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Will Artificial Intelligence Replace Project Managers? A Case Study on the Use of Three Leading Tools: Wrike AI, JIRA With Atlassian Intelligence, and Microsoft Project With Copilot AI

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Abstract

Aim: This study explores the impact of artificial intelligence (AI) on the role of project managers, focusing on the analysis of three key AI-powered tools: Wrike AI, JIRA with Atlassian Intelligence, and Microsoft Project with Copilot AI. It also examines how these tools are shaping the evolution of project managers' skills.

Methodology: The research methodology includes a literature review and critical analysis of the selected tools, examining their capabilities in automating tasks, enhancing risk analysis, and generating reports.

Results: The study shows that AI significantly enhances efficiency and decision-making in project management, especially in automating routine tasks. However, complete automation cannot replace human skills in managing complex projects.

Implications and recommendations: Project managers must develop competencies in AI collaboration, data analysis, and ethical considerations. Future research should explore the evolving role of AI in supporting more complex project management tasks.

Originality/value: This study offers valuable insights into integrating AI in project management, highlighting the need for a balanced approach between automation and human expertise.

Keywords: Artificial Intelligence, project management, automation, decision-making, collaboration

1. Introduction

In the face of the rapidly evolving IT market, implementing artificial intelligence (AI) solutions is beneficial and essential for companies seeking to enhance productivity and efficiency within their teams.

Artificial Intelligence is the simulation of human intelligence in computer systems that mimic cognitive functions such as learning, reasoning, problem-solving, and decision-making. All encompasses various techniques and technologies that enable machines to perform tasks typically requiring human intelligence (Thakur et al., 2024).

In the IT sector, new enhancements emerge that support effective resource management. Whether or not organisations are ready for these changes, their implementation is inevitable. According to the survey by McKinsey & Company (2021), 56% of surveyed companies reported introducing at least one AI feature. Companies choose to implement AI tools and automation to improve workflow, make better decisions, and respond more quickly to changing market conditions and new opportunities. Digital transformation primarily focuses on five key areas (O'Brien et al., 2024):

- business and operating models,
- processes,
- products,
- employee experience,
- customer experience.

Each of these areas, to a greater or lesser extent, impacts the management of IT projects, emphasising the importance of integrating AI solutions into project strategies. The details are presented in Tab. 1.

Table 1. Impact of AI on IT Project Management

Domain	Impact of AI on IT Project Management
Business and Operating Models	Cost optimisation: Al enhances efficiency by identifying inefficiencies and reducing costs through resource performance analysis, enabling organisations to implement more effective operational strategies. Automation of routine decision-making processes: leveraging predictive models, Al aids decision-makers in determining project development directions by forecasting potential outcomes of various actions. Risk analysis: Al continuously monitors project metrics in real time, identifying potential threats and suggesting preventive measures to mitigate risks.
Processes	 Planning and scheduling: Al automates project planning by generating timelines and resource allocations based on insights from previous projects and available data, ensuring optimal use of time and resources. Workflow management: Al-powered tools anticipate delays and bottlenecks, recommending adjustments to task flows to maintain project momentum. Monitoring and reporting: automated Al-generated reports allow managers to track project progress seamlessly, eliminating the need for manual data collection.
Products	Development of new features and products: Al analyses market needs and user feedback, facilitating product development processes and enabling rapid prototyping. Quality management: Al automates software testing, identifies bugs, and suggests fixes, ensuring high-quality deliverables. Product personalization: Al tools assist in creating products tailored to specific customer needs by analysing user preferences and consumption data.
Employee Experience	 Task support for employees: Al-based systems recommend optimal task execution methods and identify available resources, enhancing time management and productivity. Skills development: Al analyses training needs based on employee skill sets and achievements, suggesting personalised development paths. Communication improvement: chatbots and virtual assistants support employees in resolving daily issues and automating routine administrative tasks, fostering efficient communication.
Customer Experience	 Prediction of customer needs: Al-driven analysis of CRM data enables forecasting customer requirements and suggests proactive actions to address them. Customer service automation: Al-powered chatbots and virtual assistants provide 24/7 customer support, reducing response times and enhancing service quality. Sentiment analysis: Al tools analyse customer feedback to identify areas for improvement, supporting the development of more tailored products and services.

Source: own elaboration based on (O'Brien et al., 2024).

