



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

Student Name	فهد بن محمد العريفي	اسم الطالب
Students I.D	2021202516	الرقم الجامعي

Section

Master

Date

Thursday

18 / 03 / 2021.

Course Code

(PMG510)

Project Risk Management

Instructions:

- آخر موعد للتسليم هو يوم الخميس ٢٠-٠٥-٢٠٢١ 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 ١٢.
- 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. Mosab 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 **each 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 project. 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 \$\$.

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 بكل مرحلة من مراحل المشروع، تحضير مصفوفة احتمالية المخاطر ومن ثم القيام بالتحليل لهذه المخاطر المختارة. مهمتك هي تحضير خطة متكاملة لإدارة المخاطر تشمل التعريف بالمخاطر المحتملة التي تحيط بكل مرحلة من مراحل مشروعك (نفس المشروع الذي اخترته في مادة إدارة المشاريع المتقدمة Advanced project management). ومن ثم القيام بتحديد استراتيجيات ادارة المخاطر المناسبة لكل خطر على حدة.

من محتويات المقرر والمصادر الأخرى المتاحة أصبحت تعلم الان 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 بكل مرحلة 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 لا تستدعي 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) للاحتتمالية والأثر.

لا تنس 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..

Risks Identification and Analysis in a Create a budget for a project (building a house)

Introduction:

Risks are a measure of the likelihood and consequences of failing to reach the project's objectives as identified and planned in advance, and accordingly, the risks lie in the case of environmental uncertainty because the risk is formed in the lack of knowledge about future events (خير، ٢٠١٤)¹.

Organizations face a very wide range of risks that can impact the outcome of their operations the desired overall aim may be stated as a mission or a set of corporate objectives. The events that can impact an organization may inhibit what it is seeking to achieve (hazard risks), enhance that aim (opportunity risks), or create uncertainty about the outcomes (control risks) (Hopkin, 2010)².

The importance of risk management on budgeting the project is that miscalculation of the budget or expansion of the project scope results in budget / cost risks and this risk may lead to delay or even incomplete closure of the project at times.

Literature review:

In order to present the reader with an understanding of the overall topic and specific themes investigated in this study, a review of relevant literature was conducted and presented, fitting with purpose and objectives of this study.

Hailey , Jonasson , 2013 (Risk management in air freight handling) In this study, the authors presented a variety of primary and secondary literature sources, such as industry and regulatory reports. Moreover, secondary sources were used which included books and magazines. These tend to be of a third order nature, which can be easily obtained through various databases and other sources (Saunders et al., 2012). The main sources in which this literature is found have mostly been through government and industry organizations' websites for primary literature sources. Most of the secondary literature was available in higher education sources including Pro-Quest (ABI / Inform Global) databases, Emerald, Business Source Premier, and Google Scholar.

Other secondary sources included Google Books and the Library at the University of Jönköping (Hailey, 2013)³.

Samir, Kumar, a researcher in the Department of Civil Engineering (2020): The aim of this research is to evaluate the current risk management strategies practiced in the construction of Gautam Buddha International Airport, which is considered a very advanced project with a large budget. With a total budget of 6 billion NRS including VAT, risk management prioritizes risk to senior managers.

The aim of this research was to evaluate the current risk management strategy practiced in building GBIA and the above-mentioned objective was examined using PI interview, document study and field monitoring as discussed in focus.

But the scientific approach to risk management was not applied in this project, which was suggested by KII, and that the reason behind this is "insufficient control of budget and cash flows", and "ineffective project management tool." It resulted in insufficient budgetary control, which was largely due to poor financial management (NOLEGEIN Journal of Business Risk Management, 2020)⁴.

Methodology:

This research follows the descriptive approach to the study variables. We are interested in studying risk management through data collection and drawing on previous studies and literature. We will introduce more risk management applications found in construction projects.

Risk management strategy

It is important for an organization to have a clearly establish strategy in relation to risk management. The strategy needs to be based on the overall approach of the organization to risk and risk management. An important component of that risk strategy will be the arrangements for ensuring risk management input into strategy, projects and operations.

Identifying risks:

Priority Score	Priority Rating
0 – 20	Very Low
21 – 40	Low
41 – 60	Medium
61 – 80	High
81 – 100	Very high

No	Description	Risk			How to prevent and mitigate the risk
		p	I	P*I	
1	Work accidents (injury to a worker)	6	5	30	Insurance for workers and accident compensation claims
2	High material prices	7	4	28	Make a plan to import the materials in sufficient time before the start of the project
3	Discovery of problems during implementation (rocks -explosives)	3	3	9	It is dealt with by means of allowances or cash reserves that are added during project planning
4	There are errors in the designs	10	7	70	Preparing specifications and clear design drawings for the project outputs
5	Secure the building against thefts and fires	9	8	72	Increasing the presence of security guards, creating tight fences, and an integrated control and firefighting
6	Currency exchange rate risk	4	5	20	Use the means of preventing financial losses and barter
7	Insurance risks	9	9	81	Take precautions and cover yourself with self-insurance
8	Maintenance risks	6	6	36	Prepare clear specifications for project outputs
9	Risks related to overruns for each item	7	9	63	Construction contracts at fixed prices and market study

Risk Matrix:

The risk assessment matrix is a useful risk assessment tool. The following table provides an example of how the matrix can be used for risk assessment in a project. (baraka, 2012)⁵.

Probability Factor	Very Likely (1)				72	81
	Likely (2)				63	70
	Possible (3)			36		
	Unlikely (4)	20	28	30		
	Very unlikely(5)	9				
		Slight (1)	Minor (2)	Significant (3)	Severe(4)	Major (5)
		Impact Factor				

After identifying the risks in principle, we now have a list of risks, but we do not know how much these risks will affect the cost of the project, which of these risks is more threatening to the project and which is less. Therefore, the risks and impacts resulting from their occurrence must be evaluated and the cost calculated, in order to find a way to deal with each risk and avoid it through mitigation.

Now we can find a value of (EMV):

No. of risk	Probability	Impact	EMV
1	60%	5000	3000
2	70%	4000	2800

3	30%	3000	900
4	100%	7000	7000
5	90%	8000	7200
6	40%	5000	2000
7	90%	9000	8100
8	60%	6000	3600
9	70%	9000	4900
Total EMV			39500

Results and Discussion:

Given that the project is surrounded by a number of risks and all risks have an impact on the budget due to the increase in costs, it is not logical to define all risks, and therefore we have classified the risks into three levels - high - medium - low according to the above table, by creating a matrix that combines the impacts. The risks resulting from the risks and the probability of their occurrence, as shown in the table in this matrix, the risk value was estimated by multiplying the effect on the probability of occurrence, and from here it was found that the risks (design errors - building insurance against thefts and fires - insurance risks) are considered high risks and need to make plans to control. As for the rest of the risks, from medium to low, it can be controlled.

References

1. عمان: دار وائل للنشر والتوزيع. Contemporary Project management. (خير، أ. (٢٠١٤).
1. Hopskin, P. (2010). Fundamentals of risk management. Great Britain and the United States: Kogan Page Limited.
2. Hailey, J. (2013). Risk management in air freight handling.
3. NOLEGEIN Journal of Business Risk Management. (2020). Construction of Gautam Buddha International Airport. Nepal : MBA Journals.
4. baraka, H. (2012). Risk management in construction projects. Project management Institute. (2017). *PMBOK guide*. USA: Project management Institute.