

A STUDY ON THE CAUSES DUE TO INADEQUATE RISK MANAGEMENT IN THE CONSTRUCTIONS PROJECTS

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ABSTRACT:

The administration of construction projects necessitates familiarity with contemporary management practises in addition to a comprehension of both the design process and the construction procedure. Construction projects each have their own unique set of goals and limitations, such as a predetermined amount of time in which they must be finished. Additionally, since they are expensive endeavours, many individuals, in an attempt to cut the expense, become penny smart and pound dumb. Construction work always involves some element of change. The vast majority of initiatives are not successful in meeting their goals for time, money, or quality. This should not come as much of a surprise given that there are no such things as perfect engineers, ideal designs, or that the forces of nature act in a manner that can be precisely predicted. Cost, time, and performance are the three key goals that are most likely to be affected by risk and uncertainty in building projects. Because so many individuals are trying to make changes to the project at the lowest possible cost, the project is in a lot of difficulty. It's possible for construction projects to be placed in peril due to a lack of risk management, or even just an inadequate risk analysis. This article discusses the primary factors that contribute to the failure of a construction project, including the absence of an early risk assessment, poor documentation and tracking, inconsistent and insufficient status reporting, and the inability to set parameters. The process consists of reviewing previously collected data and findings, as well as developing a checklist for use by all parties engaged in failed building projects. It is applicable across the whole of the project life cycle, beginning with the initial evaluations of strategy and continuing through initiation, planning, execution, and closure. Risk management will also bring advantages in improved accountability and justification of choices by providing a well-suited and robust process that supports decision-making. These benefits may be attributed to the fact that risk management will provide a decision-making support system. The administration of construction projects necessitates familiarity with contemporary management practises in addition to a

comprehension of both the design process and the construction procedure. Construction projects each have their own unique set of goals and limitations, such as a certain amount of time in which they must be finished. In addition, since they are expensive endeavours, many individuals, in an attempt to save costs, become penny smart and pound dumb. This is because they try to save money by cutting corners. Construction work always involves some element of change. The vast majority of initiatives are not successful in meeting their goals for time, money, or quality. This should not come as much of a surprise given that there are no such things as perfect engineers, ideal designs, or that the forces of nature act in a manner that can be precisely predicted. Change is inevitable, but engineers may increase their ability to effectively manage this change by adopting the concepts and practises of risk management. Change cannot be stopped. The purpose of this project is to conduct an analysis of building projects that have insufficient risk management.

I. INTRODUCTION

Project risk management is one of the primary responsibilities of a project manager. However, without proper risk management from the start of the project, this is an especially difficult and inefficient task. Proper and systematic methodology and, most importantly, knowledge and experience are essential for an efficient and effective risk management approach. The results of previous studies in Chile have shown that neither employers nor contractors routinely employ risk management practises, which could have a negative impact on the results of projects. This paper proposes a methodology for modelling, evaluating, and obtaining best practises for risk management in construction projects from the perspective of a knowledge-based approach. This method was developed as part of ongoing study. The primary finding of this study is that there is still a significant lack of effective risk management in construction projects. Customers and contractors can use the proposed method to create a risk management function for the project that is grounded in best practises and results.

There are many problems with how risk is managed on construction projects, and this is a problem because risk management is an important part of project management. For a long time, the construction industry has relied on a mitigation strategy for risk management, which has proven ineffective and hampered overall project management quality. In many cases, the consequences of risks that occur during the realisation of a project are not adequately covered by the application of contingency money (money) or floats (time), which are typically determined without conducting a thorough analysis of the risks affecting that project. Then, in most cases, delaying a project won't affect its profitability or timeline. It takes proper and systematic execution, but more importantly, a wide range of knowledge and experience, to develop effective and effective risk management. If you want to do well in the event of an unexpected event occurring during the course of a project's execution, you'll need to know what to do and how likely it is to occur. The absence of preventative measures against the risk and uncertainty of delivering any project is what makes a lack of an effective project risk management function so disastrous for all involved.