Considering the invaluable support that artificial intelligence (AI) can provide in various aspects of project management, a pertinent question arises: what role do the project managers play? Is their presence still essential? What tasks will fall under the manager's responsibility when so many duties can be delegated to AI? These questions become increasingly relevant given the rapid development of AI tools and their influence on the daily lives of people around the globe.

This article aims to assess how the growing influence of Al-powered project management tools is reshaping project managers' roles and competencies and to explore the extent to which these tools can potentially replace traditional project management tasks.

The article focuses on how advanced AI technologies such as Wrike AI, JIRA with Atlassian Intelligence, and Microsoft Project with Copilot AI transform key aspects of project management, particularly in decision-making, data analysis, and team coordination. It considers the scope of project managers' responsibilities from the perspective of evolving artificial intelligence solutions. The author seeks to answer the questions: which tasks can be automated or enhanced by AI, and what new competencies are essential for effective management in the digital transformation era?

The article employs a methodology based on a critical literature review and functional analysis of selected AI tools in project management. The structure includes an introduction to the subject, a review of key project manager competencies in the AI context, a detailed analysis of the selected tools' functionalities, and conclusions about the future role of project managers in an AI-driven work environment.

2. Characteristics of IT Projects and Management Challenges

A project can be described in various ways based on definitions from key project management methodologies. According to the *PMBOK Guide*, a project is a temporary endeavour to create a unique product, service, or result with a specific time frame and defined scope (PMI, 2021). In contrast, PRINCE2 defines a project as a temporary organisation established to deliver one or more specific products guided by an approved business case (TSO, 2014). Both approaches emphasise the temporary nature of projects and focus on delivering distinct outcomes, although their definitions highlight different aspects of project structure and objectives.

2.1. Core Responsibilities of an IT Project Manager

The team is led by a Project Manager (PM), responsible for planning, resource allocation, progress tracking, and ensuring the successful completion of the project (Malsam, 2023). Key resources for project execution include personnel, materials, and equipment. Agile methodologies are often used to manage projects. However, their implementation is most effective when supported by creating an 'agile environment' – comprising both an agile IT infrastructure and an agile organisational culture (Adamus & Lasek, 2014). These elements allow organisations to fully leverage the advantages of agile approaches, which, in turn, can help shape and enhance this environment if adequately supported. In today's context, artificial intelligence provides additional support, aiding in task automation, data analysis, and decision-making, further strengthening project teams' agility and efficiency.

According to Cech and Chadt (2015), an ideal project manager should possess a blend of emotional, social, cognitive, and leadership competencies to drive project success. Key attributes include self-awareness, which enables the PM to recognise personal emotions and their influence on team dynamics, fostering better decision-making and confidence. Social awareness is essential for understanding team needs and organisational contexts, ensuring practical empathy and service orientation. Self-management competencies, including adaptability, emotional control, and optimism, enable a project manager to navigate challenges and maintain momentum under pressure effectively. Among the various PM profiles, strong communication skills were identified as particularly essential (Zemlińska-Sikora & Kozarkiewicz, 2023).

Additionally, relationship management is crucial for inspiring and influencing team members, managing conflicts constructively, and cultivating collaboration. Beyond emotional intelligence, high-performance competencies such as cognitive abilities (information analysis, problem-solving), developmental skills (nurturing team growth), inspirational abilities (confidence, persuasion), and achievement orientation (goal-setting and proactive leadership) are vital.

2.2. Managing the IT Project Life Cycle

According to Pinto and Slevin (2018), the project life cycle in IT consists of four stages: conceptualisation, planning, execution, and termination. The authors highlight the actions a traditional project manager must undertake in each phase.

Phase 1. Conceptualization

In this phase, defining a clear project mission and understanding client needs is crucial. The project manager should ensure that all parties are aligned on project goals and that key stakeholders are engaged from the outset. Challenges in the conceptualization phase include:

- Lack of clarity regarding the project mission: undefined goals and expectations can lead to stakeholder misunderstandings, hindering effective planning.
- Insufficient engagement of key stakeholders: difficulties securing full support from clients and project sponsors early on.
- Misunderstanding of client needs: inadequate consultation with the client may result in a project that does not meet their expectations.

