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Original Article

Use of AI in Project Management: A Risk or Reward?

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Abstract *- This study explores the dual impact of Artificial Intelligence (AI) in project management, highlighting both its potential as a transformative tool and its associated risks. Through a qualitative analysis of secondary sources and industry case studies, the paper identifies AI's key contributions, including automation of routine tasks, enhanced data analysis, improved accuracy in decision-making, and increased operational efficiency. However, it addresses ethical challenges, data security threats, and workforce displacement. Case studies from IBM and Airbus demonstrate tangible benefits from AI implementation while revealing integration hurdles and the need for robust data governance. The findings underscore the importance of a balanced approach that maximises AI's advantages while mitigating risks through responsible governance, workforce upskilling, and ethical oversight. This paper contributes to the ongoing discourse by offering practical insights and recommending gradual, well-monitored AI adoption in project environments.*

Keywords *- AI, Data-Driven Decision Making, Project Management, Data Security.*

1. Introduction

AI is, therefore, seen as a strategic element of development in the field of project management, where new tools are being developed that have the potential to change the way projects are planned, executed, and controlled.

The potential of AI in analysing big data, determining the results of the analysis, performing routine operations, and making decisions in a project makes it valuable in contemporary project management (Filippetto, Lima and Barbosa, 2021).

However, such integration comes with several challenges that can be seen as risks, including ethical questions, data security threats and job automation. This is a significant concern to the project managers who have to balance whether to use the AI or not, given the implications that come with it.

This paper aims to explore the dual nature of AI in project management, addressing the following research questions: This paper aims to explore the dual nature of AI in project management, addressing the following research questions:

How can organisations manage these risks and benefits for the best project results?

To this end, the paper aims to make a practical contribution to the ongoing discussion on AI in project management and provide application-oriented recommendations for researchers and practitioners.

2. Literature Review

2.1. Overview of AI in Project Management

AI has quickly become a disruptive technology in project management since it provides solutions that improve several project factors. Some of the clever technologies are predictive analytics, natural language processing, and machine learning algorithms that can enhance the performance of business processes, reduce the effect of human intervention and provide accurate decisions (Bodea, Mitea and Stanciu, 2020). For example, it can self-organise work, generate meetings or resource demands, and identify possible risks in a project, leaving the project managers to concentrate on more complex aspects.

AI used in project management is about improving the technologies used for management and changing project definition and management. Among the best ways that the current and future project management methodologies continue to evolve is through the increasing use of artificial intelligence systems that help realise better efficiency and scalability than conventional project management methodologies that mostly take on manual approaches and human supervision.

2.1. Benefits of AI: Efficiency, Accuracy, and Data-Driven Decision-Making

The most captivating value of AI in project management is the improvement of efficiency. Human-centric AI systems can be applied to automate various monotonous tasks, from resource schedules for assignments to task status. Besides, it

brings many benefits, such as shortening the timelines for completing projects while at the same time eliminating mistakes, which are typical for some manual operations.

AI also enhances the accuracy in managing projects by a considerable margin. AI can sum up big data loads while searching for patterns and trends beyond a human analyst's analytical capabilities (Wong *et al.*, 2024). This is especially true in projects that involve many factors to consider, where decision-makers may be hard-pressed to make choices. Applying AI deque in decision-making can supply project managers with data, which they use to control the considered decision process and make more accurate Project decisions.

Further, with AI's help, data analysis becomes much easier as the accurate results related to the projects' performances can be received immediately. Computing systems are a vast resource that can rapidly analyse big data and provide valuable information that enables project managers to modify their approach and increase their chances of a successful project outcome. Such understanding is especially valuable in projects with fluctuating conditions, as such projects can need a fast reaction.

2.2. Risks of AI: Ethical Concerns, Data Security, and Job Displacement

The problem with AI integration also comes with advantages. If applied in project management, it comes with the following risks: The performance-related challenges are as follows: Ethical issues, which are critical, among them being the ability of AI to reinforce pre-existing discrimination within decisions (Flyvbjerg, 2021). AI systems are only as nonpartisan as the data they are derived from, and if that data has a bias, then the system's bias will also be seen, which is unfair to give biased results.

Data security is another downside of using AI in project management since its results may be manipulated. AI systems work on data with data help, often containing confidential or confidential data. There are consistently increased chances of data leaks and unauthorised access whenever AI systems are enhanced if they are not sufficiently protected. Data security and safeguarding against cyber risks are significant issues that project management stakeholders must consider when deploying artificial intelligence.

The probability of displacement from a job is also one of the significant concerns AI brings. With improvements in AI capabilities to execute tasks previously performed by humans, there is potential to automate specific roles within project management.

Such change could potentially cause personnel redundancy and raise issues regarding skills development management, employee training, and development in the new emphasis on incorporating AI-related technologies within the working environment.

