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AI-Driven tools and their influence on project decision-making in U.S. technology enterprises

Umme Zinia Zahan Nodia[1], Md Minar Hossain[2], Falguni Rahman[3*], Md Mehedi Hasan Antor[4], Mohammad Tahmid Ahmed[5]
unodia.236@gmail.com[1], minarhossain2024@gmail.com[2], falgunilinda1@gmail.com[3]*, mehedii2626@gmail.com[4], ahmed.m.tahmid@gmail.com[5]
Trine University, Angola, Indiana, USA[1,2,5]
University of Bremen, Germany[3]
National University, Bangladesh[4]

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Abstract

Purpose: This study investigates the impact of AI-driven tools on project decision-making in U.S. information technology (IT) companies, focusing on the roles of predictive analytics, natural language processing (NLP) assistants, and AI dashboards in improving decision quality, project outcomes, and stakeholder collaboration.

Research Methodology: A mixed-methods design combining a systematic literature review and an empirical survey was used. Data were collected from project managers at major U.S. IT firms, including Microsoft, Oracle, and Google, who utilize AI-enabled platforms such as Microsoft Project, Jira, and IBM Watson. Quantitative data were analyzed through regression modeling and descriptive statistics, while qualitative insights were examined using thematic analysis.

Results: The results show that AI technologies significantly improve the accuracy of project decision-making, minimize budget deviations, and strengthen cross-team communication. Predictive analytics enhanced early risk identification, NLP assistants streamlined scheduling and reporting, and AI dashboards increased real-time visibility and stakeholder engagement. Companies demonstrating higher AI maturity achieved superior performance across key project indicators.

Conclusions: Integrating AI into project management enhances decision-making by combining automation with data-driven intelligence. Strategic AI adoption improves efficiency, reduces scope creep, and boosts managerial satisfaction within U.S. IT contexts.

Limitations: The study focuses exclusively on large U.S.-based IT firms, limiting its applicability to smaller or global enterprises. The rapid evolution of AI restricts long-term generalization.

Contribution: This research enriches project management and information systems literature by contextualizing AI's role in high-tech decision-making and offering practical guidance for managers, executives, and policymakers driving digital transformation.

Keywords: *Artificial Intelligence, Decision-Making, Project Management, Predictive Analytics, U.S. IT Companies*

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1. Introduction

Decision-making is the heart of organizational success. In today's dynamic data-driven economy, the accuracy and speed of these decisions determine a firm's ability to sustain competitive advantage. In

the United States, information technology (IT) firms operate in a volatile and highly innovative environment where strategic, operational, and project-related decisions must be made swiftly and effectively. It is worth highlighting the importance of having a defined strategy for the integration and implementation of AI within the organisation to successfully approach the existing challenges (Georgiev, Polychronakis, Sapountzis, & Polychronakis, 2024; PMI, 2023). AI-based DSSs are designed to augment human intelligence by providing analytical insights, predictive capabilities, and real-time recommendations that enable managers to make informed and efficient decisions (Funda & Francke, 2024; Tumpa & Naeni, 2025).

The United States, home to the world's largest and most technologically advanced IT enterprises, provides a unique context for studying AI's impact of AI on project decision making. Firms such as Google, Microsoft, Amazon, Oracle, and IBM have invested heavily in machine learning, data analytics, and AI-driven project management systems to increase operational efficiency and improve decision accuracy (Cooper & Brem, 2024; Ernst, Berg, & Moore, 2024). According to a 2024 Gartner report, over 68% of the U.S. IT firms have adopted AI-enabled project management software, with the majority reporting significant improvements in project timeline adherence, budget control, and stakeholder communication (PMI, 2023; PwC, 2024). However, despite this rapid adoption, empirical research examining how these AI tools concretely influence decision-making and the performance outcomes of IT projects in the U.S. context remains limited (Ajiga, Okeleke, Folorunsho, & Ezeigweneme, 2024; Yang, Blount, & Amrollahi, 2024).