Phase 2. Planning

In this phase, the project manager must refine the project mission, secure support from the management, and obtain full client acceptance. It is also vital to create a sense of urgency within the team, which will aid in mobilising resources and maintaining momentum. Challenges in the planning phase are as follows:

- Lack of management support: insufficient support in the form of resources or lack of authority to make decisions may limit execution capabilities.
- Complexity in obtaining client acceptance: difficulties in persuading the client to approve the action plan or proposed solutions.
- Absence of urgency within the team: challenges in creating an atmosphere that motivates swift action and task completion according to the schedule.

Phase 3. Execution

In the execution phase, the key task is effective schedule management and rapid problem resolution. The Project Manager must monitor the progress of technical tasks, manage the team, and maintain effective communication with the client to ensure that the project remains aligned with its original objectives. This phase often presents the most significant burden for the project manager and is filled with challenges that may arise during project execution. Key challenges include:

- Change management and unforeseen problems: difficulties in identifying and effectively resolving emerging issues can impact project timelines.
- Insufficient team skills: competency gaps within the team may hinder the completion of technical tasks.
- Lack of alignment with the project mission: there is a risk of losing sight of the project's original goals, which may lead to deviation from established objectives.
- Scheduling issues: challenges in maintaining the planned schedule due to unforeseen delays or technical problems.

• Ineffective communication with the client: inadequate communication can lead to client dissatisfaction and challenges in meeting their requirements.

Phase 4. Closure

In the final phase, ensuring that all technical elements function correctly and that the project achieves its intended goals is essential. It is crucial to address client satisfaction before the project is officially closed and to ensure that the outcomes meet stakeholder expectations. However, the closure of a project does not signify the end of work and challenges for the project manager. They may encounter:

- technical system tuning issues: difficulties in ensuring that all technical aspects function according to specifications can delay project handover;
- client dissatisfaction: failure to meet client needs can negatively affect the project's reputation and future collaborations;
- final alignment with the mission: implementing minor changes at the last stage to ensure the project meets all intended objectives may prove challenging.

The tasks outlined above clearly indicate that the project manager is responsible for the project's success. However, modern AI solutions may be employed to minimise the number of management-related tasks, automate processes, and potentially even replace the project manager's role within the team.

2.3. Future Skills for IT Project Managers

Technological advancements driven by Industry 4.0 will reshape project management by revolutionizing task execution and monitoring through rapid information flow. Teams will be more diverse, leveraging various expertise (Ribeiro et al., 2021). While automation and robotics will enhance efficiency, they may also reduce human involvement in certain areas, ultimately transforming management practices and redefining the project manager's role.

Mitrović et al. (2023) evaluated the digital skills of future project managers and found that while participants rated their skills as relatively high, their overall competency was categorized as 'low advanced'. Information and data literacy were strong points, but digital safety was identified as a significant weakness, particularly in privacy and cybersecurity. These findings highlight the need for tailored educational programmes to improve digital competencies for future project managers in a technology-driven landscape.

Project management is evolving significantly due to the Fourth Industrial Revolution and the Digital Economy, necessitating a shift from traditional practices (Cabeças, 2022). This evolution requires project managers to embrace new paradigms and adapt their profiles to meet the complexities of modern projects. Bolick (2019) highlights four essential strategies for effectively navigating these changes:

- promoting agility by acting as agents of change and leading multidisciplinary teams,
- enhancing leadership skills like cognitive flexibility and emotional intelligence,
- managing resources by forming cross-functional teams that integrate advanced technologies such as robotics and computing,
- refining emotional intelligence to balance innovation with stability while fostering collaboration and employee motivation.

Researchers highlight the increasing significance of social skills alongside technical expertise in utilising Business Intelligence (BI) and Big Data for organisational success (Espíndula Malanima, 2018). Implementing a strong change management strategy, such as 'Project Management as a Service', is crucial for modernizing practices and enhancing competitiveness (Stoshikj et al., 2013). By embracing innovation and leveraging advanced technologies and data-driven insights, project managers can improve transparency, adaptability, and success rates in today's project management landscape.

3. The Impact of AI on IT Project Management

According to a report by Freshworks (2024), five key performance indicators following the implementation of AI solutions in the workplace:

- 52% increase in productivity,
- 47% improvement in work quality,
- 34% enhancement in client engagement,
- 33% increase in profits,
- 32% improvement in employee satisfaction.