PURPOSE OF THE STUDY

The study's goal is to discover the causes of risk management failure in construction projects and other types of projects, as well as the most effective methods for resolving these failures. In addition, the author intends to define the precursors to project failure due to inadequate risk management and recovery planning. By their very definition, projects offer something fresh and exciting. They typically take place over a lengthy time frame and necessitate the utilisation of a myriad of assets, such as human capital, monetary capital, physical assets, and intangible assets like ideas and designs. Most projects have clearly defined objectives, or they progress towards a defined end state.

II. LITERATURE REVIEW

Risk management in construction

- Risk management has become increasingly important, so many companies have set up specialised departments to monitor and report on potential threats. The construction industry and possibly all other types of companies are at risk (Flagan and Norman), but "these risks can be adequately addressed due to poor performance and growth," as stated by Thompson and Perry (Thompson and Perry). The words "flood, cost, and time delay" come to mind. The construction industry ranks among the most potent, dangerous, and difficult in the world. Every building project has some degree of danger attached to it.

Customers in the manufacturing industry are often associated with the existence of meaning and risk management due to the specifics of manufacturing operations, processes, environment, and organisational structure. Construction risk is typically thought of in terms of how much time and money it could add to the overall project. While Mason and Moenzbeck describe this as "merely harmful," Porter, Healy, Perry, and Hayes characterised the risk as "a financial loss or increased by engaging in the construction process." A project's time, money, and quality are all subject to the construction industry's inherent risk, which is described by the BOFAD model.

- The construction industry is notorious for its abundance of unknown, unpredictable, and typically unwelcome surprises (fang). All three of Ashley, Congrey, and Riggs (Ashley, Congrey, and Riggs) agree that the profit structure of any commercial enterprise and the free enterprise system are subject to the same conditions. All professionals and groups involved in construction (customer groups, design teams, project management teams, contractors, etc.) need to manage risks related to cost, time, and quality.
- Construction projects can be roughly classified into two broad categories: public sector and private sector. There are some distinguishing features between public sector and private sector construction project management processes. The complexity of public sector projects is higher than that of private sector projects, according to Splitter and McCracken. Similarly, the regulatory framework for public construction projects varies greatly depending on location. When compared to the United Kingdom, Spain and France have a law on public sector projects that establishes universal norms for both the public and private sectors (Flynn).
- It is important for a business to conduct a thorough evaluation of a construction project before committing resources to it. When planning a commercial development, it's important to weigh the potential rewards against the costs and risks involved. The results of a public project are more than just an economic evaluation. Profitability; ROI. All the decisions made during the conceptual phase of a new construction project can have a substantial effect on the total cost of the project, making this phase crucial (Sida). According to Falagan and Norman, this is the phase in which people experience the most unpredictability. We have established that risk management is concerned with managing risks in a project and attempting to minimise their impacts, but it should also play an important

role in controlling risks and eliminating them throughout the project life cycle. (Toakley). Doctor. "a risk management strategy must be established at the beginning of a project, and this risk is constantly addressed throughout the project life cycle," writes Kerzner.

III. METHODOLOGY

DATA ANALYSIS

When the completed questionnaire was sent by email, the data were put into the Statistical Package for the Social Sciences (SPSS). All queries and subcategories are converted to variables. The price label was used to code each answer choice. In total, 122 variables were written down and used to analyse the data. Fellows and Liu (2003) break content analysis into three main types: qualitative, quantitative, and constructive. Even though there was a set of quantitative data, a sample of 36 answers was not enough for a thorough statistical analysis. So, simple SPSS tools were used, like descriptive statistics and custom tables. Their support frequency includes ways, distributions, rankings, and functions. Graphs were made in Microsoft Excel to show how statistical data looked. The interview to look at the data was based on the answers to the questionnaire. The interview is an example of qualitative data, and the goal of analysis (Fellows and Liu, 2003) is to figure out what the data mean. No special method of analysis was used to look at the data. Instead, the researcher tried to learn about the model and how the respondents saw, felt, and thought about the study area. All of the interviews were recorded and sent. It's important to point out that transcription takes a lot of time. Since most of the interview was planned, the same questions were asked in the same order in each one. This method made the structure of the answers easier to understand and made the processes of transcription and analysis easier. Two steps were taken to look at the data. First, the interviews were put into groups based on the name of the project, and the answers were looked at within each group. Then, analysis was done from the points of view of different project actors. Quotes from the interviews that were very interesting and helpful were chosen and used to show the results.