Over the past decade, the U.S.has The IT industry has undergone a remarkable transformation driven by advancements in automation, big data, and artificial intelligence (Salimimoghadam et al., 2025). Traditional project management methodologies, such as waterfall and early agile frameworks, have evolved under the influence of intelligent systems capable of generating insights from massive datasets in real-time (Nenni, De Felice, De Luca, & Forcina, 2025). Applications of business analytics have been broadly categorized as descriptive, predictive, and prescriptive analytics that address the following three questions: what happened, what is likely to happen, and what are the best and worst outcomes under uncertainty? Among these applications, predictive analytics has particularly captured the attention of organizations due to its proactive rather than reactive approach (Endriyono, Gunarto, & Murwiati, 2025). This ability provides organizations with significant potential to uncover new opportunities and enhance performance (Chen, Nath, & Rocco, 2024).

This transition aligns with the broader movement toward data-driven decision (DDD) across corporate America. Information systems enable the integration of multiple business functions and improve coordination between technical and managerial components, which is essential in technologically intensive sectors, such as IT (Ali, 2019; Inga et al., 2023). AI for IT Operations (AIOps) integrates HEIs, big data analytics, and advanced AI techniques to enhance various IT operations, including monitoring, incident response, and performance optimization. By automating routine tasks, AIOps allow ICT departments to allocate more time to strategic projects, leading to reduced network downtime, improved system availability, and enhanced customer satisfaction (Funda & Francke, 2024). Despite these advantages, the U.S. The IT industry continues to experience project overruns, scope creep, and budget inefficiencies, illustrating that technology alone does not guarantee success (PMI, 2023). Therefore, the paradox lies not in the availability of AI technology but in how effectively it is embedded within organizations' human decision-making ecosystems (Narita, 2023).

Artificial Intelligence, at its core, is designed to learn, reason, and adapt-mimic cognitive functions traditionally associated with human Intelligence (Kolbjørnsrud et al., 2016). The characteristics of symbiosis include capitalization on the individual strengths of humans and machines to assist humans in satisfying individual goals; that is, automation should be human-centered (Inga et al., 2023). Digital technologies, such as predictive analytics, simulation tools, and automated dashboards, support decision making and enable project managers to forecast performance and manage risks proactively (Tumpa & Naeni, 2025).

While still in its infancy as far as implementation is concerned, PA is receiving increasing interest from businesses seeking to improve decision-making through the use of data (Chen et al., 2024). Some data analytical tools were designed to learn from patterns in the raw data flow through a neural network (Gumay & Syarif, 2025). Because hidden layers were used in the network, auditors could not visualize the decision-making process of the tools that triggered the flags of risky items (Funda & Francke, 2024; Yang et al., 2024). Analysis of team meetings, emails, or chat flows based on written or spoken words to improve communication and leadership behavior, for example, point out communication that runs in cycles, is not focused, shows mental blockades, or builds a team collective mind (Nuhn, Oswald, Flore, & Lang, 2022). Special attention must also be given to the application of AI as an action-supportive tool and assistant, where the major roles of AI in project management are to provide assistance and advice, improve decision-making, and improve performance and reporting across supply chain partners (Georgiev et al., 2024). The use of dashboards is a powerful tool for engaging stakeholders and maintaining communication channels, offering a comprehensive snapshot of performance indicators, sustainability metrics, charts, graphs, and other relevant information (Tumpa & Naeni, 2025).

Our findings indicate that the comprehensiveness of policies and diversity of linking agents are important measures of innovation management. Senior managers provide direction and secure resources, ensuring that ideas at the practical and individual levels can be uplifted to the firm level (Yang et al., 2024). Firms with high AI maturity—those with institutionalized data literacy and cross-functional analytics capabilities—are better positioned to exploit AI-driven insights (Deloitte, 2024). According to Deloitte's 2024 "AI in Enterprise Project Management, U.S. firms that achieved higher AI integration levels reported a 25% improvement in decision speed and a 30% reduction in budget variance compared to firms relying solely on traditional project management methods (Nenni et al., 2025; PwC, 2024).

