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Risk Management Practices in Environmental Projects: A Case Study of the Jordanian Ministry of Environment

Dr. Mervat Mohmmad Al Mhirat[1], Dr. Hani Jazz'a Irtemeh[2]

[2]*World Islamic Science & Education University*
[1]*Email: malmhirat@yahoo.com*

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ABSTRACT

Introduction: The concept of risk management emerged as a continuous process followed by any project to address the risks associated with its activities and implementations. It is concerned with the investigation of the risks involved in the project to enable project management to deal with future risks and difficulties that could hamper its progress.

Objectives: The purpose of this study is to identify the extent to which there are differences in the risk management of projects of the Jordanian Ministry of Environment and its success, as one of the government ministries, based on its strategy on projects.

Methods: To achieve the objectives of the study descriptive analytical approach was deployed. A questionnaire-based was developed, consisting of 42 paragraphs; out of 500 questionnaires were distributed; (430) questionnaires were received, with a return rate equal (86%), all were valid and reliable for further analysis.

Results: The study arrived to a set of important results, among the most: That the Jordanian Ministry of Environment does not give adequate attention to risk management, because all risk management dimensions were low from the point of view of the sample members of the study. Moreover, the level of success of the Jordanian Ministry of Environment's projects was low. In addition, the study found that there were significant differences in the risk management at ($\alpha \leq 0.05$) attributed to the purpose of the project, the total duration of the project, and the job position. While there were no significant differences at ($\alpha \leq 0.05$) attributed to geographical location, number of years of work in projects, project experience, and qualification.

Conclusions: The study highlights that the implementation of risk management in the projects of the Jordanian Ministry of Environment is generally perceived as low by the study's participants. This shortfall in risk management is reflected in the diminished success rate of the projects, suggesting a need for stronger frameworks, clearer strategies, and more effective tools to address and mitigate risks throughout the project lifecycle.

Keywords: Risk Planning, Risk Analysis, Risk Response, Risk Evaluation and Feedback, Jordan Ministry of environment

1. INTRODUCTION

The concept of risk management emerged as a continuous process followed by any project to address the risks associated with its activities and implementations. It is concerned with the investigation of the risks involved in the project in order to enable project management to deal with future risks and difficulties that could hamper its track. In addition, it contributes to the efficient use of resources that

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affect the success of the project. The Project Management Institute (PMI) [1, 2] considers project management to be one of the ten parts of knowledge building the most important and difficulties in the project management areas. Risk management consists of four main steps: planning and definition, risk analysis, risk response, risk review and assessment.

Risks can be classified into two types and may have potential negative effects as follows: First, the traditional risks are based on physical or legal causes such as natural disasters, fires, accidents, etc. Second, the intangible risks such as those dealing with knowledge, efficiency, communication and relations between contracting parties; adhering to the timetable for completion and achieving performance, operational efficiency and quality standards, and risks related to the inability to provide the necessary human resources and labor, and the failure of contractors and suppliers to meet their contractual obligations as a result of inappropriate risk management or non-compliance with their proper applications. Previous studies in project management in information technology and construction have shown that the application of risk management has affected project performance in terms of efficiency, performance improvement and productivity enhancement. Moreover, the lack of project risk management is one of the reasons for failure of projects, such as failure to comply with the deadlines of the project, increasing cost and poor quality performance. Till now, the use of risk management in environmental projects and its impact on their success is undiscovered. Moreover, there is a lack of studies on the subject. This study was conducted to identify the level of risk management in environmental projects submitted by the Jordanian Ministry of Environment and their success and to identify the extent of differences in risk management related to demographic variables.

1.1 Study Important

The importance of this study is that it is one of the few rare studies which examines the actuality of applying risk management in Jordanian environmental projects or Arabian projects in general. It is hoped that the results of this study will benefit the Jordanian Ministry of Environment and other similar Jordanian governmental environmental projects, taking into consideration the role of risk management in the success of its projects.

1.2 Research objectives

The research aims to achieve the following objectives:

1- Identify risk management standards in the projects of the Jordanian Ministry of Environment.

- Identify the level of applying risk management in projects in the Jordanian Ministry of Environment.

