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Risk Management Practices and their Influence on Mega Project Performance in Developing Countries

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Abstract

This study critically explores the influence of risk management on building projects in Zimbabwe, with a particular focus on identifying prevalent risk factors that significantly affect project performance. It seeks to assess the overall impact of risk on the construction sector while evaluating the current state of risk management practices. By examining relevant literature from the five years leading up to the research date, and employing a literature review methodology, the study provides a comprehensive understanding of both the status of risk management and project performance within the Zimbabwean construction industry. Key objectives include gaining insight into existing risk management practices and capturing the perceptions of project managers and other stakeholders regarding the effectiveness of these practices. The research identifies several recurring variables that adversely affect construction projects. These include fluctuating prices and inflation, inconsistent government regulations, funding shortages, and clients' evolving demands. Such factors pose considerable challenges and often undermine the successful delivery of construction projects across the country. The study finds that there is a positive relationship between risk management and project outcomes meaning that if risks are not proactively managed, they will lead to a project failure and vice versa. We recommend the development of a risk management model tailored specifically to Zimbabwe's most common risk factors. We further advocate for the provision of vocational training for artisans to enhance skill levels, the establishment of indigenous risk managers within different regions to ensure localized expertise, and the training of all relevant stakeholders in effective risk management techniques. These measures are proposed to mitigate the negative impacts of risks and strengthen project outcomes. Ultimately, the study serves as a valuable resource for policymakers, offering a framework through which they can evaluate the effectiveness of current risk management strategies and implement informed policy changes. Such changes would aim to cultivate a more resilient and responsive system within the construction sector, one that adequately supports all stakeholders and promotes sustainable development in Zimbabwe's built environment.

Keywords: Risks, Risk management, Mega Projects, Political Risks, Economic Risks, Technical Risks

Background

Mega projects, generally characterized as extensive endeavors that cost more than one billion dollars, are essential to a country's infrastructure and economic growth, especially in developing nations like

Zimbabwe (Flyvbjerg, 2021).Third world countries have become a harbor for mega projects with massive impacts on the societies around them. Due to rapid urbanization, third world countries have seen significant growth in construction projects. Mega construction projects represent a strategic option towards achieving sustainable development objectives in developing countries (Othman, 2013). In some countries, mega projects occupy a bigger part of the economic system, hence why their successful implementation throughout the project's life cycle is of paramount importance.

The success of a project is measured by its alignment with project objectives in terms of time, cost and quality. Due to the precarious nature of third world countries political and economic landscape, projects in these areas face a lot of diverse risks such as currency instability, legal issues, uncertain interest rates and inflation. Most of these risks arise due to the lack of resources in third world economies be it human capital with the know how to successfully implement projects or the cost of investment which is also in short supply in these regions. These risks may cause project failures in meeting objectives if they are not identified and proactively addressed by project managers.

Thus, this study aims to evaluate the influence of risk management practices on the performance of projects located in third world economies with special attention to the construction industry.

Literature Review

Theoretical Framework

Risks prevalent in developing economies for construction projects

The project manager must appreciate the environment of development projects, maintain flexibility and be competent to analyze the nature of associated problems and their adverse effects on the success of the project and address these promptly (Kwak, 2001). There are a host of risks that are prevalent in developing economies and can be classified into internal and external risks.

Internal risks involve stakeholder participation, technical risks and managerial risk of the project. Stakeholder participation risks should always be taken into account as they have the power to influence the outcome of any project. Technical risks arise due to the fact that there may be no people with the required technical abilities that are required by the project. Whilst, managerial risks arise due to the corrupt environment in third world economies, hence project managers in themselves pose a risk of fraud in addition to incompetence risks which may cause potential failure of the project.

Externally a project is exposed to the political, social and economic risks that are prevalent in third world economies, thus project managers should be able to identify and address these risks in accordance with the risk management framework that is available. Such risks include currency instability, political instability, inflation and environmental risks that occur as an act of God.

Technical Risks

Technical ability implied by the aforementioned technical risk is the competence to plan, develop and implement a project successfully over the project life cycle. Due to the economic hardships in third world economies, competent professionals with the necessary education and training are rare. This is caused by the lack of practical training even for those that have the necessary education due to low levels of economic activity. Governments in developing countries have to perceive that providing quality education and professional training is a key driver towards sustainable development and prosperity (Othman, 2013).

Economic risks

Due to the economic hardships in developing economies, it exposes projects to uncertainty and this may be in the form of low capital investment. Stephen Nyende in a case study of Uganda stipulates that insufficient funds for the implementation of projects in Uganda limits the success of projects. In addition, a high cost of capital means that project managers cannot borrow adequately to pre-finance their businesses and expand (Nyende).

Political risks

Governments around the world exist to serve the people and in that context, they may make regulations that mandates the development of projects around the country to provide jobs and economic development however, the feasibility of these projects may be in question. There are several cases where projects are implemented because the state or the organization dictates that they should be implemented, irrespective of whether project appraisal recommended the projects or not (Nyende).

