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Research paper

Post Project Assessment of Risk in Construction Projects

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Abstract

In these days construction projects are applied in risky and unstable environments results in a very high risk factors and unreliability. Risk assessment is a way to conclude the risks and quandary of the project executed and directs it with some actual solutions. In this field the top managements authority need to detect the value, phase, grade and status of the project. Since there is lot of different problems are intricate in construction and it is so hard to keep in existence of value, phase, grade and status as schedule. This paper recognizes the factors required in the projects of construction field and to predict the possibilities which are affects the construction and reduction calculations. The probable risk factors available in the post project and it is categorized the very little effects to huge effects has been composed by the questionnaire survey. And the outcomes were look over by the SPSS software. The acceptable guidance was afforded to make over the negative issues.

Keywords: *Risk management, Ranking of factors, Risk identification.*

1. Introduction

In the project field the risk management comprises two important factors. They are the interception of potential issues and the advance identification of definite issues. These problems are majorly available in every project, daily basis works and almost in every organization. In present days risk management is a negative issue for a healthy management, as the projects are getting more difficult in present days. It is conceivable to breakdown venture risks from to alternate points of view. From the perspective of the customer who is vital to basic leadership in the task and form the perspective of the temporary worker, who customarily expands expenses to support risks, it given that the minor utility is getting lower, is confronting a training that has turned out to be and rewarding. These two gatherings have distinctive practice against the risks of the task and diverse conceivable outcome of exchanging risks to the gathering best ready to oversee them. As of now the act of risk management is receptive semi invariables, temporary and unstructured inside the construction development, bringing about an absence of ability to oversee chances fittingly.
The frame work utilizes for risk management in ventures has been essentially in view of subjective investigations, however the strategy does not permit to record risks, issues and moves made to determine them and additionally lessens realized with the goal that they can be utilized for the growth of a upcoming project. The accompanying is a posting of numerous development industry risks and exposures. The variable which impact the risks in the working amid development are recognized by the different developments.

The risk factors concluded are given below;

- Financial risk
- Legal risk
- Management risk
- Market risk
- Policy and political risk
- Technical risk
- Environmental risk

2. Methodology

The questionnaire contains 7 individual types of risks which contain various listed questions of risks involved
Section 1 – Respondents Data
Section 2 – Respondents Rating for the issues faced
The confront to confront personnel meet strategy is utilized for filling the survey and collecting the information in which the respondents make a brief clarification of the thoughts which are included in the survey. The survey conveyed at the destinations and information are collected through confront to confront meet strategy from the respondent. At that point the collected information are examined utilizing the taking after strategies.

1. Reliability , Validity test in IBM SPSS
2. Friedman mean test in IBM SPSS

Table 1: Reliability & validity test

Cronbach's Alpha	N of items
0.97	72

Item statics	mean	Stand deviation	N
Bankruptcy of project partner	1.800	1.562	30
Loss due to fluctuation of inflation rate	1.633	1.376	30
Loss due to fluctuation of exchange rate	2.000	1.508	30