However, this transformation was challenging. The adoption of AI tools in decision making raises questions about data quality, interpretability, and managerial trust (Razia, 2025). The black-box problem refers to the issue that auditors cannot explain, interpret, or document the decision-making process of some AI tools (Cahyana, Pratama, & Welly, 2025). The black-box problem first created a trust issue between the users and AI tools. For example, some data analytical tools have been designed to learn from patterns in raw data flow through a neural network. Because hidden layers were used in the network, auditors could not visualize the decision-making process of the tools that triggered the flags of risky items (Yang et al., 2024). This work has some limitations regarding its scope in terms of limitations (Widiasa, Widnyani, & Astawa, 2023). The articles analyzed were mainly carried out from recent empirical studies up to 2021 and will require a new review of upcoming years' research to provide the latest studies on business analytics. The limitations of DT are that it would need to know its target (predicted data) and inputs data prior to performing any PA (Lee, Cheang, & Moslehpour, 2022).

Human–machine symbiosis aims to establish a close and flexible relationship in which both entities work together to achieve a shared goal by combining human cognitive abilities with machine precision and consistency (Ernst et al., 2024; Inga et al., 2023). While considering the supply chain perspective, there are some concerns related to data availability, information sharing among partners, missing communication interface standards, and company readiness, which could further delay integration (Georgiev et al., 2024). The United States and China have emerged as the main leaders in artificial intelligence (AI) development, investing heavily in research and technology innovation through their major technology companies (Joshi, 2025). The AI market is projected to contribute more than $1.3 trillion to the national economy by 2030, with a significant share driven by enterprise applications in project management, analytics, and automation (PwC, 2024). The pressure to maintain competitive advantage compels the U.S. IT firms continuously integrate emerging AI capabilities into their project workflows (Ajiga et al., 2024) et al., 2024).

At the strategic level, AI adoption aligns with the country's broader push for digital transformation and workforce optimization (PMI, 2023). Machine learning models can be used to predict project risks, delays, or cost overruns, and to support project managers in resource allocation decisions (Nuhn et al., 2022). Predictive analytics have captured the attention of organizations owing to their proactive rather

than reactive approach. This ability provides organizations with significant potential to uncover new opportunities and enhance performance (Chen et al., 2024). Digital technology promotes efficient stakeholder engagement by offering integrated, collaborative, and centralized platforms that foster transparency and collaboration and mitigate the risk of greenwashing and modern slavery by streamlining communication and reducing siloed engagement (Tumpa & Naeni, 2025). AI will continue to provide valuable business insights, detect patterns, support supply chain-related business decisions, and manage output processes (Georgiev et al., 2024).

Although AI's potential of AI within DSSs has been extensively explored across various domains, there remains a notable scarcity of information regarding its application within the realm of HEIs on a global scale (Funda & Francke, 2024). The landscape of AI adoption within professional service industries is rapidly evolving, yet remains nascent in academic literature. This emergent nature necessitates the use of an exploratory approach. Therefore, the depth offered by the case study method allows for the exploration of the complexities and multifaceted nature of AI adoption (Yang et al., 2024). Consequently, there is a need for context-specific, data-backed insights that illuminate how AI tools tangibly influence decision quality, speed, and project outcomes in the U.S. technology sector (Ajiga et al., 2024). This study addresses this gap by examining three critical dimensions: tool utilization, decision impact, and performance outcomes (Cooper & Brem, 2024). Through a mixed-method approach—combining quantitative regression analysis with qualitative thematic insights—this study aims to generate a comprehensive understanding of how AI technologies reshape decision-making practices across the American IT landscape (Razia, 2025; Salimimoghadam et al., 2025).