Even though most people know how manufacturing firms feel about risk and uncertainty, they don't know much about how risk management is used as a systematic tool in the company. For this survey, a full multiple-choice questionnaire was used to find out about people's attitudes and skills in risk management. The survey questionnaire was sent to construction firms that work in the Greek market. To make sure that all respondents fully understood how the questionnaire was set up, an interview was done with each respondent to explain the main goal

of this survey, which was to find out what kinds of risks there were and what management tasks were needed to control them.

There were three parts to the questionnaire. In the first part, it talks about general things like what kind of construction company is needed and how the organisation works. The second part talks about how important different types of risks are, and the third part talks about what needs to be done to deal with these risks. Answers are turned in in person, by email, or by fax.

List of respondents in the survey

Respondents	Number of Respondents	Percentage of responses
Assets developers	3	6,8%
Architects	10	22,7%
Structural Engineers	12	27,2%
Other Consultants	8	18,2%
General Contractors	6	13,6%
Financial managers	5	11,4%
<u>Total</u>	44	100%

Risk allocation

Through risk allocation in construction contracts, it is impossible to get rid of all possible risks in a building project. So, it's very important for project actors to divide up risk in the right way. Risk allocation changes how project actors act, which has a big effect on how well the project does in terms of total cost. When project risks aren't clearly split between the client and the contractor, it can lead to disagreements. One problem that has been found in the research is that different people have different ideas about who needs to be put in a certain risk or risk group. Usually, contractors say they will take on most of the project losses and price these losses by adding contingency to the bid price.

IV. RESULTS AND ANALYSIS

QUESTIONNAIRE

A total of 23 risk management measures were listed in the questionnaire for risk factors and evaluated for them. Column 1 of Table 7 presents the most important risk types included in the questionnaire without a specific order. These risk types are based on: a) extensive literature review and b) discussion with key experts involved in the survey.

List or results in the survey

Risk Types	Risk Significance			Risk Allocat	
	Not at all	Significant	Important	Owner	Contracto
Permits and ordinances	15%	64%	21%	76%	14%
Lack of Scope of work definition	28%	32%	40%	73%	18%
Delays in obtaining site access	18%	61%	21%	55%	25%
Labor, material and equipment availability	0%	23%	75%	0%	97%
Labor and equipment low productivity	0%	32%	68%	0%	95%
Defective design	0%	24%	76%	55%	18%
Changes in work	18%	60%	22%	75%	12%
Unforeseen site conditions	8%	80%	12%	24%	75%
Unexpected inclement weather	35%	65%	0%	8%	73%
Quality problems of material	21%	41%	38%	0%	76%
Changes in governments laws and regulations	17%	52%	31%	38%	37%
Labor strikes and disputes	39%	55%	6%	0%	96%
Accidents during construction	30%	64%	6%	0%	90%
Inflation and changes in prices	26%	50%	24%	7%	72%
Contractors' incompetence	8%	21%	71%	78%	11%
Change order negotiations	5%	92%	3%	21%	6%
Delays in third parties	4%	21%	75%	18%	60%
Lack of coordination with subcontractors	6%	23%	71%	0%	94%
Delays in resolving disputes	8%	70%	22%	29%	18%
Delayed payment to contractor	0%	18%	82%	77%	11%
Poor quality of work	8%	42%	50%	0%	87%
Financial failure	0%	12%	88%	7%	21%
War threats and political instability	36%	29%	46%	30%	0%

Allocation of risk to the Owner

Important results of this survey are given below. Attitudes towards the allocation and importance of each risk are reviewed in a few words for each.

- Permits and ordinances

The results suggest that the employer is responsible for this accident. Contractors do not take this risk significantly.

- Lack of Scope of work definition

If the project objectives are inaccurate or unclear, the risk owner must take over. It is absolutely necessary to have clear requirements and objectives of the project; otherwise it can easily lead to problems.

- Delays in obtaining site access

This type of risk must be passed on to the owner. Owners participate in projects to save money and time, but this can be very risky and jeopardize the goals of the project.

- Labor, material, equipment availability

The results indicated that this risk belongs to the contractor.

