

# Study of challenges faced by construction contractors, while upgrading to next level.

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**Abstract:** In construction industry the contracting firms are largely growing. The growth of these firms also comes with some major challenges. Especially when the contracting firm upgrading from a certain position to higher position. This is not a sudden change, but it will impact various factors in construction industry. Here the challenges faced vary firm to firm or contractor to contractor. So the major challenges faced by these firms/contractors is studies. The study is consists of mainly four major factors namely,

- **Financial related factors**
- **Equipment related factors**
- **Manpower related factor**
- **Skills and management related factors**

This study identify some factors related to above major factors. The questionnari is prepared with the help of literature review and opinions from the experts. Relative importance index(RII) method is used for analysis of data. The analysis is done by ratings given by the contractors. The analysis of most challenging factors found out and recommendation to those factore are given. The purpose of this study is to provide solutions to these major problems.

**Index term – RII method, analysis, ranking, recommendations**

## LINTRODUCTION

Construction industry has great importance in economy of India. It is the second largest industry in India next to the agriculture. It contributes 8 percent to the Nation's Gross Domestic Production and it is generated 41 million jobs in the country. The construction industry sets in motion the process of economic growth in the country; investment in this sector contributes 6.5% of Gross Domestic Product (GDP) growth. Every Re.1 investment in the construction industry causes an Rs.0.80 increment in GDP as against Rs.0.20 and Rs.0.14 in the fields of agriculture and manufacturing industry, respectively. In spite of the growth construction industry faces many challenges such as skill development, lack of safety measures, safety awareness, fluctuation in cost of building material, government rules and regulations, etc. The number of research have been carried out for solving these problems in developing counties like India. However, lack of progress was noted in solving such problems due to inappropriate references, lack of resources, neglecting the construction industries by government. As per the survey carried out by Construction Industrial Development Council of India in 2011 there are around 31000 enterprises in the construction industry in India out of which around 29600 are the small scale, around 1050 are the medium scale and around 350 are the large scale enterprises. Hence the research requires to set sample size and also area to study the various parameters related to the challenges faced by the construction contractors.

In the present scenario, an investment of 1 trillion USD is projected in the infrastructure sector in 2014–2017 (Make in India, 2014). This expansion of India's massive infrastructure presents enormous opportunities, along with challenges. India's population has surpassed 1.2 billion, and continues to grow (Agarwal, 2013). Nearly 590 million people will live in Indian cities by 2030. This will accelerate growth in housing, commercial, industrial, and infrastructure sectors (Make in India, 2014). The country need to regenerate urban areas in existing cities and create new, inclusive smart cities to meet demands of both increasing population and migration from rural to urban areas (DMG Events India, 2015).

Construction sector is vibrant to any economy. In case of developing countries, it provides not only the infrastructure, but also offers employment to large population of skilled and unskilled manpower. The developing countries are responsible for 23 per cent of world's total construction output (Engineering News Record, 1998). Considering all above parameters in this study we are considering the various challenges in front of the contractors and collecting the ratings to the respected challenge and analyse them according to their ratings. This way we will able to find the major challenges.

**B) OBJECTIVES**

- ❖ To identify the problems faced by construction contractor while upgrading from one level to another.
- ❖ To analyse the problems affecting on time and cost of project.
- ❖ To impart suggestive measures for improvement.

**II. PROPOSED METHODOLOGY**

- **Phase 1 : -**
- **Design Sample**
- **Phase 2:-**
- **Data Collection**
- **Phase 3:-**
- **Data Analysis**
  
- **Phase 4: - Analyse the data and assign results showing the sever problems in front of contractors.**
- **Phase 5: - Conclude and suggest the best remedies to those problems.**

**III. DATA COLLECTION**

The detailed questionnaires' survey is collected from the contractors. The questionnaire survey includes various factor affecting on contractors or contracting firms and it convey to the respondents through a google forum technology. In that type of survey some opinions are taken from expert to know the impact of the questionnaire survey, while drafting the questionnaire survey following points are kept in mind those are 1) Questionnaire start with general information of the respondents and organization. 2) The size of the questionnaire survey is optimum. 3) The sequence of the questionnaire survey starts with major to minor challenge. 4) Questionnaire survey must be on rating basis for each challenge. 5) Cross –check the questionnaire to check the information right or wrong 6)The factor which are not important they should remove 7)The factor should have rearranged for suitability. The respondents can give the rating of each factor. The collected information was checked by relative importance index. For framing the questionnaire survey likert scale is to be used to rank the importance of each factor.

