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Reasons for Delaying the Constriction Projects in Iraq

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ABSTRACT

This article dealt with construction projects in Iraq, and the research focused on the risks that may affect these projects. The purpose of this study is to determine the risks that construction projects are exposed to in Iraq and the methods of dealing in order to reduce these risks. Sometimes, if the construction projects are similar to each other in terms of configuration, requirements and purpose, then changing the project site is very sufficient to make these projects differ from each other and thus may be exposed to different risks. These are risks that negatively affect the implementation of these projects and may lead to delay or increase in their cost. Here a questionnaire is designed to collect data to identify risks that may occur during the construction project phases. This questionnaire was distributed electronically to several samples in the public and private sectors within state institutions in Iraq. After completion, the risks that these projects may be exposed to were identified. This was done with engineers and managers of companies and projects working in the public, private and joint sectors, and then these risks were analyzed by the Social Sciences for Packet Statistical Test program(SPSS).

Keywords-- Academic Qualification, Government Agencies, Social Sciences for Packet Statistical Test, Payment of Financial Dues, Project Budget, Project Risk Management

I. INTRODUCTION

The construction industry is one of the largest in the world. The increase in growth in this industry is an indicator of the economy and the condition of the country [1]. Construction projects in Iraq, as in other countries, require many resources, including manpower, finance, equipment, machinery, materials, and technical capabilities. All this makes construction projects vulnerable to risks that affect project implementation time and increase costs[2]. It is essential here to understand the nature of risk and its analysis to develop a strategy for managing and dealing with it. Here, the impact of each of them on the project must be explained, along with identifying the methods and procedures used to deal with these risks, which contribute to reducing the occurrence of these risks and their impact on the project. The risks associated with the project work phase must be studied and researched, as well as finding the corrective path that includes a modification in the course of work in one phase of the project's work to reduce these risks and also contribute to raising the level of work efficiency in the project in addition to monitoring and controlling the safety of these plans and verifying that they are under Actually implementation to ensure the safety of the subsequent project work stages [2].

For engineering and construction projects, the most important estimate is the advance and correct financial estimate of the project. Accurate early cost estimates are very important to companies and the engineering team [4]. Good planning for any project is the cornerstone of any good project. Careful planning, combined with good execution, leads to project success[4]. Among the most important objectives of this research:

1. Identify the causes of construction risks in construction projects in Iraq.
2. Determining the construction risks in Iraq.
3. Developing strategies to respond to these risks [3].

An electronic search was performed on (50) samples. Based on a questionnaire conducted to obtain information about the causes of these risks and measures taken to mitigate risks affecting construction projects in Iraq. The main study population in this questionnaire consists of engineers, contractors, and consultants in the Electricity Distribution Directorate, Babylon Governorate, and in Iraq in general [3].

II. LITERATURE REVIEW

Risk management in projects is at present one of the main topics of concern to researchers and practitioners-Tioners who work in project management. Managing the risks designated as one of the project's eight-core areas Body of Knowledge Management (PMBOK) by the Institute for project management, which is the biggest pro-Project management- committed professional company. Also, most Project Training programs Managers have a Risk Management course. Beyond consideration generally recognized in project management as a phase of the life cycle, Project risk management (PRM) is often seen as a

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phase that goes along with the project dentition by preparing, conducting, and control phases before ending and closing [5].

2.1 Project Risk and Uncertainty of a Project

Despite numerous studies of the risks, it still lacks a clear and understandable basis. Here we can come to two basic concepts related to risk: First, there is a consensus among professionals that risks often have negative consequences (delay in time, financial loss, etc.). Sometimes the risks can be positive . The positive risk here means any situation, situation, or event that will provide a potentially positive impact on the project. There are many examples of positive risks in projects: you can complete the project early; Or perhaps the delay in some paragraphs sometimes leads to more time to start another paragraph that was not planned insufficient time and so on [6].

2.2 Estimate the Cost and Level of Project Development

There are four main levels of risk mitigation.

1. **Planning:** early and appropriate planning to assess all project needs for funding and time for each paragraph, as well as to prioritize the necessary needs.
2. **Define Scope:** It is used to set the basic cost of the project.
3. **Design:** Pre-made estimates are used at different design levels to track changes in the estimated cost to complete a project in relation to the current budget initially allocated to the project.
4. **Final Estimate:** The engineer's estimate is prepared for the final review of the contract in preparation for the announcement and is used in allocating funds for construction as well as for evaluating contractors 'bids for the purpose of obtaining[1].