2.3. Summary of Previous Studies and Identified Gaps

The prior literature concerning AI application in project management primarily discusses the opportunities deriving from the technology and possible increases in efficiency. Although these studies present the benefits of adopting AI, little research has directly addressed the evaluation of risks accompanying the implementation of Artificial Intelligence. However, the existing literature lacks research that provides an equally corresponding perspective on the benefits and threats of organising AI utilisation for project management (Niederman, 2021). This paper will aim to fill this gap by presenting a general overview of the advantages and disadvantages of using AI, emphasising the potential challenges project managers are most likely to encounter when implementing the changes.

2.4. Case Studies

2.4.1. Case Study 1: IBM's Use of AI in Project Management

Currently, IBM is among the first to employ AI in its project management, primarily through the help of Watson AI. Watson is connected to IBM's project management systems to perform time-consuming tasks like altering a project's status, controlling a project's processes, and monitoring the project's due dates so that project managers can focus on making additional, higher-level decisions. Furthermore, Watson's predictive analytics facilitates the evaluation of data on previous projects as a way of ascertaining risks that may stall a project or exaggerate its cost (Han *et al.*, 2021). IBM also uses Watson's Natural Language Processing, which lets the project managers communicate with Watson in a relaxed language, and Watson processes it systematically to assess tasks and project statuses. Consequently, IBM has been able to experience improved company productivity of twenty per cent and fewer project failures due to the enhanced risk assessment. Of course, there were difficulties for IBM in teaching AI to operate according to new organisational business procedures related to the various departments' workflows, and there were questions about data security when working with exclusive information related to projects. Widely, the use of the Watson AI system in IBM affairs suggests that there are huge advantages that AI can bring to organisations in terms of automating processes and enhancing decision-making, particularly with project management.

2.4.2. Case Study 2: Airbus' Use of AI in Project Management

For instance, Airbus Company, an aerospace firm, has applied AI in the management systems in its project delivery since its processes, such as airliner construction, are intricate. The company has also integrated the use of Artificial Intelligence to track the supply of parts by different suppliers worldwide. The system allows ample real-time assessment of the suppliers' and logistics' overall efficiency and forecasts potential disturbances to the production flow. Furthermore, AI in Airbus is used in quality control, which entails using big data from sensors installed within the aeroplane production line. It becomes easier to realise deviations or errors and

correct them as they occur rather than halt the production process due to the discovery of a mistake (Wong *et al.*, 2024). AI has helped Airbus manage project timelines and eliminate supply chain-related time overruns. However, as was expected, Airbus faced some issues when adopting AI as a part of its IT solutions, with primary concerns in integrating AI solutions into the company's IT infrastructure, as well as concerns regarding data safety, which is important to guarantee in aerospace manufacturing. The case of Airbus is a good example of how AI brings benefits and improves large-scale manufacturing project management. However, it also shows what security measures should be taken in data processing.(Filippetto, Lima and Barbosa, 2021)

3. Methodology

3.1. Research Design

Based on the objectives stated above, this paper uses a qualitative research approach and only surveyed and analysed secondary sources to evaluate the benefits and drawbacks of artificial intelligence applications in project management (Allal-Chérif, Simón-Moya and Ballester, 2021). Because this study only relies on secondary data sources and is confined to peer-reviewed journal articles, case studies, industry reports and other related literature, this research intends to offer a clear picture of the state of AI in project management integration.

A qualitative research paradigm was adopted in this study to provide a deeper understanding of the study subject since it was more focused on understanding the experiences of project managers who have incorporated AI tools in their projects.

3.2. Data Collection Methods

Data gathering in this study was therefore done through secondary research. With this, a literature review was conducted to review previously published literature on Artificial Intelligence in project management, emphasising the advantages and disadvantages of implementing AI in this context (Niederman, 2021). Sources were filtered from scholarly journals, books, reports, and cases from industries like technology, healthcare, finance and construction. The research aimed to identify how organisations that have adopted AI for project management have benefited from it and what difficulties they encountered.

Furthermore, case studies were identified to understand how AI has been adopted in project management and the results generated. The choice of case histories provided clear lessons on the matters that had been implemented well and those that had not been implemented well about the application of AI.

3.3. Sample Selection and Analysis Techniques

The research incorporated secondary data from different sectors, particularly focusing on firms incorporating AI tools in project management. The industries in this study, including technology, finance, and healthcare, were chosen because their incorporation of AI is often different.

The qualitative data collected from these secondary sources were analysed thematically to realise AI patterns, trends, and challenges in PM (Allal-Chérif, Simón-Moya and Ballester, 2021).

The cycles of efficiency, accuracy of decisions, considerations related to data security and ethical questions, and workforce displacement were identified as common themes. These themes were then compared cross-sectorally so that similarities and dissimilarities in the usage of AI in project management could be pinpointed.