table No.1 likert scale to rank the importance

IMPACT	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH
RANGE	1	2	3	4	5

**IV. DATA ANALYSIS****A) DATA ANALYSIS METHOD**

The questionnaire survey was examine by relative importance index which will help to determine the relative importance of each factor those are affecting on labour productivity and found the top most factor .The following formula is used to calculate the relative importance index.

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

Where ,

W= weighting given to each factor by the respondents (1 to 4)

A=Highest weight (i.e.5)

S= Total number of respondents

table No.2 Analysis for factor affecting construction contractors while upgrading by RII method

<b>FUNDS RELATED FACTORS</b>											
Sr. No.	Rating given by contractor no.	1	2	3	4	5	6	7	$\Sigma$	A*S	RII Value
1	Availability of funds	5	5	1	1	4	3	2	21	35	0.60
2	Bank policy	2	4	3	3	4	2	3	21	28	0.75
3	High rate of interest on loan	4	2	4	4	4	5	1	24	35	0.69
4	Increase in tax rate	3	2	5	5	4	4	4	27	35	0.77
5	Bad debts(Outstanding payments that cannot be collected)	3	4	2	2	5	4	4	24	35	0.69
6	Fluctuation in material coast	4	2	4	4	3	5	3	25	35	0.71
7	Delay in payments by client/government	5	4	1	1	4	3	4	22	35	0.63
<b>EQUIPMENTS RELATED FACTORS</b>											
8	Lack of construction equipment	4	2	3	3	4	2	1	19	28	0.68
9	Problems in taking equipments on lease basis	2	2	2	2	2	2	1	13	14	0.93
10	Lack of skilled operators, drivers	3	4	4	4	4	3	1	23	28	0.82
11	Frequent maintenance problems of construction equipment	2	4	2	2	2	2	1	15	28	0.54
12	Need for onsite repairing workshop	2	4	1	1	4	1	2	15	28	0.54
<b>MANPOWER RELATED FACTORS</b>											
13	Need to increase the manpower	3	2	2	2	3	2	3	17	21	0.81
14	Lack of ability to provide workers/employs a good living condition at site location	3	4	3	3	2	1	1	17	28	0.61
15	Unsatisfaction of employs/labour due to low income, adverse site condition, payment delay etc.	4	4	4	5	4	2	4	27	35	0.77
16	Need of training to improve skills of labour	3	4	5	5	4	4	2	27	35	0.77
17	Absentees of employees, workers on construction site	4	4	4	4	4	3	1	24	28	0.86
18	Lack of ability to provide safety measures to workers	3	4	1	1	4	2	5	20	35	0.57
<b>SKILLS AND MANAGEMENT RELATED FACTORS</b>											
19	Lack of management skills	4	4	4	4	4	4	3	27	28	0.96
20	Lack of ability to develop long term strategy	4	4	2	2	2	5	3	22	35	0.63
21	Lack of professional advisors and consultants in the construction industry	3	5	4	4	2	2	4	24	35	0.69
22	Increased competition in construction field	4	3	5	5	4	2	4	27	35	0.77
23	Problems in subcontracting policy	2	4	5	5	2	4	5	27	35	0.77
24	Government rules and regulation, policy	3	4	5	5	4	5	3	29	35	0.83
25	Adverse site condition (Remote places, Risk in execution of work)	4	2	2	2	4	3	3	20	28	0.71
26	no cooperation from material suppliers	4	4	2	2	2	2	3	19	28	0.68
27	Insufficient profit	4	5	5	5	4	3	1	27	35	0.77
28	Increased cost of material and labour	4	4	4	4	4	4	1	25	28	0.89
29	Need for the managerial software training programs	2	4	3	3	2	4	5	23	35	0.66

table No.3 Result and ranking for factor affecting construction contractors while upgrading by RII method