2.3 The main risks in projects

1. Customer risks
2. The risks are due to the designers
3. Risks due to contractors
4. Risks due to subcontractors
5. Risks caused by government agencies
6. Risks related to external issues
7. Incorrect risk management plan [7].

III. METHODOLOGY AND RESEARCH DESIGN

The descriptive-analytical approach that relies on studying the reality as it is, in reality, was used to arrive at the results of the questionnaire, and by collecting and analyzing data statistically to test the validity of the study hypotheses. Statistical analysis of the data aims to test the following hypotheses:

1. The contractor bears full responsibility for most of the risks in the construction industry in Iraq.
2. Pre-construction risk management is not used in Iraqi construction enterprises.
3. Most of the risks are mitigated when they occur.

The survey questionnaire was designed to meet the required purpose of the study population and the selected sample statistically, and then the questionnaire was prepared in its final form.

The questionnaire was taken for 50 samples from the total population. The questionnaire form:

Part 1 / Personal Information

1. Academic qualification :

◯ Bachelor's degree ◯ Higher Diploma
◯ Master ◯ PhD

2. Years of Work Experience

◯ Less of 5 ◯ 5 – 10
◯ 10 -15 ◯ More than 15

3. Type of work

◯ Contractor ◯ Owner
◯ Advisor ◯ Other

4. Sector Type

◯ Public ◯ Special
◯ Public and private

5. Current Workload

◯ Big project ◯ Medium project
◯ Small project

Part 2 / Means of Remedying the Effects of Risks

A / Risks Before the implementation stage:	Always	Sometimes	Not used
1.Use quantitative risk analysis methods 2.Relying on the experiences of previous projects 3.Add extra time reserve 4.Transfer of risks with project parties 5.Refer to similar projects for an accurate program 6.Constantly create an updated schedule 7.Use of modern systems			

B / During the implementation phase:	Always	Sometimes	Not used
1.Increased labor and/or machinery 2.Increasing working hours 3.Change the sequence of implementation processes or overlap between them 4.Full coordination with subcontractors 5.Close supervision of works to eliminate rejection of workers and re-implementation			

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Risk rating	Responsibility of risk			
	The owner	The contractor	The Consultant	Another party
1. Physical and human risks.				
The low production capacity of workers/breakdown of the machine				
Supply of low-quality materials				
Accidents happen due to a lack of safety precautions				
2. Environmental and natural risks				
Natural disasters (floods)				
Difficulty accessing the site				
Inappropriate weather conditions				
3. Design risks				
A mismatch between architectural and structural plans accuracy in calculating quantities				
A mismatch between quantities, plans, and specifications commissioning to incompetent designers				
4. Logistical risks				
Inaccurate project scheduling				
Poor communication within the working range				
Shortage of labor, machinery, and materials				
5. Financial risks				
Inflation				
Delayed payments as per contract				
Exchange rate instability				
Poor management of the contractor's cash flow				
6. Legal risks				
The emergence of legal disputes during the implementation phase between the project parties and the delay in resolving them				
Difficulty obtaining the necessary permits to work				
7. Risks directly related to the implementation				
Low level of quality of work due to time constraints of implementation				
Design change				
There is a difference between real and nodal quantities				
Implementation errors due to a misunderstanding of the plans, terms, and specifications				
8. Political				
New government laws affecting work				
Security instability				
9. Administrative risks				
Lack of necessary information				
Poor communication between the project parties				
Unclear planning due to project complexity				
Poor management of resources				

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IV. RESULTS

The statistical data analysis is done by computer using Statistical Package and Social Sciences for Packet Statistical Test (SPSS) software. To verify the validity and reliability of the questionnaire through internal consistency, correlation coefficients were calculated, which is a statistical measure to measure the strength of the relationship between the relative movements of two variables. Values range from (-1.0 to 1.0). The number is either greater than 1.0 or less than -1.0 which means that there is a correlation measurement error. This shows that the variables move in opposite directions - for a positive increase in one variable, there is a decrease in the second variable. If the correlation between two variables is 0, then there is no linear relationship between them. The strength of the relationship varies in degree based on the value of the correlation coefficient. For example, a value of 0.2 shows that there is a positive relationship between two variables, but it is weak and likely, not significant. Analysts in some areas of study do not consider correlations important until the value exceeds at least 0.8. However, a correlation coefficient with an absolute value of 0.9 or more represents a very strong correlation. Where the probability value is Sig. The associated correlation coefficients are less than the test-specific significance level $\alpha = 0.05$. Accordingly, we conclude that the variable is true for what was measured[8].Constructive validity was also calculated, meaning constructive validity. It is one of the measures of the validity of measures, and it measures the extent to which the scale wants to reach, and it shows the extent to which each dimension of the study is related to the overall score of the paragraphs of the questionnaire [9]. Reliability was also calculated, which means accuracy and consistency of the respondents' answers, and consistency in results regardless of test frequency[10].