The use of Artificial Intelligence (AI) in IT project management is on the rise, with tools and functionalities evolving rapidly. Gartner (2019) predicts that by 2030, 80% of current project management tasks will be automated. AI, machine learning (ML), and bots are expected to significantly affect both technical and interpersonal skills. Research suggests that in the next five years, over 76.76% of tasks needing hard skills and 52.08% requiring soft skills will be performed by AI, ML, or bots (Nimmo & Usher, 2020). This automation will transform how project management tasks are conducted. Examples of AI applications in this field are detailed in Table 2.

Table 2. Al applications in project management

Operation	Task
Schedule generation	Al can automatically generate project schedules, considering available resources, time, and tasks. Predictive algorithms can also forecast delays and bottlenecks.
Task management	Al tools can assign tasks to team members based on their skills and workload.
Risk detection	Artificial intelligence can identify potential threats to a project by analysing historical and current data.
Chatbots and virtual assistants	All enables the creation of chatbots that support team communication by answering frequently asked questions and automating information processes.
Risk modelling	Al can analyse various project scenarios, predicting potential risks and suggesting methods for their mitigation.
Resource optimisation	Al allows for effective management of project resources by analysing data related to availability and performance.
Process automation	Using AI to automate routine tasks enables team members to focus on more strategic activities.
Project performance evaluation	Al can analyse data from completed projects, providing insights into performance efficiency and areas for improvement.
Machine learning	Machine learning algorithms can learn from historical project data to predict future outcomes and support decisions regarding upcoming projects.

Source: own elaboration based on (Brown, 2025).

The use of AI tools continues to shape project teams' work and the project manager's tasks. However, it is important to note that AI solutions also face various challenges and limitations that can significantly impact the quality of outcomes. A primary challenge is the lack of data and its poor quality (Janik et al., 2024).

Concerns about security, privacy, ethics, and accountability are also crucial. Despite employing advanced algorithms, users often struggle to understand the results and apply them in practice, ultimately rendering them ineffective.

Research conducted by Felicetti et al. (2024) illustrates how adopting generative AI tools, such as ChatGPT, revolutionises the way project managers handle tasks and make decisions. The study emphasises the critical role of adaptability in project managers, suggesting that their ability to embrace new technologies is key to effectively leveraging AI in project management. Innovation Attitude, Peer Influence, and Task-Technology Fit are highlighted as crucial for successfully adopting and using

generative AI tools. The research also underscores that while AI can enhance operational efficiency by automating tasks, it alters cognitive functions, significantly transforming traditional project management approaches. The integration of AI in project management is not limited to streamlining processes but also reshaping decision-making and problem-solving strategies. Weng's research (2023) reaches a similar conclusion, highlighting the transformative potential of integrating tools like ChatGPT-4 into project management.

A key insight from the research is the importance of aligning AI tools with specific project management tasks to optimise performance and impact. Polish researcher Wachnik (2022) examined four projects to identify the AI tools used. His findings revealed that the most used AI tool was translation, primarily for translating correspondence and project documentation. The second most frequently used tool was text recognition, which digitised documents like invoices and timesheets and integrated them into ERP and DM systems. Robotic Process Automation (RPA) was used to detect budget discrepancies and notify decision-makers. Additionally, chatbots played a vital role in post-implementation services, providing users immediate access to information via AI-driven knowledge transfer. All these AI tools were focused on automating routine tasks, thereby improving process efficiency and reducing transaction costs in project management.

The integration of AI in agile project management has shown significant benefits, including a 20% improvement in estimation accuracy and a 15% reduction in team member idle time, leading to better sprint planning, productivity, and faster project completion (Zadeh et al., 2024). However, challenges remain, such as ensuring data quality, avoiding biases, and balancing AI insights with human expertise. Developing skills in data analysis and AI tools is essential for project managers. Additionally, understanding human-AI collaboration is key to optimising AI's role in decision-making and team productivity, enabling better outcomes and more successful projects.

