

# Impact of Integration Management on Construction Project Management Performance (Oil Refining Company)

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## Abstract

The purpose of this study was to investigate the effect of project risk management. The statistical population of this study was made up of all employees of Oil Refinery Company, which number was 4652 persons. According to Morgan table, 351 individuals were selected and selected by simple random sampling method and participated in the research. In this research, two risk management project questionnaires, including four dimensions and 30 questions, were used. Validity of the questionnaires was confirmed by experts and their reliability was confirmed by Cronbach's alpha 0.82. Structural Equation Modeling Technique (AMOS-22) was used to test the research hypotheses. The results of the research showed that the project risk management dimensions are content, in terms of outcomes, in terms of activity and in terms of conditions.

**Keywords:** Project Risk Management, Strategic Management, Oil Refinery Company

## 1. Introduction

Projects are a set of unique activities that are carried out to achieve a unique goal within a specified time frame and at a specified cost and quality, and also the risk is an integral part of any project. Therefore, project managers need to In order to increase the success factor in achieving the project objectives, the risk management project should be taken into serious consideration (Golleh and Shehni, 2015). The role of risk management in project success is undeniable. Risk management involves the identification, measurement, and response to risk steps. There are many methods for each risk management process, but the main point is to choose an effective method according to the specific circumstances of each project (Rashno and Mahjub, 2016). Today, a life-cycle project faces many risks and risks that, when faced with each one, their results should be evaluated and evaluated. Risk Management is a systematic process of identifying, analyzing and reacting to project risk. This management involves maximizing the probability and consequences of positive events and minimizing the probability and consequences of negative events in line with the objectives of the project. The project risk is an uncertain situation or event that, in the event of an event, has a positive or negative effect on the project's objectives. If the risk has a negative impact on the project's goals, it is a threat and, if it has a positive effect, is called an opportunity (Heydari and Chavoshi, 2014). Features such as the uniqueness of the project and the uncertainty in the assumptions, goals and objectives of the project, and as a result of the environmental factors governing the project, have roots in the uncertainty and the source of the risk in the projects. The scope of uncertainty in projects is very wide and include uncertainties in the basics and initial estimates of the project, uncertainty in project design and procurement, and uncertainty in project objectives. The above conditions risk projects and risk management in projects is unavoidable (Monjezi et al., 2011). Project risk management is one of

the major areas of project management, and some project management engineers have identified project risk management as equivalent. In recent years, the need to identify and address the risks to the project has attracted the attention of many researchers, which has led to the development of risk management knowledge (Jafari et al., 2014). On the other hand, strategic risk management is an approach to risk management that aims to support the strategic objectives of the organization and seeks to provide appropriate grounds for achieving these goals by adopting preventive measures. In other words, strategic risk management is the process of identifying, evaluating and managing each organization's strategic risks with the goal of maintaining and creating value for business owners. This requires a strategic attitude towards risk and attention to how internal and external events affect the organization's ability to achieve goals. Themselves, are affected. This task is a continuous task and should be considered at the time of strategy and strategic management (Frigo & Anderson, 2012). Among the various industries, it may be argued that oil and gas industry is more exposed to various risks than other industries, which, if not managed properly, will lead to poor performance, cost increases, and delays. Risk assessment in these industries is a complicated issue due to the ambiguity and environmental uncertainty (Nahravanian, 2014). Although there are huge investments in the oil and gas industry to minimize existing risks and barriers, there are still dangers and, alternatively, incidents occur, so it may be necessary that instead of many efforts to control this risk, setting up more investment on minimizing risk before starting work. Also, in recent years, with the intensification of foreign sanctions against Iran, major oil companies in the world have left oil refinery projects and these projects have been provided by domestic start-up companies. One of the major challenges in the life cycle of these projects is that, as a rule, everything is not scheduled, it does not go away, and there are risks and mistakes, or even positive and unexpected events, that the timely identification and evaluation of these positive and negative events, it is considered to be a risk to them. It will have a significant impact on the fate of the

project. Therefore, the present study aims to answer the following question using the available statistics and data collection tools (questionnaire) and data analysis, after examining the determinants of project risk management: What are the risk management factors in Oil Refining Company?

### 2. Research Methodology

The present research is based on the objectives of the applied research group. Because the findings from this research are the basis for recommendations and suggestions for companies that can be used to improve and improve the quality of these organizations. According to the method of data collection: Based on how to obtain the desired and required data, the research is in the correlation group. Because using the structural equation model and path analysis method, it tests the relationships between the variables. According to the time of data collection: a survey (cross-sectional) study. According to the nature of the data, there is a quantity. Because in this way, the researcher is interested in converting research data into mathematical symbols in order to use statistical and mathematical capabilities to describe and analyze social phenomena. The statistical population of this research was composed of all employees of Oil Refinery Company, which number was 4652 persons. According to the Morgan table, 351 samples were selected and selected by simple random sampling method and participated in the research. In this research, two risk management project questionnaires, including four dimensions and 30 questions, were used. The validity of the questionnaires was confirmed by experts and their reliability was confirmed by Cronbach's alpha 0.82. Structural Equation Modeling Technique (AMOS-22) was used to test the research hypotheses.

