



جامعة الجميع الذكية  
EVERYONE'S SMART UNIVERSITY

## Everyone's Smart University

### Project (Spring 2021)

|              |                            |               |
|--------------|----------------------------|---------------|
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Section

Master

Date

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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. وإن 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 line spacing 1.5
- عدد صفحات البحث (لا يقل عن ثلاث صفحات ولا يزيد عن ست صفحات).

Instructor's Name: Eng. Mosaab M. Hamed

## **Introduction**

Risk identification and management are a crucial necessity when it comes to the development of projects. Identifying which risks to avoid and which to transfer or accept is very important for both the financial progress and development of a project. This requires essential factors in analyzing the most critical factors with a risk assessment matrix highlighting different risk levels and how they affect the overall project both financially and duration. The risk matrix outlines the Probability of occurrence on various risks and the degree of their impact on the project.

## **Literature Review**

According to Murphy's law, the value of contingency planning guarantees the continuity of a project and lowers the impact of risks. The most commonly used risk management methods include Risk avoidance, elimination of contract Risk a and market risk. The management must first identify the hazard, analyze the risks and prioritize (Müller et al., 2019). A solution is mainly implemented at this phase of risk management, and then finally, the risk is monitored involving documentation to identify any change in the risk. When using a risk matrix, the severity of an occurrence is plotted on one axis and the other's Probability of circumstance. A risk matrix visualizes the rank of the risks as generally acceptable, as low as reasonably possible, and usually reasonable that help to solve troubles as soon as they are likely to happen (Manzo et al., 2019). The risk matrix can be either three by 3, 4 by 4, or 5 by 5. The choosing of the matrix dimensions depends on how much analysis the project managers want to analyze the risk occurrence.

## **Methodology**

To create a risk assessment matrix, one is needed first to identify the risk associated with the operations of a project. The trouble is then analyzed to determine its scope. This helps the management understand the link between the risk and different factors within the organization. Some risks can bring the whole project to a halt, while others have just minor effects on the progress of a project. After analyzing a risk, evaluation is the next step. Evaluation will help rank the risk depending on the vulnerability of

different organizational functions. A high-rated risk, therefore, will require immediate intervention. At this point, a risk chat matrix is needed to outline visually various risks and their effect.

On the advanced project to build a social hall for the general public, different risks may arise, and therefore scrutinizing their occurrence would be necessary. One of the risks that can be expected is lawsuits from various parties to stop building the building. This happens all the time in the building of public constructions. Different parties have different perceptions of the development of public projects and may stand in the way of the structure of a social hall. The management must therefore prepare financially to handle different lawsuits and sometimes land disputes. Such disputes can paralyze the whole project.

The public would protest another risk to be expected to prevent the construction of the project. Protests can potentially lead to the destruction of the project if already commenced or delay the start of the project.

The project time frame is essential to consider and plan. Activities delaying the time are potential risks financially to the whole project due to the operating costs incurred over time. Delay of building material is a potential risk and may cost the task much more time.

IN the matrix below, risks depending on their likelihood occurrence are shown.

| RISK                                                    | PROBABILITY | EV  |
|---------------------------------------------------------|-------------|-----|
| Safety hazards that lead to work accidents and injuries | 0.6         | 6   |
| Managing change orders                                  | 0.5         | 3   |
| Incomplete drawings and poorly defined scope            | 3           | 2   |
| Unknown site conditions                                 | 0.5         | 2.1 |
| Poorly written contracts                                | 0.2         | 2.5 |
| Unexpected increases in material costs                  | 0.4         | 0.8 |
| Labor shortages                                         | 0.5         | 2   |
| Damage or theft to equipment and tools                  | 0.7         | 2   |
| Natural disasters                                       | 0.6         | 2.8 |
| Issues with subcontractors and suppliers                | 0.4         | 3   |
| Availability of building materials                      | 0.6         | 1.6 |
| Poor project management                                 | 0.5         | 3   |
| Public protests                                         | 0.2         | 2   |

The table below shows the displayed risks along with their probabilities. Identify where the risk lies on the chart by adding the right and left numbers to get the total and then trace it to the chart.

| Consequences                                                                   |   | Probability |                             |                                                 |                                     |                                           |
|--------------------------------------------------------------------------------|---|-------------|-----------------------------|-------------------------------------------------|-------------------------------------|-------------------------------------------|
|                                                                                |   | Unlikely    | Possible to occur over time | It probably will occur under routine conditions | Will occur under current conditions | Frequent/ Regular / Continuous Occurrence |
| End of the project/interference with the whole project                         | 5 | 1           | 2                           | 3                                               | 4                                   | 5                                         |
| Affects almost all the departments and the progress of the project.            | 4 |             |                             |                                                 |                                     |                                           |
| It affects the timeline of the project since it affects almost all departments | 3 |             | Medium Risk                 |                                                 |                                     |                                           |
| Significant impact on some of the project processes                            | 2 |             |                             |                                                 |                                     |                                           |
| Minimal effects to the project                                                 | 1 | Low Risk    |                             |                                                 |                                     |                                           |

EMV = Probability of the risk multiplied by the impact.

$$EV=28.1$$

Assuming that, on average, all the risks would amount to around \$18200, then the total risks resolution cost would amount to approximately \$511420. That is all the risks that happened to occur.

## Reference

- Manzo, C., Cochino, E., Merchant, L., & Mazzaglia, G. (2019). Risk management. In *Pharmacoepidemiology*. <https://doi.org/10.1002/9781119413431.ch24>
- Müller, R., Drouin, N., & Sankaran, S. (2019). Modeling Organizational Project Management. *Project Management Journal*.  
<https://doi.org/10.1177/8756972819847876>