

عنوان البحث

Effect of Integrating Artificial Intelligence into Project Management office Tasks and Tools: Challenges and Opportunities

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Artificial Intelligence (AI) is increasingly becoming a powerful tool for enhancing organizational efficiency and project management effectiveness. Project Management Offices (PMO) play a critical role in standardizing and improving project practices within organizations. Therefore, this research aims to explore the integration of artificial intelligence into PMO tasks and tools, identifying potential opportunities and challenges associated with its application.

### مشكلة الدراسة:

Despite the growing interest in AI applications, many organizations struggle to effectively integrate AI into PMO practices due to unclear understanding, inadequate infrastructure, and resistance to change. Consequently, there is a noticeable gap between potential AI benefits and practical implementation within PMOs

## أهمية الدراسة:

The significance of this study lies in highlighting how AI can enhance PMO functions, including risk management, resource allocation, decision-making, and reporting. It will contribute practically to organizations looking to adopt AI, providing insights into overcoming challenges and capitalizing on opportunities.

## أهداف الدراسة:

- To explore how AI can be integrated into PMO tasks and tools.
- To identify the opportunities AI offers to PMO operations.
- To investigate the challenges organizations face in applying AI within PMO settings.
- To propose a practical framework for effectively implementing AI within PMO.

## تساؤلات الدراسة

- How can artificial intelligence improve PMO tasks and tools?
- What opportunities does AI integration present to organizations?
- What challenges might organizations face when implementing AI in PMOs?
- How can these challenges be overcome to achieve greater efficiency?

## فروض الدراسة:

- There is a positive correlation between integrating AI and enhanced project management office performance.
- Organizations face significant technical and structural challenges in adopting AI within PMO functions.

In previous studies, the application of AI has also led to improvements in cost estimation within project management. A hybrid AI model integrating genetic algorithms, for instance, has demonstrated significantly greater explanatory power in enhancing construction cost estimation, which is often subject to systematic errors. The application of AI has also led to improvements in cost estimation within project management. For example, a hybrid AI model that integrates genetic algorithms has shown significantly greater explanatory power in enhancing construction cost estimation, which is often prone to systematic errors.

In risk management, AI-powered value-based project portfolio optimization tools that incorporate advanced machine learning techniques like cluster analysis and usability regression have been crucial in helping organizations with substantial R&D portfolios achieve cost savings. The combination of human skills and technical systems, facilitated by AI, has resulted in enhanced performance and a more motivated organizational culture, thus ensuring continuous improvement. Vicci, H. (2024)

#### المنطلقات النظرية للدراسة:

- Project Management Theory
- Digital Transformation Theory
- Artificial Intelligence Principles and Applications

#### المنهجية وطرق البحث:

- Literature review
- Analysis of existing studies and reports.
- Establish quantitative Survey analysis
- Data Analysis

#### أدوات الدراسة:

- Literature Review: A comprehensive review of existing literature will establish a theoretical foundation, identify best practices, and gaps in knowledge, guiding subsequent research phases.
- Surveys: Structured surveys will be administered to a diverse sample of organizations.
- Data analysis tools: statistical analysis techniques such as SPSS or Megastat for quantitative survey data, will be used to analyze and interpret findings.

#### حدود الدراسة:

- Ethical Considerations: Ensuring participant confidentiality, informed consent, and ethical data handling practices throughout the study is crucial, potentially constraining access to certain types of data.

## المراجع:

Vicci, H. (2024, December). The Power of Artificial Intelligence in Project Management: A Review and Evaluation Study. In *CS & IT Conference Proceedings* (Vol. 14, No. 24). CS & IT Conference Proceedings.