- Labor, material, equipment low productivity

It is one of the most important risks for the contractors.

- Defective design

According to the survey the employer should take this risk. Design does not accomplish this, it may have too many mistakes or it may not be creative.

- Changes in work

The owner should be the only responsible for this risk.

- Unforeseen site conditions.

The results of the survey indicated that this risk should be allocated by contractors.

- Unexpected inclement weather

This type of risk should be shared between owner and contractor.

- Quality problems of material

Although it is referred as risk with low importance, it was found to be the responsibility of the contractor.

- Changes in government laws and regulations

The survey shows that owner can best handle this risk.

- Labor strikes and disputes

The results assign contractors for this risk.

- Accidents during construction

This is the most significant risk for the contractors. Only contractors must assume this risk.

- Inflation and changes in prices

The survey shows that this risk allocation depends on the economic conditions of the country. If the inflation rate is high, or if the employer predicts that the risk is high, and the importance increases; As the rate of inflation is low, contractors are more willing to take this risk and the importance is reduced.

- Contractors' incompetence

The survey shows contractors to handle this risk better.

- Change order negotiations

This type of risk is shared between owner and contractor.

- Delays in third parties

The results of this survey indicate a shift from owner to shared risk.

- Lack of coordination with subcontractors

The results gain shows a shift from owner to shared risk also contractors assign high importance to this risk.

- Delays in resolving disputes

The results denote a shared risk.

- Delays in payment to contractor

The results indicate that owners assume this risk.

- Poor quality of the work

The survey indicates that contractors assign this task to themselves. They also consider it of high importance, after the risk concerning accidents during construction.

- Financial failure

As with inflation, this risk depends on the economic conditions of the country. With a strong economy, contractors are willing to accept the loss, otherwise the contractor will seek a partnership approach.

- War threats and political instability

The survey indicates that it is a sharing risk.

V. CONCLUSIONS

The process of managing risks in a project is not limited to simply making a list of all the benefits and drawbacks or slapping the label "negative risk" on every occurrence that is upsetting and causes a rush of pleasant feelings. Management is a complicated, time-consuming, and far-reaching process that starts a very long time before an investment is made and may occasionally go on even after the investment has been finished. To manage risk in a prudent manner does not mean to avoid it, but rather to accurately identify it and to ascertain all of the accompanying opportunities and dangers.

- The concept of risk is seen as having a negative connotation, despite the fact that in principle it might have two different aspects.
- Construction industry professionals are employing RM approaches mentioned in the literature, but they are unaware that they are doing so. However, they are applying these strategies. Risks are handled on a daily basis in the sector, albeit not in the same organised manner that is described in the relevant literature. Even if the idea of risk management is gaining increasing traction in the construction industry, the level of knowledge about risk management and risk management planning (RMP) is almost nonexistent, as other studies have also found.
- There is a desire among respondents to begin using RMP; but, it must deliver profits to the organisation in order for them to do so.
- It is feasible to spot prospective dangers in a straightforward manner by using a simple strategy. In addition, it offers the opportunity to determine which of the detected risks will have the most influence on the project's timeline, budget, and overall quality. By adopting the necessary precautions, these dangers may be avoided or reduced to an acceptable level. According to the findings of the investigation, the most prevalent response was risk minimization. In addition, it was shown that the outcomes of the probability and effect technique may vary from project to project owing to the fact that the scope of each project is exclusive to that particular project.
- It was essential to determine, over the course of the interview, in which phase of the PLC the respondents were now engaged, as well as what function they played in the overall project. On the basis of this information, we were able to systematise the responses and identify the different sorts of hazards that were detected throughout the various stages of the PLC. The findings led the researchers to the conclusion that each phase of the project has its own unique set of dangers. According to the findings of the study, the construction industry makes use of unstructured forms of RM to a certain level. Therefore, putting real risk management into practise in firms

shouldn't be too difficult. According to the findings of the study, the issue that inhibits organisations from successfully implementing RM is a lack of expertise. Therefore, this facet of the use of RM might be further researched in terms of how to make it easier for people to utilise RM in the construction industry. In addition, a straightforward RM guidebook might be written, which would include not only fundamental theoretical material but also ready-to-implement instructions for one of the RM approaches.

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