A fixed scale (questionnaire) is one that gives the same results that were applied to the same individuals and in the same circumstances again, as it indicates the extent of impartiality (free of errors) and indicates that the observed result from one of the measures is the true result of this scale. Among the most popular and important measures of measuring internal consistency for questionnaire paragraphs is Schönbach alpha, and Cronbach alpha values usually range from 0 to 1, with (0) indicating no relationship between items on a given scale, and (1) indicating absolute internal consistency. The value of the alpha correlation coefficient higher than (0.7) was acceptable and satisfactory, and higher than (0.8) which is very good, and it is considered higher than (0.9), and it reflects high internal stability[11]. Self-validity is an assessment of the extent to which the instrument measures what it is designed to measure, that is, the degree of validity of the results, and it determines whether the results obtained meet all the requirements of scientific research. method. Mathematically, honesty is the square of reliability[11].To ensure the validity and reliability of the questionnaire, the following statistical analyzes were performed:

Table 1: Reliability and validity coefficient

Variable	Dimension	Number of items	Cronbach's alpha	Self-Validity Coefficient
Classification of risks	9	29	0.89	0.94
	Physical and human risks.	3	0.88	0.94
	Environmental and natural risks	3	0.84	0.92
	Design risks	4	0.86	0.93
	Logistical risks	3	0.89	0.94
	Financial risks	4	0.79	0.89
	Legal risks	2	0.81	0.90
	Risks directly related to the implementation	4	0.77	0.88
	Political risks	2	0.79	0.89
	Administrative risks	4	0.88	0.94
Means of remedying the effects of risks	2	12	0.83	0.91
	Before the implementation phase risk	7	0.85	0.92
	During the implementation risk	5	0.80	0.89

1. Internal Consistency

The internal consistency was calculated by the (SPSS) program and the correlation coefficients were calculated between each paragraph of the risk rating scale and the overall score of the variable, indicating that all correlation coefficients are statistically significant as the probability value is Sig. The associated correlation coefficients are less than the test-specific significance level $\alpha = 0.05$. Therefore, we conclude that the variable is correct as it was.

2. Constructive Validity

The constructive validity was also calculated and it became clear that all correlation coefficients for all dimensions of the questionnaire are statistically significant because of the level of significance (Sig.) Associated with the correlation coefficients for the total degree of the questionnaire items is less than the specified likelihood value for $\alpha = 0.05$.

3. Reliability

When calculating reliability by finding Cronbach's alpha coefficients, which were all greater than (0.70), this is considered very acceptable from an administrative and statistical point of view, as the validity ratio indicates the accuracy of the measurement tool for the study. These results indicate that the prepared questionnaire will measure what has been developed to measure it with high accuracy as shown in table (1).

V. CONCLUSION

The long implementation period as well as interruptions during work, in most cases, lead to changing circumstances, which leads to multiple and sometimes unpredictable risks. Among the most important risks facing projects, which I concluded from the analysis that was based on the results of the above questionnaire:

1. There is a clear and major weakness in deducing the risks expected to occur in construction projects in Iraq.
2. The lack of a special department for risk management in most construction companies and establishments in Iraq.
3. Not using modern means to reduce risks before the construction stage.
4. Addressing or mitigating all risks, usually during the construction stages and when the danger occurs.
5. The contractor bears full responsibility for most of the risks involved in Iraqi construction projects.
6. Sometimes, due to the owner's delay in paying the financial dues, this leads to a delay in completing the project on time and with the required quality, and this leads to increased costs, delayed completion of the project, and low quality of implementation because of the contractor who will try to complete the work quickly to reduce wasted time.
7. The causes of risks must be determined in advance by studying previous projects similar to the one to be sought, studying the risks exposed to and developing strategies to respond to them.

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