Recent developments in artificial intelligence (AI) have triggered excitement about the potential to replace and complement human activities, while also raising concerns about possible risks to society (Ernst et al., 2024). The development of a true human–machine symbiosis requires not only technical integration, but also a paradigm shift in how humans conceptualize and interact with intelligent systems (Inga et al., 2023). The effective utilization of AI tools depends on managerial readiness, training, and willingness to adapt (Narita, 2023). AI is also a tool that can be used by HR managers to improve functional mobility and ultimately employees' job satisfaction, using AI to help better manage internal mobility schemes with a view to improving future job satisfaction (Ernst et al., 2024). AI technologies and tools are more accurate than traditional tools; however, despite the fact that they have some weaknesses and limitations, they still remain complementary to the traditional approaches. In this context, the focus of the following section is the evaluation of AI system limitations and risks (Georgiev et al., 2024). This interplay between human cognition and artificial reasoning constitutes the core tension in AI-driven decision making. Collaboration between technical experts, institutional leaders, and stakeholders is essential for successful AI implementation. This collaborative effort can empower South African HEIs to harness AI's power of AI for data-driven decisions and to enhance IT services (Funda & Francke, 2024). Consequently, the optimal model is a collaboration in which human and artificial intelligence complement each other's strengths.

The significance of this research lies in its potential to inform both academic discourse and managerial practices (PMI, 2023). Scholars have contributed to the evolving literature on AI in project management, particularly within the U.S. context, where technological maturity and industry dynamism create fertile ground for empirical analysis (Ajiga et al., 2024; Nenni et al., 2025). Practitioners offer actionable insights into how AI-driven decision-support systems can enhance efficiency, reduce uncertainty, and improve project outcomes (Razia, 2025). Advancements in computer science and computational power have enabled the application of artificial intelligence (AI) algorithms in various business sectors and complex scenarios across projects and pertinent supply chains. Apart from regular process automation or data analysis tasks, artificial systems have begun to undertake more complex activities and operations globally (Georgiev et al., 2024). Insights from this research can guide executives, project managers, and policymakers in designing frameworks that maximize AI's benefits of AI while mitigating associated risks.

2. Literature review

In recent years, artificial intelligence (AI) has become an indispensable component of the technological ecosystem that defines the operation of modern organizations. Among the most affected sectors is the information technology (IT) industry, particularly in the United States, where AI-driven systems have been integrated across nearly every domain of enterprise management (Adebayo, Udoh, Kamudyariwa, & Osobajo, 2025). The emergence of predictive analytics, natural language processing (NLP) assistants, and automated dashboards has redefined the parameters of project management and decision-making. AI systems now perform complex analytical functions that rely on human intuition and experience, providing project managers with insights that enhance precision, reduce uncertainty, and increase operational efficiency.

The U.S. The IT industry presents a fertile context for examining the impact of AI tools on project decision making. As one of the most technologically advanced economies, the United States is at the forefront of AI adoption. Major corporations, such as Google, Microsoft, Oracle, and Amazon, have incorporated AI into their project workflows, using data-driven systems to manage budgets, forecast risks, allocate resources, and monitor performance. This integration of intelligent systems into project management has not only improved organizational efficiency, but has also transformed the role of managers, shifting them from manual supervisors to strategic interpreters of data-driven insights (Mariani & Mancini, 2024).

The growing reliance on AI in project management stems from the increasing complexity of projects in the U.S.. IT firms. The convergence of software engineering, cybersecurity, cloud computing, and data analytics has generated vast amounts of real-time data, which requires tools that can process, interpret, and visualize this information for rapid decision-making. Traditional project management methods, while effective in structured environments, often fall short in addressing the dynamic nature of digital projects (Herath Pathirannehelage, Shrestha, & von Krogh, 2025). AI-driven tools have filled this gap by offering predictive capabilities, automation, and real-time monitoring, all of which contribute to better control over project scope, time, cost, and quality.

Despite these advancements, the widespread adoption of AI in decision making introduces both opportunities and challenges. Although AI enhances analytical accuracy and operational efficiency, it also raises concerns about overreliance on automation, data privacy, and the interpretability of machine outputs (Dennehy et al., 2023). Many organizations continue to grapple with balancing algorithmic decision-making with human judgment. In this context, understanding how AI-driven tools influence decision quality and project outcomes in the U.S. IT firms have become both a practical necessity and a scholarly endeavor.