TOP RANKING FACTORS		
FUNDS RELATED FACTORS		
RANK		RII value
1	Increase in tax rate	0.77
2	Bank policy	0.75
3	Fluctuation in material coast	0.71
EQUIPMENTS RELATED FACTORS		
RANK		RII value
1	Problems in taking equipments on lease basis	0.93
2	Lack of skilled operators, drivers	0.82
MANPOWER RELATED FACTORS		
RANK		RII value
1	Absentees of employees, workers on construction site	0.86
2	Need to increase the manpower	0.81
SKILLS AND MANAGEMENT RELATED FACTORS		
RANK		RII value
1	Lack of management skills	0.96
2	Increased cost of material and labour	0.89
3	Government rules and regulation, policy	0.83

## V. RECOMMENDATION

Generally the challenges faced by contractors can be minimized by adopting some new methods, implementing new skill programs, use of advance construction software etc. The environment of the construction firm should be maintain by mutual understanding between the different deartments and hence the challenges can be reduced so that the performance of the construction firm is to be stable. The project can completed within the duration, cost of project will lowered also contractor gains more work through a tendering process. It is necessary to study the major challenges faced by contractors while upgrading and give some recommendation to those. Following are the recommendation for those factor effects on productivity.

### Financial challenges:-

The financial challenges consists of the following major factors

- Increase in tax rate
- Bank policy
- Fluctuation in material coast

The tax rates are increased since the GST (Goods and Service Tax) is introduced, but this challenge can be solved by discussing with the government authorities to minimize the tax rates. Also the bank policy problems can be solved by maintaining the transparency of the accounts and loan documents, also the interest rate on loan can be minimized by maintaining transparency with the nationalized banks.

**Equipment challenges:-**

The equipment challenges consists of the following major factors

- Problems in taking equipments on lease basis
- Lack of skilled operators,drivers

The use of the recent equipment should be introduced at work site. This can help for reducing time and cost and increase the efficiency and productivity. The contracting firms should consider the size, cost, efficiency of the equipment at the process of procurement & also study the suitability of the equipment with respect to working conditions. The main problem in lease based equipment is that there is not proper bond between both parties, so this process should be done under legal process.

**Manpower challenges:**

The manpower challenges consists of the following major factors

- Absentees of employees, workers on construction site
- Need to increase the manpower

The organization should have check the worker age, wages, worker effort, work environment at the time of supervision to maintain their health and to minimize the absentees. The performance of the labour should measure with changing the semi-skilled labor with skilled labor. While recruitment process contractor should have check the skill of the worker. At the time of allocating the work to labour, contractor should decide the categories of labour as per skill, age and work effort. Also arrange some skill improvement programs including safety programs also.

**Skills and management challenges:-**

The Skills and management challenges consists of the following major factors

- Lack of management skills
- Increased cost of material and labour
- Government rules and regulation, policy

The contracting firm should arrange the software training program to improve the managerial skills of the employs. This way the can save time in planning and scheduling and take part in optimizing the time and cost of overall project. To minimize the fluctuation in material cost proper material management should be done. Purchased material should be stored at the workplace so it can accessible to the worker, so that the time required for collecting material is less hence the output is increased. The material should be stored at close to constructed site. The store in charge should take record of the received material and reporting the sending material with inspection also the material are stacked according to the codification and classification.

**Safety management:** - The organization should provide the safety devices on site so that worker can improve their work efficiency. The safety officer should check the PPF periodically and repair it also they can display the wearing procedure at the workplace. The contracting firms should appoint safety officers team to reduce the dangerous practices from workers.

**VI.CONCLUSION**

All the major challenges including financial, equipment, manpower and skills and management related are studied thoroughly. Then some major factors are found out by applying RII analysis method. The suitable recommendations are given to those major factors above. It will helpful to the contracting firm to study the challenges and how to minimize the challenges by going through this detailed study. This study shows the result of major factors which can be reduced to optimize time and cost of project and improving overall project performance.

**VII. REFERENCES**

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