Loss due to raise in fuel price	2.400	1.499	30
Low creditability of shareholders and lenders	1.667	1.493	30
Changes in bank formalities and regulations	1.466	1.252	30
Insurance risk	1.833	1.510	30
Breach of contract by project partner	1.833	1.391	30
Lack of enforcement of legal judgment	1.633	1.564	30
Improper verification of contract document	2.000	1.438	30
Lack of knowledge of arbitration	1.766	1.381	30
Uncertainty and unfairness of court justices	1.800	1.517	30
Change of top management	2.133	1.795	30
No past experience in similar project	1.666	1.422	30
Short tendering time	1.933	1.311	30
Sub-contractor related problems	2.566	1.430	30
Improper contractor feasibility study	1.766	1.222	30
Improper project planning and budgeting	1.933	1.484	30
Inadequate choice of project partner	2.133	1.479	30
Improper project organization structure	1.633	1.449	30
Poor relation and dispute with partner	2.133	1.547	30
Poor communication between clients	2.100	1.515	30
Internal management problems	1.933	1.659	30
Team work	2.066	1.680	30
Poor relation with government departments	1.900	1.422	30
Time constrain	1.866	1.547	30
Project delay	2.330	1.561	30
Competition from other companies	2.066	1.337	30
Fall short of expected income from project	1.933	1.284	30
Increase of accessory facility price	1.966	1.425	30
Increase of labour cost	2.666	1.347	30
Increase of material price	2.633	1.711	30
Increase of resettlement cost	2.76	1.222	30
Inadequate forecast about market demand	2.400	1.379	30
Local protectionism	1.833	1.234	30
Unfairness in tendering	1.800	1.214	30
Cost increase due to changes of government polices	2.166	1.464	30
Loss incurred due to correction and bribery			
Loss incurred due to political changes	2.033	1.496	30
Loss incurred due to bureaucracy for late approval	2.233	1.454	30
Accidents on site	2.166	1.416	30
Design changes			
Equipment failure	1.966	1.325	30
Errors in design drawing	2.066	1.229	30
High degree of difficulty of construction	2.033	1.376	30
Stiff environmental regulations	2.166	1.391	30
Incompetence of transport facilities	1.733	1.112	30
Industrial disputes	1.766	1.194	30
Material shortage	1.700	0.952	30
Obsoleteness of building equipment	1.666	1.397	30
Poor quality of procured materials	2.100	1.241	30
Problems due to partner different practices	1.766	1.250	30
Shortage in supply of water	2.033	1.245	30
Shortage in supply fuel	1.966	1.272	30
Shortage in supply electricity	1.933	1.412	30
Unknown site physical condition	1.733	1.460	30
Following government standards and codes	2.000	1.389	30
Wastage of material by workers	2.033	1.401	30
Theft of material at site	1.933	1.172	30
Site distance from urban area	2.366	1.425	30
Surplus material handling	2.266	1.014	30
Architect Vs structural engineer disputes	2.066	1.172	30
Shortage of skillful workers	1.800	1.186	30
Any adverse impact on project due to climatic condition	1.933	1.484	30
Any impact on environment due to project	2.200	1.447	30
Healthy working environment for workers	2.200	1.214	30
	2.000	1.313	30
	2.100	1.213	30

Friedman mean test;

Financial Risk

Rank	Name	Mean Rank	Standard Deviation
1	Loss due to rise in fuel price	5.20	1.49
2	Loss due to fluctuation of exchange rate	4.08	1.50
3	Insurance risk	4.00	1.51

Legal risk

Rank	Name	Mean rank	Standard deviation
1	Improper verification of contract document	3.45	1.43
2	Breach of contract by project partner	3.00	1.39
3	Uncertainty and unfairness of code justices	2.95	1.51

Management risk

Rank	Name	Mean rank	Standard deviation
1	Sub contractor related problems	10.23	1.43
2	Project delay	9.35	1.56
3	Poor relation and dispute with partner	8.88	1.54

Market risk

Rank	Name	Mean rank	Standard deviation
1	Increase of resettlement cost	6.45	1.22
2	Increase of labour cost	5.98	1.34
3	Increase of material price	5.65	1.71

Policy and political risk

Rank	Name	Mean rank	Standard deviation
1	Loss incurred due to political changes	2.58	1.45
2	Loss incurred due to correction and bribery	2.52	1.49
3	Cost increase due to changes of government polices	2.50	1.46

Technical risk

Rank	Name	Mean rank	Standard deviation
1	Theft of material at site	13.93	1.01
2	Wastage of material by workers	13.88	1.42
3	Shortage of skill full labors	13.05	1.44

Environmental risk

Rank	Name	Mean rank	Standard deviation
1	Any adverse impact on project due to climatic conditions	2.07	1.21
2	Any impact on environment due to project	1.97	1.31
3	Healthy working environment for workers	1.97	1.21

3. Result and Discussions

In this study seven important risk management factors are taken into consideration. That major factors are also having some minor factors to get a good results for risk management. Based on the statistical measures the rank correlation has been finished using SPSS software. As per the results loss due to raise in fuel price is the minor factor that affected the financial risk management. Then improper verification of contract demand is the second minor factor that affected the legal risk management factor. Third major factor is management risk and it is affected by minor factor sub-contractor related problems. Market risk is the fourth factor that s affected by the minor factor increase of resettlement cost. The fifth major factor is policy and political risk and is affected by the minor factor loss incurred due to political changes. Theft of material at site is the minor factor that affected the major factor technical risk management. Environmental risk management is the final major factor that is affected by the minor factor any advance impact on project due to climatic condition.

4. Conclusion

Generally in risk management some of risk cannot be rectified due to environmental conditions like, loss due to rise in fuel price , any adverse impact on project due to climatic condition, loss incurred due to political changes these are the common risk we cannot be change. By selecting qualified contractor to overcome the subcontracted related problems, agreement should be made and follow strictly to defeat the resettlement cost and the verification on contractor documents, by providing a proper security systems to save the materials in site.

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