2.1 Theoretical and Conceptual Framework

The foundation of this study lies at the intersection of decision-making theory, technological adoption, and organizational management. Decision-making theories emphasize the cognitive, rational, and behavioral processes involved when individuals or teams evaluate alternatives and select optimal courses of action. In traditional frameworks, decision-making is guided by human reasoning, experience, and available information (Helminski et al., 2022). However, the advent of AI has transformed these processes, introducing algorithmic reasoning, which can process information at scales far beyond human capacity.

From a theoretical standpoint, integrating AI tools into project decision-making aligns with established frameworks such as the Technology Acceptance Model (TAM) and Rational Choice Theory. The TAM framework explains how perceived usefulness and ease of use influence individuals' willingness to adopt new technology. In the context of project management, managers' acceptance of AI-driven tools is determined by their belief in the technology's ability to enhance decision-making efficiency and improve project outcomes (El Khatib & Al Falasi, 2021). Rational Choice Theory, on the other hand, assumes that decision makers act logically to maximize expected benefits. AI systems complement this logic by providing data-driven insights that minimize uncertainty and reduce cognitive biases that often distort human judgment.

In addition to these theories, the concept of augmented intelligence is particularly relevant for understanding AI's role of AI in decision-making. Rather than replacing human Intelligence, AI augments it by extending its analytical reach and enhancing interpretive capacity (Neri et al., 2025). This collaboration between humans and machines creates a hybrid decision-making environment, in which human intuition guides the contextual interpretation of AI-generated insights. Within U.S. IT firms, this symbiotic relationship is increasingly evident in project management systems that integrate machine-learning algorithms with human oversight.

The conceptual framework of this research identifies three key categories of AI tools that influence project decision making: predictive analytics, NLP-based assistants, and automated dashboards. Each function serves as a distinct function within the decision-making hierarchy. Predictive analytics focuses on forecasting and scenario planning by analyzing large datasets to predict project outcomes such as budget variances or resource bottlenecks. NLP assistants streamline communication, meeting management, and scheduling by automating routine tasks, allowing managers to focus on strategic decision-making (Al Naqbi, Bahroun, & Ahmed, 2024). Automated dashboards consolidate real-time project data into visual formats, facilitating transparency and informed communication between stakeholders. Collectively, these tools form the technological backbone of data-driven decision making in modern IT project environments.

Table 1. Categories of AI Tools and Their Project Management Functions

AI Tool Category	Primary Function in Project Management	Illustrative Applications
Predictive Analytics	Forecasting budget, timelines, risks	Cost variance prediction, schedule forecasting
NLP Assistants	Automating communication, meeting notes, scheduling	Chatbots for task updates, meeting summarization
AI Dashboards	Visualizing KPIs and stakeholder updates	Real-time dashboard of project progress and risk indicators

2.2 AI and Decision-making in the U.S. IT Firms

The U.S. The IT sector is one of the most dynamic environments for AI-driven project management. With increasing demand for agility and innovation, IT firms have turned to AI to improve decision accuracy, responsiveness, and collaboration across project teams. Decision-making in IT projects involves managing complexity—balancing competing constraints such as cost, time, and quality–while adapting to rapidly changing technologies and customer demands (**Dennehy** et al., 2023). AI tools enable the analysis of massive datasets, identification of hidden patterns, and recommendation of optimal decisions, thereby transforming the manner in which projects are planned, monitored, and executed.

In the U.S. context, the adoption of predictive analytics has become particularly prominent. These tools allow project managers to forecast potential risks, optimize resource allocation, and anticipate project outcomes with greater precision. By analyzing historical project data and real-time inputs, predictive models can generate probability-based insights that guide proactive decision-making (Aliu et al., 2023). For instance, in large-scale software development projects, predictive analytics can identify potential delivery delays or budget overruns, enabling corrective actions before the issues escalate. This proactive approach enhances project resilience and improves the likelihood of successful completion within the scope and schedule.