- Identify the level of success of projects in the Ministry of Environment.

- To identify the extent of statistical differences in respondents' responses to risk management attributed to demographic factors.

- Provide a set of recommendations related to the subject of the study.

1.3 Research problem

Recently, risk management has been one of the most challenging business environments. Moreover, risk management has become an element that can not be ignored when preparing and implementing project plans. Many researchers argue that risk management is one of the most important tools of project success. In addition, they argued that projects could not face their risks and negative effects, if organizations do not adopt risk management activities systematically and continuously or for lack of awareness of risk

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management. The problem of the study emerged through the observation of the researcher through her practical experience in this area. The problem is the lack of knowledge among the project administrations about the level of application of risk management in Jordanian environmental projects, which may affect their success. To sum up, the current study tries to answer the following questions:

- What is the level of applying risk management in projects in the Jordanian Ministry of Environment?
- What is the level of success of projects in the Ministry of Environment?
- Are there statistical differences in respondents' responses to risk management attributed to demographic factors?

1.4 The main hypothesis

H0: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to project identification factors.

Sub hypotheses:

H01: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to purpose of the project.

H02: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to geographical location.

H03: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to total duration of the project.

H04: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to Number of years of work in environmental projects.

H05: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to project experience.

H06: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to Qualification.

H07: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to the job position.

2. THEORETICAL BACKGROUND

management of all types and forms of risk that may be exposed effectively. This reason imputes organizations to develop risk management programs where the responsibility of risk management lies on the management by designing and implementing risk management programs within the organization and it's carried projects [3]. Miller (2001) [4] presented a theoretical framework for risk management in projects consists of eight components: internal environment risk, goal setting, event identification, risk assessment, risk response, control activities, information and communication, and follow-up. Previous studies have listed several definitions for risk management for example, Sanchez et al., 2009) [5] defined risk is the possibility of a deviation from the expected desired or desired outcome, and its main objective of risk management is to measure risk for monitoring and control. PMI (2014) [1,2] perceived Risk as the probability of loss or profit arising from uncertainty. According to (Thomas, 2008)[6] risk is the failure of projects to achieve the desired goals and that these risks arise from several factors related to the surrounding potential threats to projects and their potential to take appropriate

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action to address these threats and to verify their likelihood as consideration of these possibilities leads to action to reduce these risks. Bagliano al.(2015) [7] argued that there are many techniques may be used to control risks at the lowest possible cost, including risk avoidance methods through loss prevention, control, or project rejection before the organization is exposed to further loss arising from a particular activity.

Project risk management aims to implement projects according to the approved budget, on time and within the required specifications. Risk management has been closely associated with project management as one of the potential threats to the project, which may lead to disparities in achieving the pre-defined objectives and the success of the project (Holt, 2004) [8]. The traditional view of project risk management emphasizes the importance of planning as one of its main processes and linked to project activities in an integrated way throughout its life cycle (Dvir et al., 2002) [9]. Several models and frameworks for risk management and managing project uncertainties have appeared as an attempt to better regulate and apply risk and uncertainty management (Mills, Donald, 2001) [10]. Olsson (2008) [11] argued that risk management is critical to the success of the project as the organization is able to deal with various risks and threats. In addition, he confirmed that it is a mistake to face threats individually. Where organizations tend to launch several projects simultaneously for their development and more efficient work, new risks arise in the individual project as a result of project dependencies (PMI, 2008) [1]. The project management institute supports the broad risk management trend involving reallocation of resources between projects, taking into account the additional risks and problem detection (Sanchez et al., 2009) [5]. In addition, the ability to deal with risks, and the correctness of the information on which actions are taken.

3. RESEARCH METHODOLOGY

TThe descriptive analytical approach is the most suitable approach for this study. The Descriptive is related to describing the phenomena in its natural context whilst the analytical approach is concerned with collecting real data about the phenomena under investigation in order analyze, measure, and explain the data to offer a solution for the problem. The population of this study consists of all the Jordanian ministry of environmental projects which represents (62) projects. The sample of this study consists of (500) individuals working on the 62 projects of the environment ministry projects.nit of analysis.