4. Results

4.1. Presentation of Data Collected

The research literature showed that all the sources coincide and noted that AI is capable of enhancing project management to a great extent. In various works, efficiency was determined to be improved by the application of AI in multiple ways, such as by decreasing the amount of time spent on tedious and repetitive tasks and leaving the project managers free to concentrate on more important endeavours. For example, technologies in artificial intelligence were found to optimise procedures like scheduling resources and monitoring the project progress, saving a significant amount of time for project management.

At the same time, the data revealed that there were also critical concerns concerning the dangers and threats of AI's utilisation in organisations. In a number of the cases discussed, data security became a concern, especially in the field of business, which involves the processing of information (Niederman, 2021). Security issues were mentioned as one of the outstanding problems that must be solved to cope with AI adoption. Ignorance and ethical issues were frequently mentioned, particularly regarding bias in decision-making by artificial intelligence.

Regarding the impact of AI on employment, the following data indicated that AI might take over some positions within project management. On the downside, AI has solved everyday simple tasks, creating worry that employees might be laid off, especially from repetitive positions. This was especially so in the case of companies that operated in the finance and healthcare industry, which showed signs that automation had gradually started replacing certain human functions.

4.2. Key Findings Related to Risks and Rewards

Based on the results of the qualitative analysis, it was pointed out that AI is a double-edged sword in project management. On the positive side, AI entails many benefits that enhance the organisation's productivity, enhance

decision-making accuracy, and ensure faster data processing. Such benefits were evident throughout the various cases, especially for firms operating in industries with substantial data dependency on project results.

However, the factors of concern regarding the use of AI are well known. Data security and ethical issues were among the primary concerns resulting in risks, as shown by examples of possibilities for AI to bring additional threats into project management.

Further, preoccupation with the loss of jobs owing to mechanisation was also underlined as a significant issue, especially in sectors that are likely to experience a rise in the use of technology shortly.

4.3. Discussion

4.3.1. Interpretation of Results

As such, this research propounds the idealistic paradigm that AI improves project management efficiency and decision-making prowess. However, with AI's application, certain inherent significant risks must be addressed. The threats to data security and ethical issues portrayed by secondary sources suggest the need to put good governance structures in place to regulate the use of AI in management projects.

When evaluating the overall thematic analysis, it is seen that while there are definite positive benefits of AI implementation, there are several negative aspects that organisations have to consider before adopting AI systems. Project managers must address these issues, which will assist and integrate AI to afford proper value without causing more harm than good.

4.3.2. Implications for Project Management Practices

The use of AI in project management has impacted both the practice of project management and the position of project managers. In order to increase the efficiency of using artificial intelligence in online project management, the latter will require new competencies, such as data analysis and AI regulation. Also, there will be a need for human capital to implement AI projects, so organisations will need to allocate resources towards training and development.

Finally, because AI is now being integrated into project management, ethical and social issues will also grow to be paramount determinants of the future of AI in project management. Organisations, therefore, must create specific policies to guide the use of Artificial intelligence so that the decisions made by artificial intelligence are open and closely resemble justice.

Moreover, measures should be taken to counter potential threats to job loss, such as training schemes that would enable employees to undergo training as they move to new occupations and jobs.

4.3.3. The Balance Between Risk and Reward

Adopting and implementing AI in project management entail benefits and risks, so there is a need to balance the two. This means that apart from evaluating the benefits of AI tools, organisations must also weigh the risks. This assessment should inform the right governance policies to ensure the correct use of AI.

One potential means of addressing such pros and cons is the cyclic deployment of AI-based tools in project management, where AI tools are introduced gradually over time. In this way, organisations can contain the risks of AI and keep track of its effect to adapt their strategies to the new developments.

5. Conclusion

They are also aware that there is a dark side to AI and that there are benefits to utilising it in project management. The qualitative content analysis of secondary sources indicates how AI ch- is associated with numerous advantages, including efficiency and decision-making, but also with several risks, such as the lack of data security, ethical concerns, and job displacement. Risks are always present in every project; the project manager must know them and try to avoid them.

The use of AI in project management has different meanings and consequences in theoretical and applied-real contexts. Thus, theoretically, this work enlarges the body of knowledge about AI in project management by giving an impartial evaluation of the advantages and disadvantages of AI implementation. The results underscore the value of strong governance structures, ethical standards, and workforce training initiatives in applying AI in project management.

Recommendations for Future Research

Future research should expand upon the identified dangers and potentials of AI applications in project management and pay special attention to the issues related to AI management. Further, more work has to be conducted to analyse the consequences AI would bring about years from now regarding the staff's employment outlooks and to study how far the unfavourable repercussions of job automation could be contained. With the help of future research, it will be possible to state that all the existing problems will be solved, and AI will be used most effectively without causing more harm than beneficiary. AI is considered and can offer vast changes to the management of projects by providing new technologies and possibilities for improvement of the project results. However, incorporating AI also brings new issues that must be appropriately addressed. Overall, the use of a risk-reward approach is beneficial because it allows a project manager to achieve project outcomes by using AI as a helpful tool while at the same time considering the ethical, social, and security aspects that are encompassed by this technology.

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