



Risk Identification in Infrastructure Project

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Abstract: - The growth of the economic and producing sectors in the Asian country has been comparatively a lot of as compared to the expansion of the infrastructure sector. The energy shortage, Associate in nursing inadequate and improper transportation network, Associate in Nursing a scarce water system has caused in hindrance in country's economic development. This creates ample opportunities for the foreign also as native investors within the Indian market. However, initiating and execution of infrastructure business in the Asian country involves several risks and issues occurring primarily as a result of variations in system, market fluctuations and cultural problems.

It is so polar for foreign and native investors to spot and manage important risks involved the investments in India's infrastructure come. The purpose of this paper is a risk assessment relating to the infrastructure comes in the Asian country.

Key words: Infrastructure project, Risk assessment

I. INTRODUCTION:

India has shown exceptional growth over the past many years, so attracting foreign likewise as native investors.

A number of reasons make a case for India's attractiveness to foreign investors.

- 1) The human resources being cheaper and simply accessible.
- 2) Major international events have shown Republic of India may be a safer oasis for investment.
- 3) The social and economic infrastructure has been rising considerably in recent years.
- 4) India's economy has shown exceptional economic process over the past decades on a median annual rate of seven.5%.

This huge socio-economic growth in the Republic of India has resulted in a huge demand for basic infrastructure like power plants, water treatment plants, roads, tunnels. But of these infrastructure comes and development being thus productive involve the Brobdingnagian quantity of risks and obstacles to the investors and economy. The purpose of the analysis is to spot and value these risks and notice the number of

criticality related to the infrastructure comes in Republic of India.

II. LITERATURE REVIEW:

Infrastructure project concerned several component government muscle contraction company suppliers so on. A really beginning of identification consists of listing and categorizing risks likewise as analysis of their sources for reliableness. As antecedently mentioned, it contends with completely different views regarding risk and also the same applies to the activity of risk. There are 2 classes of risk in infrastructure project country risk and special project risk. There is risk like delay in approval, modification in the law, dispatch constraint, cost, land acquisition and compensation, construction schedule, enforceability of contracts, tariff adjustment, money closing, environmental risk, rate and fungibility. There is some Common reason behind failure is as below.

- Cost overrun
- Financial failure
- Poor management
- Involvement of state
- Increase in value of fabric
- Shortage of fabric
- Technical unskillfulness

Fundamentally risk management in infrastructure is that the same fashion as different businesses from the operation of context institution, assessment and treatment of risks. Risks in infrastructure will be varied from completely different business activities among corporations likewise as however they interpret and place those risks. Vary of risk management choices are from diminution (of unfortunate impacts).

Approaches of the danger identification are employed in this paper. The approach is bestowed as a part of the interview because it will be accessible directly and it's higher the higher tool to categorise and analyse the danger for better results later.

III. METHODOLOGY OF STUDY:

A] Procedure: - For the study of risk associated with infrastructure project we have implemented five stages out of that literature review, which has been studied, gives the risks associated with infrastructure project especially with BOT project.

Following risk has found to be major and occurs at different stages from planning to execution of project.

- Approval risk
- Contract risk
- Cost overrun risk
- Law risk
- Dispatch constrain risk

The above shortlisted risks are generated or shortlisted on the basis of the data published the different journals and past experience of the BOT project in infrastructure sector.

To evaluate these risks in detail a survey via questionnaires to related experts was conducted to evaluate the complexity provide detailed information to supplement that obtained from the survey.

B] Survey

Rating of risks in degree of criticality

So as to achieve the reliable results from the survey the six degree rating system has been adopted in which the risks are rated varying from "Not applicable" to "Very much critical" in degree of criticality ranging "1 to 6"

Rating	Risk criticality
1	Not applicable
2	Not at all critical
3	Only slightly critical
4	Critical
5	Very critical
6	Very much critical

C] Data collection

Critical risk↓	Not applicable	Not at all critical	Only slightly critical	Critical	Very critical	Very much critical	Score	Ranking
Score →	1	2	3	4	5	6		
Delay in approval	0	I	II	IV	X	XIII	152	1
Change in law	0	I	IV	VII	VI	XII	144	2
Cost overrun	I	III	II	V	IX	X	138	3
Dispatch constraint	0	V	VII	I	X	VII	127	4
Land acquisition & compensation	I	II	X	III	VIII	VI	123	5
Enforceability of contracts	0	VII	VIII	VI	IV	V	112	6
Construction schedule	I	VI	XIV	V	VI	I	96	7
Financial closing	V	XI	IX	III	II	0	76	8
Tariff adjustment	VI	XV	IV	III	I	I	71	9

1) For the data collection we have shortlisted 11 risks and a detailed questionnaire is prepared for the same to which the respondents had to reply.

2) This survey is mainly focused on the infrastructure sector and focused on following industries,

- a) Telecommunication
- b) Toll road projects
- c) Docks and harbours
- d) Aviation projects
- e) Environment projects

Questionnaire has been sent to 30 respondents from industries and academics, who are working in different positions such as Project managers, Construction managers, site engineers and professors of the engineering faculty.

D] Analysis of data

Essential care has been taken so that the respondents understand the terms and interpret it in the same manner.

Data collected from respondents was examined and tabulated in the proper format, which was done in three stages.

Data reduction:

Data is tabulated in pre-described format and looked for patterns and themes to reduce the data without significant loss of information.

2] Data display:

Data is displayed in tables as well as graphs have been plotted to illustrate the information.

3] Drawing valid conclusions:

From the analysed data, the conclusion is obtained. The respondents had to give the ratings ranging from 1 to 6 to the assigned shortlisted risks. The average of all responses was calculated and the rankings were given accordingly to the risks. The risks with the highest mean score would be ranked 1 to 6.

Environment risk	VII	XIV	V	III	I	0	63	10
Exchange rate and convertibility	XII	VIII	IX	I	0	0	59	11

CONCLUSION:

From the above study all the possible risks occurring in the infrastructure projects are shortlisted. It has been observed that these risks use to occur at different stages of construction project. It is recommended to further evaluate these risks.

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