The unit of analysis for this research represents all employees and partners working at Jordan environment ministry projects that were determined in strategic plan for ministry of environment which represents 500 individual and because of the small size a decision was to survey all.

3.1 Content Validity

The validity of research tool depends on its ability on collecting the relevant data and measured the variables. Therefore, the researcher checked the content validity by circulating the research questionnaire to a panel of experts (16 members) in the research topic working at state and private university to check the face validity and the relevance of each item to the related construct. The panel suggests moderation deletion, and re-writing some of the questionnaire items. After taking all the suggestions in our account, a new version of the questionnaire was issued and circulated to the research sample.

3.2 Reliability Test

In this study Cronbach's Alpha was used, reliability scores are expressed numerically as a coefficient. A coefficient score will be 1.00 if a test is perfectly reliable. Coefficient of at least 0.60 is required to indicate an acceptable degree of reliability [11,12].

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Table (1): Cronbach's Alpha

Construct	Cronbach's Alpha
Risk Planning	85.13
Risk Analysis	87.62
Risk Response	80.74
Risk Evaluation and Feedback	76.20
Time	84.34
Cost	83.26
Quality	72.90
Satisfaction	86.69

Table (1) shows that Cronbach's Alpha coefficient value for independent variables was ranging from 0.762 and 0.876 and for dependent variables were ranging between 0.729 and 0.866 which means that Cronbach's Alpha coefficient value is accepted and highly reliable.

3.3 Statistical Analysis

Respondents' Demographic Description:

This section describes the descriptive and demographic characteristics of the study sample, as shown in table (2).

Table (2): percentages according to demographic variables

Variable	Options	Number	Percentage%
Number of years of work in Ministry of Environment projects	Less than 5 year	**204**	**47.7**
	5 year – 10 years	**109**	**25.3**
	11 year – 15 years	**100**	**23.3**
	16year – 20 years	**4**	**0.9**
	More than 20	**13**	**3**
Project Experience	Less than 5 year	**235**	**58.8**
	5 year – 10 years	**127**	**29.5**
	11 year – 15 years	**42**	**9.8**
Qualification	16year – 20 years	**5**	**1.2**
	More than 20	**3**	**0.7**
	Diploma and less than	**61**	**14.2**

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4. RESULTS AND DISCUSSION

Answering the first question: What is the level of applying risk management in projects in the Jordanian Ministry of Environment?

To answer the first question, it is necessary to identify the level of risk management dimensions (risk planning, risk analysis, risk response, risk evaluation and feedback) as follow:

1- Risk planning:

Table (3) Mean, Standard Deviation, ranking and importance of risk planning.

Items	Mean	St. D.	Importance	Rank
The Ministry identified appropriate	2.1744	1.03316	Low	**2**
The ministry based on the accumulated experience of the specialists working in	2.1093	.93103	Low	**3**
The project risk management plan takes into consideration the project's time	2.1163	.81676	Low	**4**
The Ministry takes threats that may pose a	2.0907	.82142	Low	**5**
When planning to deal with risk, decisions are made in a collaborative manner.	2.0349	.86161	Low	**6**
Information is always available to all project stakeholders.	2.2442	1.02346	Low	**1**
	2.2093	.84617		

Table (3) shows that, the means of the risk planning variables are ranged between (2.0349 -2.2442) with standard deviation ranges between ".81676 to 1.03316" with low approval ratings. The average mean of risk planning variables is 2.2093with standard deviation .84617, which mean there is a low importance for risk planning.

2- Risk Analysis

Table (4) Mean, Standard Deviation, ranking and importance of risk analysis.

Items	Mean	St. D.	Importance	Rank
The Ministry performs risk analysis according to their nature and the impact in agreement with	2.1814	.87420	Low	1
The statistical methods used by the Ministry to assess the degree of risk are consistent with the risk	2.1093	.86078	Low	4

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The Ministry takes into consideration unexpected risks.	2.1256	.85719	Low	2
The Ministry adopts quantitative methods in identifying uncertainties risks.	1.9884	.84586	Low	7
The Ministry identifies internal risks when designing projects.	2.0930	.86134	Low	6
The Ministry takes into consideration the reasons for the risk of communication with all	2.1047	.85046	Low	5
The Ministry takes into consideration the reasons that may lead to potential risks during	2.1233	.82568	Low	3
	2.1523	.71411		Low

Table (4) shows that, the means of the risk analysis variables are ranged between (2.1814 -1.9884) with standard deviation ranges between "82568 to .87420" with low approval ratings. The average mean of risk analysis variables is 2.1523 with standard deviation .71411, which mean there is a low importance for risk analysis.

