



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

Student Name	 Anas Khalid Alamoudi	اسم الطالب
Students I.D	 2021200229	الرقم الجامعي

Section

Master

Date

Thursday

18 / 03 / 2021.

Course Code

(PMG510)

Project Risk Management

Instructions:

- اخر موعد للتسليم هو يوم السبت 2021-05-08 في تمام الساعة ٩ مساءً.
- الإجابة متاحة باللغة الإنجليزية أو اللغة العربية مع مراعاة أن تكون المصطلحات العلمية باللغة الانجليزية.
- يتم تسليم المشروع في صيغة ملف . pdf مع الالتزام نموذج الجامعة ولن تقبل أي مستندات أخرى.
- يجب مراعاة أقسام البحث الرئيسية (مقدمة Introduction، دراسات علمية سابقة Literature Review، طريقة البحث Methodology، النتائج والمناقشة Results and Discussion ، وأخيراً المراجع References . وان كان هناك ملحقات Appendices يتم إضافتها)
- يجب الالتزام بـ Theme موحد كما يلي:
- حجم الخط 12.
- نوع الخط Arial.
- لون الخط أسود.
- المسافة بين الأسطر 1.5 line spacing
- عدد صفحات البحث (لا يقل عن ثلاث صفحات ولا يزيد عن ست صفحات).

Instructor's Name: Eng. Mosaab M. Hamed

Project:

Risk Identification and Analysis (Based on the project you chose in APM)

The objective of this report is to identify project risks, prepare a risk probability matrix, and carry out an analysis of selected risks. Referring to the project you select in **Advanced projects management APM course**, your task is to prepare a risk management plan that identifies potential risks in **the selected stage of the project** and identify risk management strategies.

From the course content and readings, you know that the overall purpose of risk planning is to anticipate possible risk events and be ready to take appropriate action when risk events occur—to eliminate or reduce negative impacts on the project.

You may wish to begin this exercise with a brainstorming about potential risks to get candidate risks “on the table” for consideration. And then identify and refine that wording for risks that have some realistic chance of occurring in this stage. For example, potential weather problems present a real obstacle to completing field data collection by the planned completion date. It is also an issue that the project manager will ultimately have to plan for, as opposed to other issues such as a major disaster (e.g., your office burning down), is not a high-enough probability event that requires much time in planning. As described below, you will select several of the identified risks and carry out a risk analysis.

You will use the distilled list of risks to make a risk probability/impact matrix. The matrix will have at least three categories (high/medium/low) for probability and impact.

Remember that it is important to name risks effectively—use words that describe the risk event and point to the impact on the project (e.g., “injury of field technician disrupts data installation work”).

After completion of the risk matrix, document a risk analysis for the selected risks. This detailed documentation for that selected risk will include:

- a description of the risk and potential impacts (schedule, quality of work, cost, etc.) on the project.
- indicators or triggers that would be monitored to help identify the risk as early as possible.
- specific risk response strategies to take.

Using probability and impact matrix calculate the **Expected Monetary Value (EMV)** for all risks that have the impact in terms of cost \$\$.

Best of luck...

المشروع:

التعرف على المخاطر وتحليلها (بحث مبني على مشروعك الذي اخترته في مادة ادارة المشاريع المتقدمة)

الغرض من هذا التقرير هو التعرف على المخاطر المحيطة بالمرحلة التي تختارها المرحلة من مراحل مشروعك (نفس المرحلة التي اخترت التطرق لها في مشروعك لمادة إدارة المشاريع المتقدمة Advanced project management) حيث أن مهمتك هي تحضير خطة متكاملة لإدارة المخاطر تشمل التعريف بالمخاطر المحتملة التي تحيط بتلك المرحلة وتحضير مصفوفة احتمالية المخاطر ومن ثم القيام بالتحليل لهذه المخاطر المختارة وتحديد استراتيجيات ادارة المخاطر المناسبة لكل خطر على حدة.

من محتويات المقرر والمصادر الأخرى المتاحة أصبحت تعلم الآن أن الغرض العام لمرحلة التخطيط للمخاطر هي توقع أحداث المخاطر المحتملة والتجهز لاتخاذ ردة الفعل المناسبة عند وقوع الخطر – لمنع أو تقليل الآثار السلبية على المشروع.

قد تحبذ بداية هذا البحث بعصف ذهني عن ماهية المخاطر التي قد تحيط بتلك المرحلة من مراحل مشروعك, وذلك للحصول على قائمة بتلك المخاطر. ومن ثم تحديد وتصفية هذه القائمة للوصول إلى قائمة مختصرة بالمخاطر التي لها فرصة واقعية أكبر في الحدوث. على سبيل المثال: المشاكل الجوية المتوقعة والتي تمثل عقبة حقيقية أمام اكتمال جمع البيانات من المواقع في أو قبل الوقت المحدد، هذه تعتبر مشكلة على مدير المشاريع أن يضعها في الحسبان. من ناحية أخرى، فإن المخاطر غير الواقعية مثل الكوارث الطبيعية والأعاصير (تلك التي تسبب حريقاً بمكتبك وفقدان الأوراق المهمة) ليست لها احتمالية وقوع عالية وبالتالي لاتستدعي تضيق الكثير من الوقت في التخطيط لها. كما سيتبين لك، ستقوم باختيار عدة مخاطر من تلك التي قمت بالتعرف عليها لتحليلها.

