

CHAPTER FIVE

Conclusion & Recommendations

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5-1 Conclusions:-

Characterized construction projects conservatively and frequent factors affecting them which makes them susceptible to uncertainty and risks that may affect the goals of the project (cost, time and quality and safety).

This study reviews the knowledge and understanding of the importance of risk management and its application in the construction industry in Khartoum state through questionnaires and interviews with a sample of personnel specialists and summarized the results of the study to be:

- The concept of risk management is not uncommon in the construction sector in Khartoum state.
- Risk management is not included in the approved for companies formalities.
- A large proportion of respondents have confusion between the concept of risk management and the concept of occupational safety.
- (73%) of the sample their organizations do not exist in restructuring administrative specializing in risk management 'and (27%) confirmed its existence but they are not satisfied with the performance.
- (70%) of the sample pointed to the significant impact of the risks to the project objectives (cost - time - quality), which Invites attention to the application of risk management to achieve the goals of the project.
- (79.7%) of the sample did not apply risk management techniques while working for the lack of familiarity with them.
- (68.7%) contend that systems and controls and risk management procedures in Sudan is weak and keep pace with global conditions.
- (89.7%) emphasized the entry foreign firms has helped to raise the degree of interest in the management of risks in the construction industry in Khartoum state.
- (80.6%) said that the Sudanese custom often judged in cases of damages resulting from poor risk management.
- (95.7%) of the sample said that the most important reasons for the differences in construction projects is the lack of adequate studies of the risks and how to afford it.

Through the results obtained of the study It is clear weakness view construction industry in Khartoum State of the importance of risk management and the interest of the application, and therefore it is necessary to draw the attention of the relevant authorities need to pay attention to this specialty to reduce the differences resulting in projects due to poor risk management.

5 -2 Recommendations:

- 1- The majority of engineers, contractors and project managers in Khartoum are unaware of the formal risk management techniques, it is necessary to educate them about risk management by training courses and career development programs.
- 2- Paying attention to construction companies generally to study risks and the allocation of a dedicated team studying and identifies the various risks that can be exposed to each project team would be responsible for managing these risks, and must previous projects similar to the project to be implemented taken into account, and to take advantage of the risks was exposed these projects.
- 3- Include risk management theory and practice within the curriculum taught in institutions and universities to increase awareness and knowledge of this specialty.
- 4- The strategies adopted in the face of danger depends on the type and size of the risk and should take notice of administration to the risk in the project that there is no one strategy suitable to face all dangers.
- 5- requiring apply sanctions on mistakes resulting from poor risk management and away from arbitration in accordance with the Sudanese custom.
- 6- interest in developing the capabilities of the management team of risk in the project in the field styles of diagnosis and risk assessment qualitative and quantitative.
- 7- Use different techniques to identify the risk because it helps to show the various aspects of risk.
- 8- include all parties of project to identify the risks Each of them is a professional perspective and its own expertise.
- 9- must risk management group will continue to work and do not stop until the end of the project because the dangers that may arise indicators at different stages of the project life cycle.
- 10- conscious planning or exact which emerge from a plan to manage the risk in the project is the basis for the success of the team to overcome the risk.

2-5 التوصيات :-

- 1- غالبية المهندسين والمقاولين ومدراء المشروعات غير مدركين لتقنيات إدارة المخاطر الرسمية , فمن الضروري تثقيف هؤلاء حول إدارة المخاطر بالدورات التدريبية وبرامج التطوير الوظيفي.
- 2- ضرورة اهتمام شركات البناء والتشييد بصفة عامة بدراسة المخاطر وتخصيص فريق عمل متخصص يدرس ويحدد المخاطر المختلفة التي يمكن ان يتعرض لها كل مشروع ويتولى الفريق ادارة هذه المخاطر, كما يجب أن تؤخذ المشروعات السابقة المشابهة للمشروع المراد تنفيذه بعين الاعتبار, وذلك للاستفادة من المخاطر التي تعرضت لها هذه المشاريع .
- 3- تضمين إدارة المخاطر نظريا وعمليا ضمن المناهج التي تدرس في المؤسسات والجامعات لزيادة الوعي والمعرفة بهذا التخصص .
- 4- إن الاستراتيجيات المعتمدة في مواجهة الخطر تعتمد على نوع الخطر وحجمه ويجب إن تنتبه ادارة الخطر في المشروع إلى انه لا توجد إستراتيجية واحدة تصلح لمواجهة جميع الإخطار.
- 5- إلزام تطبيق العقوبات على الأخطاء الناتجة عن سوء إدارة المخاطر والابتعاد عن التحكيم وفقا للعرف السوداني.
- 6- الاهتمام بتطوير قدرات فريق إدارة الخطر في المشروع في مجال أساليب تشخيص وتقييم الإخطار نوعيا وكميا.
- 7- استخدام تقنيات مختلفة للتعرف على المخاطر لان ذلك يساعد في إظهار الجوانب المختلفة للمخاطر.
- 8- إشراك جميع أطراف المشروع في التعرف على المخاطر فكل منهم يشكل منظوره المهني وخبرته الخاصة.
- 9- يجب أن تستمر مجموعة إدارة الخطر في عملها وأن لا تتوقف إلا بنهاية المشروع لان الأخطار قد تبرز مؤشراتها في المراحل المختلفة من دورة حياة المشروع.
- 10- التخطيط الواعي أو الدقيق والذي تتمخض عنه خطة لإدارة الخطر في المشروع هو الأساس في نجاح فريق العمل في التغلب على الخطر.