3- Risk Response

Table (5) Mean, Standard Deviation, ranking and importance of risk Response.

Items	**Mean**	**St. D.**	**Importance**	**Rank**
The Ministry adjusts the project plan by modifying the risk response methods.	2.0814	.83086	Low	5
The Ministry adopts contingency plans.	2.1372	.85948	Low	1
The Ministry deals with unwanted risks	2.1326	.89735	Low	2
The Ministry adopts response strategies according to the financial needs of the project.	2.1000	.81464	Low	4
the Ministry follows clear strategies to address risks	2.1023	.80716	Low	3
	2.0919	.83086		Low

Table (5) shows that the means of the risk Response variables are ranged between (2.0814 -2.1372) with standard deviation ranges between ".80716 to .89735" with low approval ratings. The averages mean of risk Response variables are 2.0919 with standard deviation .83086, which mean there is a low importance for risk Response.

4- Risk Evaluation and Feedback

This table presents an analysis of the results of the mean and standard deviations related to the risk evaluation and feedback.

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Table (6) Mean, Standard Deviation, ranking and importance of risk evaluation and feedback.

Items	Mean	St. D.	Importance	Rank
The Ministry archiving all their project documents for the purpose of evaluating the	2.0419	.74678	Low	3
The project manager in the ministry follows the risks of the projects he responsible on.	2.0349	.78220	Low	4
The ministry analyzes all projects after finishing.	2.1512	.95977	Low	1
The Ministry assesses the effectiveness of risk response strategies at the end of the project	2.1302	.87000	Low	2
.	2.1337		Low	.

Table (6) shows that, the means of the risk evaluation and feedback variables are ranged between (2.0349 -2.1302) with standard deviation ranges between ".74678 to .95977" with low approval ratings. The averages mean of risk Evaluation and Feedback variables are 2.0919, which mean there is a low importance for risk Evaluation and Feedback.

Answering the second question: What is the level of success of projects in the Ministry of Environment?

To answer the second question, it is necessary to identify the level of projects success dimensions (Time, Cost, Quality and Satisfaction) as follow:

1- Time

Table (7) Mean, Standard Deviation, ranking and importance of time

Items	Mean	St. D.	Importance	Rank
The Ministry prepares a scheduling and time plan using different techniques At the beginning of the project.	2.0814	.79940	Low	5
Frequent meetings are held to discuss the achievements and outputs of the implementation plan.	2.0395	.79966	Low	6
There is a discussion of the achievements of the project with the owner of the project	2.1744	1.01494	Low	3
Schèduling is done in partnership with contractors and suppliers	2.1674	.83895	Low	4
Compensation time is appropriate for employees	2.2000	.88605	Low	2
Completion of the project is delayed due to the non-use of scheduling programs.	2.2372	.89781	Low	1
	2.1337	.71784		Low

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Table (7) shows that, the means of the time variables are ranged between (2.0395 - 2.2372) with standard deviation ranges between ".79940 to 1.01494 " with low approval ratings. The averages mean of time variables are 2.1337.

2.Cost

Table (8) Mean, Standard Deviation, ranking and importance of cost

Items	**Mean**	**St. D.**	**Importance**	**Rank**
Project costs are associated with the planned schedule.	2.1930	.8862		**3**
The Ministry controls the cost of projects.	2.2651	.88733	Low	**1**
The Ministry monitors the cost of the project electronically.	2.230	.9438	Low	**2**
Project costs are based on past and current financial information.	2.1326	.84655	Low	**4**
	2.1628	.75278	Low	

Table (8) shows that, the means of the cost variables are ranged between (2.1326 - 2.2651) with standard deviation ranges between ".84655 to .94389" with low approval ratings. The averages mean of time variables are 2.1628.