ستقوم باستخدام هذه القائمة المختصرة لعمل مصفوفة المخاطر (الاحتمالية/الأثر). المصفوفة ستحتوي على الأقل على ثلاث تصنيفات (عالي/متوسط/منخفض) للإحتمالية والأثر.

لاتنس استخدام أسماء تصف طبيعة المخاطر بصورة فعالة – قم باستخدام كلمات تصف الحادثة الخطرة وتشير الى أثرها على المشروع (مثل: إصابة أحد الفنيين في الموقع مما يؤثر على أعمال التركيب).

بعد انتهاءك من مصفوفة المخاطر، قم بتوثيق تحليلك للمخاطر المختارة. هذا التسجيل المفصل للمخاطر يجب أن يتضمن:

- وصف للخطر واثاره المحتملة (الجدولة، جودة العمل، التكلفة، الخ)
- المؤشرات والمحفزات التي يجب مراقبتها للمساعدة في التعرف على هذا الخطر قبل وقوعه
- تفصيل للاستجابة المقترحة للتصدي لهذا الخطر

باستخدام مصفوفة الاحتمالات والتأثير ، احسب **القيمة النقدية المتوقعة (EMV)** لجميع المخاطر التي لها تأثير من حيث التكلفة \$\$.

مع تمنياتي بالتوفيق..

Risk Management

Problem Statement

Projects nowadays face a lot of pressure stemming from their innovative nature and the consequences of challenges associated with globalization. Projects within the construction industry are characterized as complex, fragmented and largely temporary which inherently exposes them to risks. Risk management is therefore very necessary in management of these projects as it provide a systematic process aiming at identifying and managing risks to act in the event the risk arises. Risk management entails identification, analysis and responding to potential risks to realize project objectives and avoid associated costs, hence is very crucial in these projects, especially at the execution phase. Decision makers including project owners and managers need a reliable framework for identifying and managing risks in a sufficient and effective way. Therefore, developing a risk management plan for identifying potential risks and strategies for managing these risks during the execution phase of construction projects is critical for effective risk management.

Research Aim and Objectives

The aim of this study is to explore risk management practices in mega construction projects during the execution phase. It specifically seeks to identify and analyze project risks in construction projects, and risk management strategies during the execution phase of construction projects.

The following objectives will be explored;

1. To identify risks in construction projects during the execution stage.
2. To analyze risks characterizing construction projects during the execution phase with regard to their severity and likelihood of occurrence.

3. To identify risk management strategies used in construction projects
4. To develop a risk management plan for identifying potential risks during the execution phase of construction projects.

Literature Review

Construction projects are generally complex and laden with uncertainty. These projects are unique in nature and risks characterizing them arise from many different sources (Peixoto et al., 1097). These projects are dynamic, innately complex and involve multiple feedback processes. They also involve different groups of stakeholders and participants with varying interests and expectations which may have either positive or negative impact on the execution phase of the project. The different competing interests naturally create problems and conflicts and require proper management to prevent them from negatively affecting project execution. When risk is combined with uncertainty, they can have detrimental consequences for the project unless they are well managed (Ward and Chapman 98-99). Risk analysis and management is therefore a critical element of the project management process aiming at addressing uncertainty and other unexpected events to realize goals of the project and its success.

The cost of allowing a risk to take place without managing it is a concept many project owners fail to take into account in spite of the fact that it is one of the largest expense items (Banaitiene and Banaitis 2). Risk management enables the project managers and other key participants including client, suppliers, consultants, and contractors/developers to meet their commitments to the project and, and suppliers to meet their commitments and reduce negative effects on project execution with regard to time, quality and cost objectives as these three aspects are considered to be the key determinants of project success (Peixoto et al., 1097). Risk management practices provide a systematic process aiming at identifying and managing risks to

act in the event the risk arises, defining project objectives, ensuring and enhancing project control, increasing project success, improving communication between the project team and different participants, prioritizing actions and facilitating decision making. Identified benefits of this process include ability to identify potential risks to the project and analyzing odds of them occurring and their severity, improvement of the whole project management process, saves costs, and enables effective utilization of resources (Banaitene & Banaitis 3). Peixoto and colleagues explain that risk management ensures that all problems are identified early enough allowing time to recover from their occurrence without overspending or missing schedules (p.1098). It can be used to provide information for improving quality of decision making as it enables one to gain more insight into the project.