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Appendices

Sudan University of Science and Technology
College of Graduate Studies
MS (Construction management)
Search entitled: risk management in the construction industry in
Khartoum
Prepare the student: Alrsheed Mohammed Suliman

Introduction:

This study aims to determine the extent of the understanding and importance of risk management and the strategy to be applied in order to manage and deal with it in construction projects put.

And to reduce the negative effects and the problems that arise when neglecting this aspect through recognize the reality and the level of application of the concepts of risk management in the construction industry in Sudan.

This is a questionnaire for the purpose of scientific study and all information contained therein will be kept confidential in order to get to see the immediate and future after the drafting of some of the solutions, suggestions and means to overcome these obstacles to raise the level of risk management in the construction industry in Sudan.

Fill out the questionnaire advice:-

- Please read before filling in the questionnaire carefully.
- Questionnaire consists of three parts:
 - The first part has a range of primary data and the nature of the movements developed to assist in the understanding and clarity landmarks entry through the characteristics of the sample.
 - Part Two managerial is a set of questions to a number of themes in order to clarify the matter and axes statement specialist.
 - Part Three of art to illustrate the depth of the study and related aspects and cross-cutting them and find out why and where weaknesses and shortcomings.
- Required after absorbing the question mark (✓) in the appropriate answer.
- Please answer all questions.

Part one:-

1. Name (Optional).....

2. Career.....

3. Workplace (optional).....

4. Years of Experience:

Less than 5 years ☐ between 5-10 years ☐ more than 10 years ☐

5. Age:

• Less than 30 years ☐

• 30-40 years ☐

• 40-50 years ☐

• More than 50 years ☐

The second part (manager): -

1. In any discipline work?

Architect ☐ civilian ☐ Other ☐

2. In any field of work (your institution)?

Consulting ☐ Contracting ☐ Other ☐

In another case explained.....

3. Education:

Diploma ☐ Bachelor ☐ Master ☐ Ph.D. ☐

4. Sector in which they operate:

Government sector ☐ private sector ☐ individual work ☐

5. The nature of the work:

Field work ☐ office work ☐ two together ☐

Part Three (Technical): -

1. Is there a structuring that specializes in risk management in your institution?

Yes ☐ No ☐

2- If you answered yes are you satisfied with the performance of risk management in your institution?

Yes always ☐ in the majority of cases ☐

Sometimes ☐ not always satisfied ☐

3. If the answer is (No) what are your suggestions to correct the situation?

.....

4. Experience in the risk management process?

Low ☐ Moderate ☐ High ☐ Very High ☐

5. Your understanding the risk management process?

Low ☐ Moderate ☐ High ☐ Very High ☐

6. Please specify the extent of your knowledge in the following activities

Activ	Poor	Average	Good	Very good	nothing
Risk identification					
Risk classification					
Risk Analysis					
Risk response					

related to risk management?

7. Based on your experience, please be noted in the table below with regard to the impact of the risks of cost, time and quality to any project?

Activity	Low	average	high	Very High
Cost				
Quality				
Time				

8. from the list below values of the obstacles that prevent companies from

Activity	Very low	Low	Moderate	High	Very High
Cultural					
Structural					
Knowledge					
Other					

the application of risk management systems in the construction?

In case your answer another Explain

.....
.....

9. From the table below, please assess the level of importance of solutions that help in the application of risk management system in Construction?

Activity	Low	average	high	Very High
Training				
The company's ability to change				
Accommodate importance of the application of risk management				
Procedures of formal risk management				
Use of information systems to increase the sensor danger				

10. Have you ever applied risk management techniques during your business?

Yes ☐ No ☐

If the answer is yes, go to the following question:

11. Explain the techniques used in risk management?

.....

12. What are the decisions taken usually in order to mitigation the risks during the construction process?

A brief
description.....

13. During the construction phase are the risks participating or transmitted to another party?

Transfer ☐ participation ☐

14. Based on your experience how to assess the risk management systems in construction projects in the state of Khartoum

Poor ☐ medium ☐ good ☐ very well ☐

15. Controls and procedures for risk management official in Sudan keep up with the global conditions?

Yes ☐ I agree to some extent ☐ No ☐

16. Is the risk management process are included in the official procedures and approved the company?

Yes ☐ to some extent ☐ No ☐

17. Is the entry of foreign companies helped to raise interest in the management of risk scores in the construction industry of Khartoum state?

Yes ☐ to some extent ☐ No ☐

18. Sudanese custom frequently governs in cases of damages resulting from poor risk management.

I agree ☐ somewhat agree ☐ agree olio ☐ never agree ☐

19. Do you think that the lack sufficient studies of the risks and how to carry around are the most important reasons for the differences in the projects?

I agree ☐ somewhat agree ☐ agree olio ☐ never agree ☐

20. Based on opinion: from the Contact Person for the management of risks in construction projects?

Contractor ☐ Engineer ☐ owner ☐ of all male ☐

21. Do you think that the risk management process worthy material cost required to be used, which may reach 10% of the value of the cost of project management?

Yes ☐ often ☐ sometimes ☐ No ☐

22. Based on your experience: Is risk management tools hamper and impede the construction process to some extent?

Yes ☐ often ☐ sometimes ☐ No ☐

23. Do you agree that the use of the computer at the analysis increases the proportion of the health of the analysis?

Yes ☐ often ☐ sometimes ☐ No ☐

Thank you for your kind cooperation

.....**Researcher**.....