3-Quality

Table (9) Mean, Standard Deviation, ranking and importance of quality.

Items	Mean	St. D.	Importance	Rank
The Ministry applies the technical conditions and specifications of the project.	2.0442	.83925	Low	5
The Ministry is concerned with the training process	2.0581	.86035	Low	4
The Ministry maintains the quality of decisions	2.2535	1.72285	Low	1
The Ministry monitors the commitment to project quality	2.1698	.92694	Low	2
There is aproject quality assessment system	2.1023	.85212		3
	2.0756	.74841		Low

Table (9) shows that, the means of the quality variables are ranged between (2.1326 - 2.2535) , with low approval ratings. The averages mean of quality variables are 2.0756.

4-Satisfaction

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Table (10) Mean, Standard Deviation, ranking, and importance of Satisfaction.

Items	Mean	St. D.	Importance	Rank
The Ministry identifies stakeholders	2.0442	.83925		**5**
The Ministry identifies stakeholders based on clear criteria	2.0581	.86035	Low	**4**
The Ministry communicates with stakeholders periodically.	2.2535	1.72285	Low	**1**
The Ministry depending on feedback which comes from stakeholders.	2.1698	.92694	Low	**2**
The Ministry discloses all information about their projects.	2.1023	.85212	Low	**3**
	2.0756	.74841		Low

Table (10) shows that, the means of the Satisfaction variables are ranged between (1.9628 -2.1721), with low approval ratings. The averages mean of Satisfaction variables are 2.0756.

Answering third question

3.Are there statistical differences in respondents' responses to risk management attributed to the demographic factors.

Testing Study Hypothesis

First Sub-Hypothesis

Ho1: There are no significannot differences at ($\alpha \leq 0.05$) for project risk management at the Jordanian Ministry of Environment attributed to purpose of the project.

Table (11) Mean, Standard Deviation according purpose of the project.

purpous of the project	**Descriptive statistics**					
		1	2	3	4	5
Risk Managment	**Mean**	1.9654	2.0876	2.3152	2.2833	2.2727
	St. D	.75078	0.64149	0.78697	0.89427	0.88273

The mean in Table (11) indicates that there are statistical differences between the sample estimates toward risk management according to the purpose of the project. To find out if these differences are significannot, a One Way ANOVA was conducted as clarified in table (12)

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Table (12): One Way ANOVA for the differences in the means toward risk management according to the purpose of the project

purpous of the project	**Source of Variation**	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Level of Sig.**
	Between groups	9.495	4	2.374	4.060	0.003
	Within groups	248.471	425	0.585		
	Total	257.965	429			

Table (12) shows that there were significannot differences at (α≤ 0.05) in the means of the study sample toward risk management according purpose of the project. The F- value was 4.060. It was significannot at (α≤ 0.003). To find out the source of differences, Scheffe test was used as shown in table 13.

Table (13): Scheffe test for the differences between the means toward risk management according to the purpose of the project

Study Variable	**purpous** of		1	2	3	4	5
Risk Managment	the project	Mean	**1.9654**	**2.0876**	**2.3152**	**2.2833**	**2.2727**
	1	**1.9654**	-	-	-	-	-
	2	**2.0876**	**-.1222**	-	-	-	-
	3	**2.3152**	-	**-.2276**	-	-	-
	4	**2.2833**	**-.3179**	**-.1957**	**.0319**	-	
	5	**2.2727**	**-.3073**	**-.1851**	**.0425**	**.0106**	-

sig (α≤0.05)

Table (13) shows that there were differences in the means of of the study sample toward risk management attributed to the purpose of the project and the estimates were for purpose (3). So we rejecte the null hypothesis "there are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to purpose of the project and accept the alternative hypothesis.

Second Sub-Hypothesis

Ho2: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to geographical location.

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Table (14) Mean, Standard Deviation according geographical location.

Geographical location	**Descriptive statistics**	Geographical location			
		North City	Middle City	South City	All Cities
Risk Managment	**Mean**	1.9654	2.0876	2.3152	2.2833
	St. D	.75078	0.64149	0.78697	0.89427

The mean in Table (14) indicates that there are statistical differences between the sample estimates toward risk management according to geographical location. To find out if these differences are significannot, a One Way ANOVA was conducted as clarified in table (15).