Niederman (2021) identifies several promising directions for developing AI tools in project management. He emphasises the importance of using design science and action research to advance Al applications, focusing on their ability to enhance project outcomes. According to Niederman, design science can help establish design principles and methodologies for new AI tools. At the same time, action research explores these tools' development, implementation, and operationalisation in real--world project management environments. He also advocates for examining the impact of AI features, like graphical dashboards, on project performance. Key questions include how these tools contribute to outcomes, how project managers accept them, and the ease of integrating with other systems. Niederman further suggests that grounded theory and qualitative research can offer insights into how working on projects evolves as AI tools become more sophisticated, from minimal support to full utilisation. Another exciting avenue he explores is the potential for AI-powered platforms that offer tools and services for individual projects while enabling collective analysis across portfolios. Finally, Niederman raises thought-provoking questions about the broader societal impacts of fully automated project management, including how it might affect organisational strategies, team cultures, and even values such as environmental considerations in project selection. His study calls for a deeper understanding of these transformative changes as AI continues to reshape the future of project management. Recently, some AI tools specifically designed for project management have been established and are the subject of further research in this paper.

4. Analysis of tools: Wrike AI, JIRA with Atlassian Intelligence, Microsoft Project with Copilot AI

Each analysed tool is designed for project management according to various methodologies. This study does not cover their essential functions, which are similar. Instead, it focuses on the AI solutions implemented within these tools, aimed at enhancing user experience and supporting the work of the project manager.

4.1. Wrike's Work Intelligence

Wrike includes a self-learning AI engine designed for work management, which offers recommendations, reduces routine tasks, and predicts outcomes. Its AI content generation helps users create briefs and plans efficiently while maintaining organisational consistency. The platform automatically detects errors and allows for translations.

Risk prediction is a notable feature that analyses historical data to identify potential project issues, providing a comprehensive risk overview. Advanced AI analytics help to prevent delays, optimise resources, and ensure timely delivery. Additionally, the AI summary function offers quick recaps of discussions, aiding access to essential information.

Wrike's AI mobile feature directly allows task delegation from smartphones, significantly cutting administrative time. The AI action items feature identifies key tasks, analyses plans and meeting notes, and assigns subtasks for efficient project execution (Wrike, n.d.).

4.2. JIRA With Atlassian Intelligence

Atlassian Intelligence is a suite of AI-based features to boost productivity and collaboration in tools like Jira and Confluence. It automates routine tasks, generates content, and provides analytics based on organisational data. Users can create project reviews, summarise content, and identify key action items with simple commands. Integrating with Jira automates workflows and summarises reports, reducing administrative burdens and speeding up project execution. These features leverage over 20 years of data, enhancing prediction accuracy and team efficiency (Atlassian, n.d.).

4.3. Microsoft Project With Copilot Al

Microsoft 365 Copilot enhances project management by automating key processes such as project planning, communication, documentation, data analysis, and risk management. It generates schedules, predicts obstacles, and suggests resources, enabling quick task assignments. With summarisation features, it improves team communication by allowing users to focus on critical issues within lengthy discussions. Copilot also automates project documentation generation and can create initial reports and plans using simple commands. Integrating with Microsoft Graph offers insights into project progress and key performance indicators while using predictive analytics to identify potential threats and delays, which is crucial for complex IT projects (Microsoft, n.d.).

Table 3. Summary of the available features

Application	Wrike Al	JIRA z Atlassian Intelligence	Microsoft Project z Copilot Al
Project management	Enables creating and managing tasks and projects, facilitating team collaboration and progress tracking.	Effectively manages the backlog, allowing for task tracking and prioritisation.	Integrates project planning functions with automation, enabling quick schedule adjustments.
Planning and Scheduling	Automates the planning process by generating schedules based on historical data and forecasts.	Allows for visualisation of processes and planning of Agile iterations.	Analyses data from Microsoft Graphs to create and adjust schedules in real-time.
Team collaboration	Facilitates easy task delegation and close collaboration among team members.	Supports effective communication and coordination within project teams.	Enables real-time collaboration by integrating various applications in the Microsoft ecosystem.
Risk analysis	Predicts risks based on historical data analysis and generates recommendations for preventive actions.	Offers tools for identifying and managing risks within projects.	Allows for risk analysis based on project data, facilitating better crisis management.

Application	Wrike Al	JIRA z Atlassian Intelligence	Microsoft Project z Copilot Al
Task automation	Simplifies task creation and management, reducing administrative time.	Automates processes such as task assignment and report generation.	Enables automatic report generation and progress analysis based on project data.
Report creation	Automates the generation of reports and summaries, allowing for quick progress monitoring.	Offers advanced reporting features for analysing task efficiency.	Generates real-time project status reports, supporting ongoing decision-making.