### 3. Findings

Structural equation modeling was used to investigate the research data according to Fig. 1.

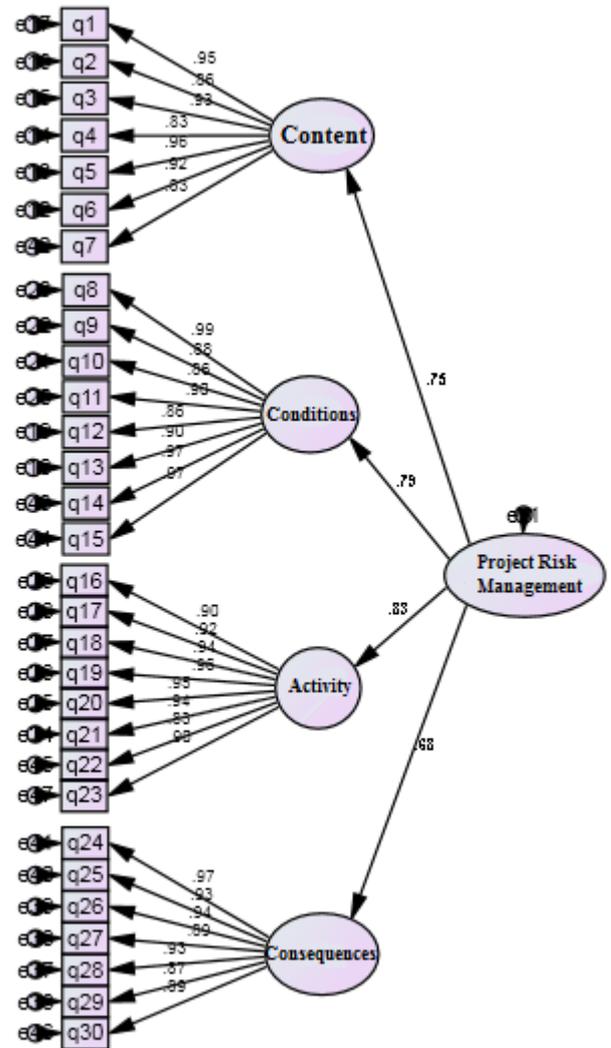


Figure 1: Structural Model The first sub-hypothesis of the research in standard estimation mode

Structural model fitness indicators show that this model is approved to examine the first hypothesis of the research.

Table 1: Structural Model Fitment Indicators

Indicator	Desired limit	Structural model
X2/df	3 and less	1.106
RMR	Close to zero	0.002
GFI	0.9 and higher	0.919
NFI	0.9 and higher	0.931
CFI	0.9 and higher	0.918
RMSEA	Lower than 0.08	0.030

According to the structural model, in the table below, the standard coefficients between the variables and their significance level are presented in order to examine the model.

Table 2: Reviewing the research model

Relation		Standard coefficient	Critical Ratio (CR)	The result of the hypothesis
In terms of content	→ Project Risk Management	Confirmation	Confirmation	Confirmation
In terms of conditions	→ Project Risk Management	Confirmation	Confirmation	Confirmation
In terms of activity	→ Project Risk Management	Confirmation	Confirmation	Confirmation
In terms of outcome	→ Project Risk Management	Confirmation	Confirmation	Confirmation

According to Table 2, the summary of the results is as follows: It can be said that the dimensions of project risk management are content dimensions, conditions, activities and outcomes.

## 4. Results

The present study was conducted to investigate the impact of project risk management. Structural Equation Modeling Technique (AMOS-22) was used to test the research hypotheses. The results of the research showed that the project risk management dimensions are content-based, in terms of outcomes, in terms of activity and in terms of conditions. The findings of this research indicate that there is a significant effect of project risk management on strategic management at Oil Refining Company. As a result, using more risk management in a company, strategic management improves or vice versa.

Based on the results of the research, the following suggestions are presented to the managers:

The probable risks affecting the project are determined and the characteristics of each one are documented. The risks that are emphasized by the project manager are beyond the scope or control of the project or need to be considered for action or action outside the project.

The risk threshold is accepted and agreed upon for the project to be considered as the basis for how to respond to the risk.

The risks identified are comparable to those of the general terms of the treaty.

The scheduling schedule for activities related to the risk management process is to be prepared and included in the schedule of the project.

The costs for the risk management process activities are estimated to be included in the project's core costs.

Possible outcomes in the project with the probability of occurrence.

The complexities of entering multiple risks and predicting their likely outcomes that are beyond the capabilities of an individual's mind are analyzed and analyzed.

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