Table (15): One Way ANOVA for the differences in the means toward risk management according geographical location

Geographical location	**Source of Variation**	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Level of Sig.**
	Between groups	4.480	3	1.493	2.509	.058
	Within groups	253.486	426	.595		
	Total	257.965	429			

Table (15) shows that there were NOT significannot differences at (α≤ 0.05) in the means of the study sample according risk management attributed to geographical location. The F-value was 4.060. These values are not statistically significannot at level (α≤ 0.005). So we accept the null hypothesis: "There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to geographical location".

Third Sub-Hypothesis

Ho3: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to total duration of the project.

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Table (16) Mean, Standard Deviation according total duration of the project

	Descriptive statistics	Total duration of the project			
		Less than 5 year	6 year – 10 years	11 year – 15 years	More than 20
Risk Managment	**Mean**	**1.9554**	**2.3889**	**2.0094**	**2.2246**
	St. D	**0.73408**	**1.06979**	**0.68283**	**0.82968**

The mean in Table (16) indicates that there are statistical differences between the sample estimates toward risk management according to total duration of the project. To find out if these differences are significannot, a One Way ANOVA was conducted as clarified in table (17).

Table (17): One Way ANOVA for the differences in the means toward risk management according total duration of the project

Total duration of the project	**Source of Variation**	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Level of Sig.**
	Between groups	**6.284**	**3**	**2.095**	**3.092**	**0.027**
	Within groups	**235.744**	**348**	**0.677**		
	Total	**242.028**	**351**			

Table (17) shows that there were significannot differences at (α≤ 0.05) in the means of the study sample toward risk management according total duration of the project. The F-value was 3.092. It was significannot at (α≤ 0.005). To find out the source of differences, Scheffe test was used as shown in table (18).

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Table (18): Scheffe test for the differences between the means toward risk management according to total duration of the project

Study Variable	total duration of the project		More than 3 and less	More than 6 and less	More than 3 months	More 12 months
Risk Managment		Mean	1.9554	2.3889	2.0094	2.2246
	1	1.9554	-.4335	-	-	-
	2	2.3889	-.0541	-	-	-
	3	2.0094	-.2693	.3795	-	-
	4	2.2246	-.4335	.1643	-.2152	-

In light of the previous result, the null hypothesis is rejected: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to geographical location.

Fourth Sub-Hypothesis

There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to Number of years of work in environmental projects.

Table (19) Mean, Standard Deviation according Number of years of work in environmental projects

	Descriptive statistics	Number of years of work in environmental projects				
		Less than 5 year	6 year – 10 years	11 year – 15 years	16 year – 20 years	More than 20
Risk Managment	**Mean**	**1.9554**	**2.3889**	**2.0094**	**2.2246**	**1.8333**
	St. D	**0.73408**	**1.06979**	**0.68283**	**0.82968**	**0.28868**

The mean in Table (13) indicates that there are statistical differences between the sample estimates toward risk management according to Number of years of work in environmental projects. To find out if these differences are significannot, a One Way ANOVA was conducted as clarified in table (20).

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Table (20): One Way ANOVA for the differences in the means toward risk management according Number of years of work in environmental projects

Number of years of work in environmental projects	Source of Variation	Sum of Squares	Df	Mean Square	F	Level of Sig.
	Between groups	**1.438**	**4**	**0.360**	**0. .596**	**0666**
	Within groups	**256.527**	**425**	**0.604**		
	Total	**257.965**	**429**			

Table (20) shows that there were NOT significannot differences at (α≤ 0.05) in the means of the study sample according risk management attributed to number of years of work in environmental projects. The F- value was .596. These values are not statistically significannot at level (α≤ 0.005). So we accept the null hypothesis : "There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to Number of years of work in environmental projects".

Fifth Sub-Hypothesis

H05: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to project experience.