Source: own elaboration based on (Wrike, n.d.; Atlassian, n.d.; Microsoft, n.d.).

Each tool offers unique features tailored to the needs of various project teams (Tab. 3). Wrike AI excels in task automation and content editing, while JIRA focuses on backlog management. Microsoft Project with Copilot AI integrates AI capabilities within the Microsoft 365 ecosystem, enabling flexible and cohesive project management.

5. Conclusions

The research highlights the changing role of project managers due to advancements in Al-driven tools like Wrike AI, JIRA with Atlassian Intelligence, and Microsoft Project with Copilot AI. These tools improve efficiency through automation in areas like task delegation and risk analysis. Wrike AI focuses on content creation and workflow management; JIRA emphasises backlog management and task prioritisation for agile projects, while Microsoft Project utilises advanced data analysis for real-time scheduling.

However, despite the efficiencies provided by these tools, they cannot replace the critical human elements necessary for strategic decision-making and interpersonal relationship management. Skills such as emotional intelligence, adaptability, and leadership remain essential. To stay relevant, PMs must develop new competencies, including data literacy and effective collaboration with AI systems.

Research suggests that PMs should focus on adapting to new technologies, innovative problem-solving, and data-driven decision-making (Felicetti et al., 2024; Niederman, 2021; Wachnik, 2022). Additionally, developing analytical skills to evaluate AI tool effectiveness is crucial. Overall, these competencies enable PMs to leverage AI for improved project outcomes, positioning AI as a complement to the human aspects of project management.

6. Summary

As artificial intelligence (AI) becomes essential in project management tools, many functions performed by project managers are being automated. While AI enhances efficiency in risk analysis and report generation tasks, it cannot fully replace human oversight. Project managers remain critical for interpreting data, making strategic decisions, and fostering team relationships. Research by Fridgeirsson et al. (2021) highlights that human skills like leadership and interpersonal engagement are irreplaceable despite AI's growing influence.

Many project managers (12-23%) are uncertain about Al's impact on their work processes. Arguments against Al implementation often cite tasks that rely on human traits, such as empathy and creativity, which are difficult for Al to replicate (Młodzianowski & Rostkowski, 2021). Consequently, project managers must adapt by cultivating new skills, including collaborating with Al systems and understanding data analysis.

This study's limitations include lacking empirical data and real-world case studies, mainly relying on literature reviews. Future research could focus on the practical implementation of AI in industries like IT and construction, the ethical implications of AI in decision-making, and how project managers can effectively upskill in AI-enhanced environments.

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Czy sztuczna inteligencja zastąpi menedżerów projektów? Studium przypadku zastosowania trzech wiodących narzędzi: Wrike AI, JIRA z Atlassian Intelligence i Microsoft Project z Copilot AI

Streszczenie

Cel: Badanie analizuje wpływ sztucznej inteligencji (AI) na rolę menedżerów projektów poprzez analizę trzech kluczowych narzędzi z funkcjami AI: Wrike AI, JIRA z Atlassian Intelligence oraz Microsoft Project z Copilot AI.

Metodyka: Metodologia badania obejmuje przegląd literatury, krytyczną analizę wybranych narzędzi i badanie ich zdolności do automatyzacji zadań, poprawy analizy ryzyka oraz generowania raportów.

Wyniki: Wykazano, że AI znacznie zwiększa efektywność i wspiera procesy decyzyjne w zarządzaniu projektami, zwłaszcza w zakresie automatyzacji rutynowych zadań. Jednak pełna automatyzacja nie zastąpi umiejętności ludzkich potrzebnych do zarządzania złożonymi projektami.

Implikacje i rekomendacje: Menedżerowie projektów muszą rozwijać kompetencje w zakresie współpracy z AI, analizy danych i kwestii etycznych. Przyszłe badania powinny zgłębiać ewoluującą rolę AI we wspieraniu bardziej złożonych zadań w zarządzaniu projektami.

Oryginalność/wartość: Badanie dostarcza cennych informacji na temat integracji AI w zarządzaniu projektami, podkreślając konieczność zachowania równowagi między automatyzacją a ludzką ekspertyzą.

Słowa kluczowe: sztuczna inteligencja, zarządzanie projektami, automatyzacja, podejmowanie decyzji, współpraca