



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

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Section

Master

Date

Thursday

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Course Code

(PMG510)

Project Risk Management

Instructions:

- آخر موعد للتسليم هو يوم الخميس ١٧-٠٥-٢٠٢١ في تمام الساعة ٩ مساءً.
- الإجابة متاحة باللغة الإنجليزية أو اللغة العربية مع مراعاة أن تكون المصطلحات العلمية باللغة الإنجليزية.
- 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. وإن 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 line spacing 1.5
- 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 \$\$.

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 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 الاثار 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:

The Oxford English Dictionary definition of risk is as follows: 'a chance or possibility of danger, loss, injury or other adverse consequences, a risk is used to signify negative consequences. However, taking a risk can also result in a positive outcome. A third possibility is that risk is related to uncertainty of outcome (Hopskin, 2010).

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project. The objectives of project risk management are to increase the probability and/or impact of positive risks and to decrease the probability and/or impact of negative risks, in order to optimize the chances of project success. (Project management Institute, 2017)².

Control risks are frequently associated with Project Management Uncertainties can be associated with the benefits that the project produces, as well as uncertainty about the delivery of the project on time, within budget and to specification.

The importance of risk management for establishing a project budget is that miscalculating the budget or unintentionally expanding the project scope leads to budget / cost risks This risk may lead to delays or even incomplete closure of the project at times.

Literature review:

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)

Daneva, Wieringa: The aim of this paper is to map out the problem area to estimate the cost of ERP across organizations and solutions available, as well as to propose a research program to improve those solutions.

Estimating the cost of an ERP project across organizations provides an overview of what is in the most recent publications and in practice in the field of modeling relationships between volume and cost factors. This paper explored the latest literature and practices in modeling and evaluating size and cost factors in ERP projects across organizations. This approach is not only beneficial to companies in their attempts to gain deeper insights into the size, cost, and aspects of their ERP projects, but it will also help in assembling a large portion of ERP literature according to a common concept of and it comes through presenting operating system failures, security breaches, and competitive threats as different types of unified ERP risk phenomenon, so it becomes possible for a business network to make smart allocation trade-off decisions about an ERP solution Institutions across institutions (Daneva, 2008).

Methodology:

Methodology is a description of how you'll perform risk management, including elements such as methods, tools, and where you might find risk data that you can use in the later processes (heldman, 2018). This research follows the descriptive and analytical 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.

Now we have a list of risks, we will make a risk matrix (to determine the probability and impact of each risk) which will go after that register.(low = 0 to 0.29 , medium = 0.3 to 0.79 , high = 0.8 to 1).

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)

Probability	0.8 – 1	High	High	medium
	0.3 - 79	High	medium	Low
	0 – 0.29	medium	Low	Low
		0.8 – 1	0.3 - 79	0 – 0.29
Impact				

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.

No	Description of risk	Probability	Impact	Severity	Degree of risk	how to prevent and mitigate the risk
1	High prices for materials and labor	0.3	0.8	High	24	Ensure that raw materials are available, imported and supplied from sufficient time to the site, as well as contracting with workers in sufficient time before the start of the project with the preparation of the initial

						costs
2	Equipment failure occurs	0.9	0.2	Medium	18	Alternative plans must be developed commensurate with the project budget, project delivery date and project conditions
3	Risks related to currency exchange rates	0.25	0.6	Low	15	Means and tools for preventing Financial losses (resorting to Barter methods, for example).
4	A change in weather conditions increases the cost	0.2	0.7	Low	14	The timesheets for the required work can be updated (monthly or weekly).
5	Work disruption due to human reasons (sit-ins and strikes occurred in the executing)	0.3	0.3	Medium	9	Solve the financial and psychological problems of labor and secure all their needs
6	Discovery of problems during the excavation that were not previously seen during the study (the presence of rocks or explosives during the digging)	0.3	0.4	Medium	12	Alternative plans must be developed commensurate with the project budget, project delivery date and project conditions
7	Disasters such as earthquakes and floods	0.2	0.2	Low	4	It is dealt with by means of allowances or cash reserves that are added during project planning

8	Difficulty completing the project at the specified cost	0.2	0.6	Low	12	Make a fixed construction contract for the project Update the terms of emergency plans and credit facilities
9	Errors in design due to poor labor or poor materials	0.5	0.8	High	40	Alternative plans must be developed commensurate with the project budget, project delivery date and project conditions
10	Fires resulting from poor storage of materials	0.3	0.5	Medium	15	Necessary precautions must be taken, taking into account the safe location for storage, classification of hazardous materials, and the presence of alarm and extinguishing devices
11	Failure to obtain a facility that meets the requirements of quality, appearance or safety.	0.2	0.3	Low	6	Approval of all raw materials and materials from the owner by a specialized technical authority

Now we can find a value of (EMV):

No. of risk	Probability	Impact	EMV
1	30%	8000	2400
2	90%	2000	1800
3	25%	6000	1500
4	20%	7000	1400
5	30%	3000	900
6	30%	4000	1200

7	20%	2000	400
8	20%	6000	1200
9	50%	8000	4000
10	30%	5000	1500
11	20%	3000	600
Total EMV			16,900

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 consequent increase in costs, and it is not logical to make a line for all risks, and therefore it is necessary to define precedents in order to be dealt with, and we have classified the risks into three levels - high - medium - low according to the table Above, by creating a matrix that combines the effects resulting from the risks and the probability of their occurrence, as shown in the table In this matrix, the risk value has been estimated by multiplying the effect on the probability of occurrence, and from this it was found risks (high material prices and errors in design due to poor labor and materials) are considered high risks and need to work in line with them, while the rest of the risks range from medium to low that can be controlled.

References

1. Hopskin, P. (2010). Fundamentals of risk management. Great Britain and the United States: Kogan Page Limited.
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6. baraka, H. (2012). *Risk management in construction projects*.