Table (21) Mean, Standard Deviation according project experience

	Descriptive statistics	project experience				
		Less than 5	6 year – 10	11 year –	16 year –	More
Risk Managment	**Mean**	2.1005	2.2110	2.0850	1.8750	2.2692
	St. D	0.74672	0.88006	0.74554	0.62915	0.52502

The mean in Table (21) indicates that there are statistical differences between the sample estimates toward risk management according to project experience. To find out if these differences are significannot, a One Way ANOVA was conducted as clarified in table (22).

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Table (22): One Way ANOVA for the differences in the means toward risk management according to project experience.

Project experience	Source of Variation	Sum of Squares	Df	Mean Square	F	Level of Sig.
.	Between groups	**1.606**	**4**	**0.401**	**0.665**	**0616** .
.	Within groups	**256.359**	**425**	**0.603**		
.	Total	**257.965**	**429**			

Table (22) shows that there were NOT significannot differences at (α≤ 0.05) in the means of the study sample according risk management attributed to project experience. The F-value was .665. These values are not statistically significannot at

level (α≤ 0.005). So we accept the null hypothesis:" There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to project experience".

Sixth Sub-Hypothesis

Shere are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to Qualification.

Table (23) Mean, Standard Deviation according to Qualification.

	Descriptive statistics	Qualification		
		diploma	BA	Postgraduate
Risk Managment	**Mean**	**1.9464**	**2.1721**	**2.0000**
	St. D	**0.65836**	**0.79154**	**0.75462**

The mean in Table (23) indicates that there are statistical differences between the sample estimates toward risk management according to Qualification. To find out if these differences are significannot, a One Way ANOVA was conducted as clarified in table (24).

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Table (24): One Way ANOVA for the differences in the means toward risk management according to Qualification.

Qualification	Source of Variation	Sum of Squares	Df	Mean Square	F	Level of Sig.
	Between	3.108	2	1.554	2.604	0.075
	Within	254.857	427	0.597		
	Total	257.965	429			

Table (24) shows that there were NOT significannot differences at (α≤ 0.05) in the means of the study sample according risk management attributed to Qualification. The F-value was 2.604. These values are not statistically significannot at level (α≤ 0.005). So we accept the null hypothesis:" There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to Qualification".

Seventh Sub-Hypothesis

There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to the job position.

Table (25) Mean, Standard Deviation according to job position.

	Descriptive statistics	Job position						
		Manager	Employee	Supplier	Financed	user	partner	public safety
Risk Managme	**Mean**	**2.0652**	**2.2955**	**2.5000**	**1.8333**	**2.3140**	**1.9910**	**2.3333**
	St. D	**0.80205**	**0.92248**	**0.5000**	**0.28868**	**.74020**	**.65011**	**1.52753**

The mean in Table (25) indicates that there are statistical differences between the sample estimates toward risk management according to Job position. To find out if these differences are significannot, a One Way ANOVA was conducted as clarified in table (26).

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Table (26): One Way ANOVA for the differences in the means toward risk management according to Job position.

Job position	Source of Variation	Sum of Squares	Df	Mean Square	F	Level of Sig.
	Between groups	10.509	6	1.751	2.994	0.007
	Within	247.456	423	0.585		
	Total	257.965	429			

Table (26) shows that there were significannot differences at (α≤ 0.05) in the means of the study sample toward risk management according Job position. The F-value was 2.994 . It was significannot at (α≤ 0.005). To find out the source of differences, Scheffe test was used as shown in table (27).

Table (27): Scheffe test for the differences between the means toward risk management according to Job position.

Study Variable	Job position		1	2	3	4	5	6	7
Risk Managment		Mean	2.0652	2.2955	2.0094	1.8333	2.3140	1.9910	2.3333
	1	2.0652	-		2.5000				
	2	2.2955	-.2302	*-					
	3	2.5000	-.4348	-.2045					
	4	1.8333	.2319	.4621	-	-			
	5	2.3140	-.2487	-.0185	.6667	-.4806	-		
	6	1.9910	.0743	.3045(*)	.1860	-.1576	.3230	-	
	7	2.0652	2.0652	2.2955	.5090	1.8333	2.3140	1.9910	2.3333

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In light of the previous result, the null hypothesis is rejected: There are no significannot differences at (α≤0.05) for project risk management at the Jordanian Ministry of Environment attributed to Job position