NLP-based assistants represent another transformative element of AI integration in decision-making (Gómez-García, Zamora, & Berrocal, 2023). These systems automate administrative functions such as task tracking, progress updates, and coordination meetings. More advanced NLP assistants can analyze textual data from project documentation and stakeholder communications, extracting key insights to support decision making. This automation not only reduces the cognitive load on project managers, but

also ensures that decisions are based on comprehensive, real-time information rather than fragmented human recollection.

Automated dashboards complement these technologies by visualizing project metrics through dynamic data visualization tools (Nyqvist, Peltokorpi, & Seppänen, 2024). Dashboards enable project managers to monitor key performance indicators such as budget utilization, progress milestones, and team performance. They also facilitate improved stakeholder communication by translating complex datasets into easily interpretable visuals. Within U.S. IT firms and dashboards have become essential in maintaining transparency, accountability, and alignment across geographically dispersed teams. Together, these AI-driven tools redefine the speed, accuracy, and inclusiveness of project decision making. They enable data democratization, ensuring that insights are accessible to all stakeholders, not only senior managers or analysts. This accessibility supports collaborative decision-making, where cross-functional teams contribute to strategy and problem solving based on shared, data-informed perspectives (Kiani, 2024).

2.3 Empirical Insights from Prior Studies

Over the past decade, empirical research has demonstrated that AI integration in project management significantly enhances organizational performance, although the impact varies according to firm size, technological maturity, and leadership culture. In U.S. IT firms have consistently shown improvements in decision speed, accuracy, and stakeholder satisfaction following the adoption of AI-based decision support systems. Firms that have institutionalized AI across project processes report fewer schedule deviations, better budget adherence, and improved communication between technical and business teams (Giachino, Cepel, Truant, & Bargoni, 2024).

One recurring finding in this body of research is that AI improves the quality of the information available for decision-making. Unlike traditional management information systems, which rely on historical data, AI-driven systems incorporate predictive and prescriptive analytics, providing forward-looking insights that guide strategic planning. These systems help managers identify emerging risks, allocate resources efficiently, and align project objectives with organizational goals (Gupta, Modgil, Bhattacharyya, & Bose, 2022). As a result, decision making becomes more evidence-based and less dependent on subjective intuition.

Table 2. Summary of key empirical findings in the U.S. IT Firms

Finding	Impact on Project Management	Reported in Literature
AI improves decision accuracy	Better risk detection and budgeting decisions	Nenni et al. (2025), Müller, Locatelli, Holzmann, Nilsson, and Sagay (2024)
AI dashboards improve stakeholder communication	Increased transparency and engagement	(Salimimoghadam et al., 2025)
NLP tools reduce admin burden on managers	Managers focus on strategic tasks	Almalki (2025), Mohammad and Chirchir (2024)

Another key insight is the role of AI in collaboration enhancement. In large U.S. IT firms and project teams are often distributed across multiple time zones and across functional domains. AI tools facilitate asynchronous collaboration by providing unified platforms for data-sharing and communication. NLP-driven chatbots and virtual assistants ensure that relevant information flows seamlessly across teams, reducing communication lags and enhancing coordination (Ludlow et al., 2021).

Despite these advantages, empirical evidence highlights several challenges. Some firms struggle with the interpretability of their AI-generated outputs. Managers may find it challenging to understand the reasoning behind algorithmic recommendations, leading to resistance or skepticism toward automated insights. Furthermore, integrating AI into existing project management systems often requires substantial investments in infrastructure, training, and change management. In particular, smaller IT

firms may lack the resources to implement AI tools effectively, resulting in uneven adoption rates across industries (Vasey et al., 2022).

Human factors also play a critical role in determining AI's impact of AI on decision making. Organizational culture, managerial openness to innovation, and availability of technical expertise influence the success of AI implementation. Studies have found that firms with strong digital leadership and a culture of data-driven decision-making are more likely to realize the full benefits of AI integration (Bouschery, Blazevic, & Piller, 2023). Conversely, organizations with rigid hierarchies or resistance to technological change may experience limited returns.

