19	37
A9	Lack of capital	19.90	40	47.25	17
A10	Mistiming of capital expenditures	23.21	30	51.56	11
A11	Difference of local currency exchange with contract currency	21.56	34	42.19	38
B1	Lack of Experience	85.71	2	83.13	2
B2	Replace Key Person	19.90	41	43.88	27
B3	Assigning Project site Engineer	18.24	46	37.50	47
B4	Labor Productivity	28.57	15	50.63	12
B5	Bad Decisions in regulating company policy	19.64	44	43.88	28
B6	Improper use of project management Techniques	29.08	13	42.19	39
B7	Company procurement practice	21.56	35	40.63	43
B8	Claim	28.57	16	48.75	15
B9	Internal company issues	25.00	23	48.94	14
B10	Recruitment dependency	51.02	5	60.00	9
B11	Owner's absence from company	23.21	31	45.31	26
B12	Fraud	19.90	42	43.88	29
B13	Neglect	21.43	39	42.00	42
B14	One man rule	45.54	6	64.00	8
B15	Company, Organization	19.64	45	45.50	23
B16	Lack of Experience in Contract	18.24	47	40.63	44
B17	Inflation	28.19	18	47.25	18
B18	Communication System	28.57	17	74.38	5
B19	React to change	26.79	19	40.63	45
B20	Commitment	24.87	25	42.25	34
B21	Competent consultation	26.79	20	42.19	40
B22	Control system	24.87	26	43.75	31
C1	Expanding in new Exposure condition	41.20	8	72.25	6
C2	Opening a Regional office	24.49	27	47.25	19
C3	Increase number of projects	21.56	36	45.50	24
C4	Change in the type of work	26.79	21	48.00	16
C5	Change from private to public	22.45	32	43.75	32
C6	Lake of project management	28.70	14	37.50	48
D1	National slump or Government funding	33.16	11	42.25	35
D2	Award contract to lowest price	18.24	48	43.88	30
D3	Absence of specialized court	34.82	9	49.50	13
D4	Policy	22.45	33	40.63	46
E1	War	25.00	24	47.25	20
E2	Frame agreement with supplier	34.69	10	42.19	41

E3	Bank polices	26.79	22	43.75	33
E4	Type of contract	58.93	4	68.06	7
E5	Delay in processing payment	21.56	37	45.50	25

Table 3: Ranking of fact or of contractor’s failure by Engineer, Architect View and Contractor.

II. TEST OF AGREEMENT BETWEEN CONTRACTORS AND SITE ENGINEER:

The degree of agreement among the respondents; Site Engineer and Contractor was tested using the technique of “The Rank-Order Coefficient of Correlation” as shown in the following formula:

$$\rho = 1 - 6 \frac{\sum D^2}{N(N^2-1)}$$

Where, ρ : Is the rank order coefficient of correlation $\sum D^2$: Is the sum of the squared differences in the ranks of the paired values N: Is the number of parameters for which the ranking is made (48 causes in this study) It should be noted that the formula for ρ includes $\sum D^2 / N (N^2-1)$ term, which is subtracted from 1. If the factors were ranked in the same order, there would be no differences in the ranks and the sum of the differences squared ($\sum D^2$) would be zero. This ρ would equal (1-0) a perfect positive correlation. As the differences between the rank orders of these causes’ increases, there would be an increased amount subtracted from 1 to reduce the correlation coefficient. In Summary, the higher value of, ρ the higher degree of agreement between parties involved in the calculation Since the method is measuring the degree of agreement between two inputs together only, the test of agreement is conducted on:

- Between Site Engineer and Contractor ρ is computed to be 0.52.

The results show that the value of ρ is relatively Moderate. This means that there exists a general agreement between the parties involved in each case on the ranking of the Relative importance of the factor of contractors’ failure. The observed general level agreement on the relative importance of the causes of contractors’ failure stems from the strong relationship between parties in the construction. They are tied contractually or via a communication process in direct or indirect ways. Therefore, they are familiar, to a large extent, with the factors that could hinder the progress of the project or even could cause the project to fail

III. CONCLUSION

Base of the overall assessment and ranking of factor by combining samples of Engineers and Contractors the following set of funding could be concluded:

In all factors the Financial Aspect as the most crucial and after giving ranks the low margin profit due to competition as the major criteria (The profit has relation with risk and uncertainty. As the risk increases in the construction, the highest potential profit is Contractors bidding on a single project will have different estimates of project cost because of the differences in structure of cost information, construction method and take-off procedures used by each contractor. However, the profit, which contractor is added to his bid, determines whether he will win the contract or not. The number of contractors would be expected to be high because of the simplicity of establishing new construction firm. Also, as the amount of contractors increase, the margin of profit decreases. If the contractor is more specialized, the less his competition will be and the higher profit margin could be added. If

the contractor adds a high profit margin, he might not win any project contract and run out of work. So contractor needs to add very small profit margin, which sometimes causes contractor's failure. When a contractor estimates a profit to be added to a bid, he is faced with conflict constraints. If the contractor adds a high profit he may lose the work and if he adds a low profit it may cause failure. This reason is the most important factor of contractor's failure, which is low profit margin due to excessive competition.) As per managerial criteria as considered lack of Experience (When a contractor is doing the same type of work for many years, this experience gives him a competitive edge in the market. The management is the key for the success of the company. The owner should employ a high degree of qualified working team in the company. The working team also must have good experience in the same line of work. Therefore, the management would be able to maximize the usage of the company's resources. Not only working team has experience, but also the owner should have experience in the line of work for two reasons. First, the owner would not be cheated from anyone inside or outside the company. Secondly, if the owner does not have experience, he may not appreciate any improvement or any new ideas which could bring good income in the future. Most of the decisions which cause contractors failures are taken by the management) as also affect a lot for the successful competition of work. After these two criteria some other influencing factors are: Poor estimating practice cash flow analysis, etc. Cost estimation of the job for a competitive bid is not an easy task. The cost of labor, construction equipment, material, subcontracts, taxes, overhead, and surety bond are calculated and combined with mark-up to arrive at the final bid amount This will determine whether a contractor gets the job or not. The source of the unit costs is the previous projects which were done before. Also, there are construction cost indexes for forecasting probable construction costs. Most of the contractor's expenses are paid in cash. Therefore, availability of cash flow is very important for a contractor to run the business. A contractor could find little shops which would give him credit. However, there are two problems associated with purchasing on credit, prices would not be cheap as compared to cash payment and a contractor is limited to items which are available in the shop which gives him credit. A contractor should plan for cash flow, or one day he will not have money to pay his expenses, and also there is no progress payment ready for collecting. The plan for cash flow needs cooperation between all company divisions. Consequently, the cash flow will high priority in the management. Also, the meeting could help to solve all problems related to delay in progress payment. If the contractor is able to manage his cash flow effectively, his business will run smoothly. In addition, cost estimating guides are available for the estimator. All these methods help the estimator for preparing the costs because the accuracy and bidding with reasonable price are the key for successful project.

IV. RECOMMENDATION:

From the above study, we can able to say that strictly follow up of SOR and quality specifications helps to reduce gradual ups and down in low margin profits in tendering or in the bidding process.

Work should be allotted to those who, having the sufficient field experience and practice so during the commencement of work it roadblocks come then they can easily solve it and can progress.

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