5. CONCLUSION

The projects of the Jordanian Ministry of the Environment face a number of risks, which lead to delay and failure in project implementation. Therefore, the purpose of this study is to explain the level of the implementation of risk management in the projects of the Jordanian Ministry of Environment and the level of its success. In addition to identifying the extent to which there are differences in the risk management of projects of the Jordanian Ministry of Environment attributed to the demographic variables. The results revealed that the level of risk management for projects of the Jordanian Ministry of Environment was lowered from the point of view of the sample members of the study. Moreover, his level of success of the projects of the Jordanian Ministry of Environment was lowered from the point of view of the sample members of the study. In addition to the previous results, the study found that there were significannot differences at (α≤0.05) attributed toward the purpose of the project, the total duration of the project, and the job position. While there were not significannot differences at (α≤0.05) attributed toward geographical location, number of years of work in projects, project experience, and qualification. This may be attributed to the fact that all projects in the Ministry of the Environment are in partnership with civil society organizations and government institutions with funding from international donors, most notably the World Bank. These projects are completed without develop other qualitative or quantitative indicators for the required infrastructure, material and human resources that the Ministry does not have. This result is consistent with the study (Salih and Mubaideen, 2013) [13].

6. RECOMMENDATION

1. Increased interest in implement quantitative and qualitative risk management in ministry projects.
2. Introducing measurement models and key performance indicators (KPI).
3. Develop financial contingency plans to ensure the success of projects within the standards.
4. The Ministry of the Environment of Jordan shall be based on the

i. anticipated risks of projects when preparing budgets for its projects.

REFRENCES

[1] PMI Standards Committee, (2008), Guide to the Project Management Body of Knowledge, Newtown Square, PA: Project Management Institute.
[2] Project Management Institute. (2013). Project Management Body ofKnowledge (PMBOK Guide) – fifth edition.
[3] Kinyua., Esther, Ogollah., Kennedy, David, Mburu, (2015), Effect of Risk Management Stratgies on Project Performance of Small and Medium Information Communication Technology Enitrprises in Nsirobi, Kenya, International Journal of Economics, Commerce and Management, 111(2): p.p1-30.
[4] Miller., Roger, Donald., Lessard, (2001), Understanding and managing risks in large engineering projects, International Journal of Project Management, 19(8): p.p 437-443.
[5] Sanchez., H, Robert., B, Bourgault., M, Pellerin., R, (2009). Risk management applied to projects, programs, and portfolios. International Journal of Managing Projects in Business, 2 (1): p.p 14-35.
[6] Thomas., G. Fernandez., W, (2008), Success in IT projects: A matter of Definition? International Journal of Project Management, 26(7): p.p 733- 742.
[7] Bagliano A.C., Grimaldi S., Rafele C. (2015). Choosing project risk management techniques. A theoretical framework. JOURNAL OF RISK RESEARCH, vol. 18 n. 2, pp. 232-248
[8] Holt., Robin, (2004). Risk management: The talking cure. Organization articles, 11(2): P.p251-270.
[9] Raz., Tzvi, Shenhar., Aaron, Dvir., Dov, (2002), Risk management, project success, and technological uncertainty, R&D Management ,32(2): p.p 101-109.

Journal of Information Systems Engineering and Management
2025, 10(49s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

[10] Anthony., Mills (2001), A systematic approach to risk management for Construction.Structural survey, 19(5):p.p 245-252.
[11] Olsson, R, (2008), Risk management in a multi-project environment: an approach to manage portfolio risks. International Journal of Quality & Reliability Management, 25 (1): p.p 60-71.
[12] Sekaran, U., & Bougie, R. (2010). Research methods for business: A skill building approaches (5th Ed.). West Sussex, UK: John Wiley & Sons Ltd.
[13] Salih, A and Mubaideen, M. (2013). Administrative Leadership between Transactional and ransformational Leadership and Its Impact in the Implementation of The Strategic Objectives of the Ministry of Environment of Jordan- A Field Study in the Large Industrial Companies, Administrative Sciences, issue, 40, Vol.1. pp:58-74.