2.4 Research Gaps and Emerging Directions

Although the literature provides ample evidence of AI's positive effects on organizational performance, several gaps remain, particularly regarding its impact on decision-making within the U.S.. IT firms. To date, most studies have explored AI adoption at the enterprise level, focusing on operational efficiency or customer analytics rather than project management. Few studies have empirically examined how AI-driven tools directly influence project decision-making processes, such as budgeting, scheduling, risk management, and stakeholder engagement. This lack of focused research limits our understanding of the mechanisms through which AI contributes to project success (Müller et al., 2024).

Another gap pertains to the heterogeneity of AI adoption among the U.S. IT firms. Large corporations with robust resources and established digital infrastructure have achieved significant AI integration, while small- and mid-sized enterprises lag. This disparity raises questions about scalability and accessibility, specifically, whether the benefits of AI in decision-making are confined to elite organizations or can be extended across the broader IT sector. There is a pressing need for comparative studies that assess the differential impacts of AI adoption based on firm size, technological maturity, and industry specialization (Borges, Laurindo, Spínola, Gonçalves, & Mattos, 2021).

A further limitation of the existing literature is the insufficient attention paid to human–machine collaboration in decision-making. While many studies have celebrated AI's analytical power, few have investigated how human intuition interacts with algorithmic logic to produce superior outcomes. Understanding this dynamic is essential, as decision making in project environments often involves both quantitative and qualitative analyses (Taboada, Daneshpajouh, Toledo, & De Vass, 2023). The challenge lies in designing systems that harmonize these elements, rather than allowing one to dominate the other.

Additionally, there is limited empirical research on the long-term implications of AI adoption for organizational learning and innovation. Although AI can enhance immediate decision efficiency, its effect on knowledge retention, employee development, and creativity remains underexplored. Questions also persist about data ethics, privacy, and accountability in AI-assisted decision-making, especially given the regulatory frameworks governing data use in the United States (Khalil, Bravo, Vieira, & Carvalho, 2025). These research gaps collectively underscore the need for studies that move beyond descriptive analyses toward more nuanced causal investigations of AI's role of AI in project decision-making. Such research should not only quantify outcomes but also explore the contextual factors—cultural, organizational, and technological—that mediate AI's effectiveness (Mohammad & Chirchir, 2024).

2.5 Research Aim and Framework Summary

The present study aims to address these gaps by examining how AI-driven tools influence project decision-making in the U.S.. IT firms. It specifically focuses on the extent to which predictive analytics, NLP assistants, and automated dashboards improve decision accuracy, speed, and collaboration. By evaluating these dimensions, this study seeks to establish a comprehensive understanding of AI's strategic value of AI in project management (Adebayo et al., 2025).

The framework guiding this investigation integrated both technological and human factors. It conceptualizes decision making as a process influenced by three interacting domains: AI tool

functionality, organizational environment, and managerial cognition. AI tool functionality encompasses the technical capabilities of predictive analytics, natural language processing (NLP) systems, and dashboards. The organizational environment includes structural attributes such as firm size, AI maturity, and openness to innovation (Shamim, Hamid, Nyamasvisva, & Rafi, 2025). Managerial cognition refers to the ability of decision makers to interpret and effectively use AI outputs. The interplay between these domains determines the overall impact of AI on project outcomes.

The expected outcome of this framework is a model that explains how AI integration enhances project decision-making by improving data quality, reducing uncertainty, and fostering collaboration (Onwujekwe & Weistroffer, 2025). It posits that firms with higher levels of AI maturity and managerial competence achieve superior project outcomes. Conversely, organizations that adopt AI without adequate training, governance, or cultural readiness may experience suboptimal results, or even resistance to change.

In summary, this literature review underscores the transformative potential of AI in redefining project decision-making in the U.S.. IT firms. However, it also highlights the need for more granular, context-specific research that captures the complexities of human–machine collaboration and organizational adaptation. As AI technologies continue to evolve, their successful integration into project management will depend on the alignment of technical innovation, managerial capability, and strategic vision (Haefner, Wincent, Parida, & Gassmann, 2021). This research seeks to contribute to this understanding by offering a comprehensive analysis of how AI-driven tools shape decision making in one of the world's most advanced technological sectors.

