

Dedication

*Singled I dedicate this to my two families who
were always the source of inspiration, a
spot for motivation, and the wise assistant to
help me stand against all the obstacles.*

*Singled I dedicate this to all my colleagues
who have been
the good companions in the journey of
knowledge.*

*I dedicate this to every reader who gave
precious time and attention
reading this book.*

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I. Abstract

In any country, infrastructure development increases the growth of countries economy and generates the large amount of job opportunities. Hence those projects involve a large amount of investment to carry out. In view of that, if any sort of waste (either time, resources etc) occurs that would lead to huge monetary losses. These losses occur due to various risks associated with such mega projects.

Consequently, these risks play a crucial role for the completion of project within the time schedule and planned budget. In this connection, this study mainly discusses the critical risk factors and their assessment techniques through comparative study of construction projects in oil field in Sudan. Three projects with different Clients, Contractors and Consultancy have been reviewed. The review resulted that a simple analytical tool will be developed for each project task to assess the risk easily and quickly by interview, lessons learnt from previous projects and designed questionnaire for this study, which will encourage the practitioners to do risk analysis in their projects.

This review concluded that the earlier risk identification in the project and assessment during the stage of the project will lead to a better estimation of on the escalation cost and time overruns (from conceptual phase till commissioning phase). Such risk assessment help to include in the budget and scheduling for the successful completion of the project.

مستخلص الدراسة

مشاريع البنى التحتية تعد من اهم المشاريع التي تؤدي إلى زيادة الثروات وتساهم في نهضة الإقتصاد كما تفتح عدد من فرص العمل وتحفز الإستثمار. أي إهمال او تقصير بإدارة الموارد او الوقت يؤدي إلى إهدار وتبديد هذه الموارد. كما تلعب إدارة المخاطر دور مهم في نجاح المشاريع وتؤثر تأثير مباشر في ميزانية وزمن المشروع. في هذه الدراسة تمت دراسة أسباب المخاطر التي أحاطت بثلاثة مشاريع من مشاريع الصناعة النفطية كما تم إختيار ثلاثة شركات مشغلة ومقاولين وإستشاريين مختلفين. مقابلات شخصية مع بعض الأشخاص الذين لعبوا دور بارز في تنفيذ هذه المشاريع كما اخذت دروس من المشاريع السابقة في الحسبان. تم تصميم استبيان وتوزيعه على عدد من الأشخاص الذين عملوا بهذه المشاريع ومن ثمة تجميعه وتحليله باستخدام برنامج SPSS.

هذه الأساليب التي تم استخدامها ساعدت في تحديد المخاطر التي صاحبت هذه المشاريع وطرق التعامل معها كما ستظهر بوضوح دور إدارة المشاريع وإدارة المخاطر على وجه الخصوص خلال جميع مراحل المشروع. من مرحلة الأفكار والتصميم إلى مرحلة التنفيذ والتسليم النهائي ومن ثمة مرحلة التشغيل

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List of Symbols

Symbols	Abbreviation
PM	Project Management
RM	Risk Management
PMI	Project Management Institute
PLC	Project Live Cycle
EPCC	Engineering, Procurement, Construction & Commissioning
PCC	Procurement, Construction & Commissioning
B&Q	Bill of Quantities
MC	Mechanical Completion