Mega projects belong to the government and undertaken by the private sector, so as to achieve their objective of social and economic development in their countries. Active regimes implement these project in a manner that they deem fit, hence political and legal risks arise due to a change in regime. To clarify the nature of these risks, we present a hypothetical scenario where a conservative regime aims at the construction of dams to supplement the country's energy sector. The project may be undertaken, however if they were to be a change in regime to a more progressive one, which prioritizes the construction of nuclear plants as a solution to the energy crisis, the construction of dams will receive less attention.

Risk Management

A process of risk management in projects is a rationale chain of practices by which decision-based agents plan and execute actions and controls the results in order to keep the implementation of the project under certain conditions (time, cost and quality parameters set.) (Luiz Henrique Rodrigues-da-Silva, 2014). Risk management of a project is not exclusive to any particular time of the project rather it is a rigorous process that is performed at every stage of the project's life cycle. Project managers have to identify, analyze and evaluate risks that the project is exposed to for the rest of the project life cycle.

Project managers need to have a pragmatic view of the project from the planning stage so that they may be able to anticipate future problems and develop a strategy to address these problems if they were to materialize.

The benefits that arise from the implementation of a project to different stakeholders obligates project managers to proactively address risks so as to protect said stakeholders from these risks. Decision-making entities must apply a rational approach, taking into account the long term prospects of the existence of threats, analyzing their impact on the project from the point of view of legal, financial and technical factors of the external environment (Fedyk, 2024).

Risk Identification

In accordance with the existing risk management framework available namely COSO framework, project managers must identify internal and external risks that impedes the achievement of project objectives. These risks should be clearly distinguished from opportunities.

Risk Assessment

After the identification of risks, we must retrospectively analyze the risks on the basis of likelihood and impact. Thus, meaning that we rank the risks in terms of their probability of occurrence and thee impact thereafter

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Risk Responses

Now that we have ranked the risks that the project is exposed to, we must provide sufficient and effective responses in accordance with the risk appetite of the stakeholders of the project. These responses may be risk avoidance, risk mitigation, risk transfer and/or risk acceptance.

Looking at the project life cycle, risk management depends on the complexity of the project and the level at which it is on the life cycle. Therefore, the stages of risk management that have been established in recent research which this study shall base its research on are identifying risks, analyzing and evaluating risks, plan and act against risks, control the risks, report and integrate against the risks, and support risk project management. Special attention is paid to the stages of project management and analysis of methods aimed at minimizing and avoiding project risks. The most modern and well known methods include such methods as: risk avoidance and risk prevention, the complex application of which will ensure the successful implementation of the project and protect the project from the influence of destabilizing external and internal factors (Fedyk, 2024).

Empirical Literature Review

Visha Goswami wrote a research paper in 2024 which empirically investigated the effectiveness of risk management on project success within agile software development environments. Upon review of this literature, it is concluded that the findings are applicable in the construction industry. The study examines the relationship of risk management processes and project outcomes in terms of time, cost, quality and stakeholder satisfaction. The study concludes using empirical evidence which was obtained from primary data that there is a positive relationship between risk management and project outcomes. By proactively addressing potential issues, effective risk management enhances the likelihood of project success in terms of cost, schedule, quality and stakeholder satisfaction (Goswami, 2024).

Roshan Khan in a study where they were exploring the impact off risk management in influencing project success suggests that projects face uncertainties that can derail objectives and hinder performance despite an emphasis on effective project management methodologies however they conclude that many projects fail due to overlooked risks and insufficient assessment processes. The research findings provide actionable insights and practical recommendations to improve project outcomes and advance the field of project management by enhancing understanding of effective risk management strategies (Khan, 2025). The researcher employed survey and interviews ensuring the reliability of their outcomes. The study alongside other literature empirically affirms that good risk management practices positively influence project outcomes.

Research Methodology

Research Methodology acts as a glue which holds research together in a perfect rigid shape, providing a framework to carry out the research in its entity (Frikkie Herbst, 2004). This study utilizes literature review to answer research questions. A literature review can broadly be described as a way of collecting and synthesizing previous research (Baumeister, 1997). This study employs an integrative approach to

literature review whereby the researcher looks to make a critique and analysis of available literature in articles and books to establish a strong theoretical framework and provide extensive background to the study area. The study employed Literature review methodology so that we can evaluate risk management practices based on the theoretical and empirical research done in the area of study. The credibility of the risk management practices was enhanced due to the fact that they were a point of consensus by the researchers who has studied the area and they can be applied to mega construction projects in developing economies.

Results and Discussion

Using Literature review, a wide range of literature was reviewed and the literature concurs that effective risk management practices have a positive outcome on projects success. There is a positive relationship between risk management and project outcomes despite the review suggesting that factors like organizational culture and stakeholder engagement also highly impacts project outcomes. Effective risk management entails proactively monitoring risks and addressing them well in time. Many organizations in these sectors approach risk management reactively rather than proactively, which can result in project delays, budget overruns and compromised quality (Khan, 2025).

Risk management is a crucial factor in the success of a project and project managers need to proactively manage the risks that their respective projects are exposed to in order to maximize the project outcomes in terms of time, cost and quality.

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