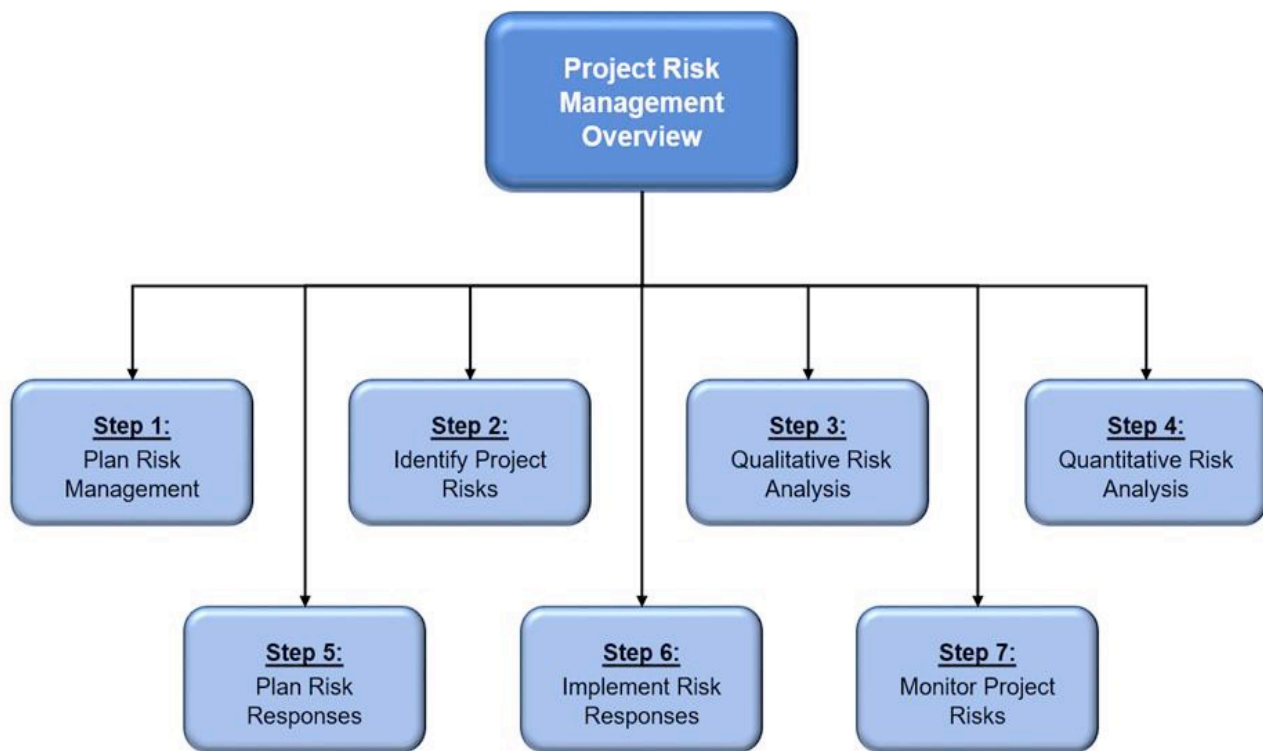


Figure 1: Project Risk Management Chart

Methodology

To achieve the objective of the study project, a qualitative research will be conducted. This design will be used because it allows collection of detailed, in-depth data rich in meanings allowing the researcher to understand the issue being investigated from experienced participants (Creswell 78-79). Data will be collected from project managers, consultants, and owners of a number of mega construction projects. These participants have been selected because they have knowledge and firsthand experience with risks in construction projects and their management. They provide a rich source for the required data. Purposive sampling will be used to select them so that only those with experience in managing, executing and owning mega construction projects are included in the sample.

Data will be collected through semi-structured interviews conducted over the telephone. These allow collection of detailed data because their flexibility allows use of follow up questions to obtain clarifications enhancing understanding of the phenomenon as explained by Creswell (80-82). Analysis of data will employ thematic analysis.

Results and Discussion:

The study expects uncertainty to be the main cause of risks in execution phase of mega construction projects. Uncertainty due to variability in the following areas; cost and time estimates, uncertainty due to variability in design and logistics, uncertainty regarding project objectives and priorities, and uncertainty associated with decisions and relationships between project parties. These are the different areas from which risks could arise. Some are controllable while others such as natural disasters, inflation rates, and extreme weather conditions such as floods among others are beyond the control of the project manager. The management strategies will seek to manage these areas of uncertainty.

This study is significant as the findings provide an effective way of identifying and managing risks during the execution phase of construction projects allowing project goals to be achieved within the estimated time and allocated budget.

Works Cited

Banaitiene, Nerija and Banaitis Audrius. "Risk Management in Construction Projects, Risk Management-Current Issues and Challenges." *IntechOpen*, 2012, pp. 1-9.

Creswell, JohnW. "*Qualitative Inquiry & Research Design: Choosing Among the Five Approaches*." Thousand Oaks, CA: SAGE Publications, Inc. (2013, pp. 77-83)

Peixoto et al. Project Risk Management Methodology: A Case Study of an Electric Energy Organization. *Procedia Technology*, 16, 2014, pp. 1096-1105

Ward, Stephen and Chapman Chris. "Transforming project risk management into project uncertainty management." *International Journal of Project Management*, vol. 21, 2003, pp.97-105.