3. Research Methodology

3.1 Research Design

This study adopts a mixed-methods approach to examine the impact of AI-driven tools, namely predictive analytics, natural language processing (NLP) assistants, and automated dashboards, on project decision-making within the U.S. IT firms. A mixed-methods design was selected to enable both quantitative validation of hypothesized relationships and qualitative exploration of contextual, behavioral, and managerial dimensions that are not easily captured through numerical data alone.

The study followed an explanatory sequential design: a quantitative phase using survey data to test hypotheses, followed by a qualitative phase involving interviews to elaborate on the statistical findings (Salimimoghadam et al., 2025). This structure allows for the triangulation of insights and deepens our understanding of the mechanisms through which AI tools influence decision-making outcomes.

3.2 Research Objectives

The methodology was framed around the following five core objectives:

- Identify the most widely used AI tools in U.S.-based IT project management.
- Assess the impact of AI on decision-making efficiency, accuracy, and transparency.
- Quantitatively evaluate the relationship between AI tool usage and project KPIs (e.g., budget adherence, time management, scope stability, stakeholder communication).
- Explore managerial perceptions regarding the benefits and challenges of AI integration.
- Develop a conceptual model that maps AI tool adoption to improve decision-making and project outcomes in the U.S. IT context.

3.3 Research Questions and Hypotheses

The following questions guide the research:
How do AI-driven tools influence project decision-making and outcomes in the U.S.? IT firms?
Thus, the following hypotheses (previously outlined in the proposal) are tested:

- H1: The use of predictive analytics positively influences project budget adherence.
- H2: NLP scheduling assistants enhance the effectiveness of timelines and resource planning.
- H3: AI-powered dashboards improve communication quality and stakeholder buy-ins.

- H4: The adoption of AI tools increases project managers' overall satisfaction with the decision-making processes.
- H5: The Integration of AI technologies reduces the scope creep in IT projects.

3.4 Sampling Strategy

3.4.1 Population and Scope

The target population comprises project managers, program directors, and senior IT professionals working in mid-to large U.S.-based IT firms, including firms specializing in cloud computing, enterprise software, artificial intelligence, data analytics, and IT consulting.

3.4.2 Sampling Technique

A purposive sampling strategy was employed to ensure that participants had relevant experience with AI tools in the project management context. Participants were selected from a pool of known U.S.-based IT firms (e.g., Microsoft, Oracle, Salesforce, ServiceNow, Cisco, and IBM) supplemented by qualified professionals sourced via LinkedIn, PMI USA chapters, and professional networks.

3.4.3 Sample Size

For the quantitative phase, the study targeted a minimum of 75 valid responses from IT project professionals, in line with the minimum requirements for regression-based statistical analysis (5–10 times the number of predictors). In the qualitative phase, 10–12 in-depth interviews were conducted until thematic saturation was reached.

3.5 Data Collection Methods

3.5.1 Quantitative Data (Survey)

A structured online questionnaire was administered via Google Forms and Qualtrics. The instrument consists of four sections.

- Demographic Information: role, years of experience, company size, and AI exposure.
- AI Tool Usage – frequency and type of AI tools used (predictive analytics, NLP assistants, dashboards).
- Project Decision-Making Metrics: Likert-scale questions measuring timeliness, accuracy, responsiveness, and satisfaction.
- Project Performance Outcomes – self-reported data on KPIs: budget adherence, timeline control, scope stability, and stakeholder engagement.

All questions use a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." The survey items were adapted from validated scales used in prior AI-PM studies and were pilot-tested with a group of five PM professionals to ensure clarity and reliability.

3.5.2 Qualitative Data (Semi-Structured Interviews)

Interviews will be conducted virtually (via Zoom or Teams) and will follow a semi-structured guide with open-ended questions such as:

- "Can you describe how AI tools have changed how your team makes project-related decisions?"
- "Which AI tools have you found most useful or least effective?"
- "Have AI dashboards improved communication with external stakeholders?"

Each interview lasted 30–45 minutes, was recorded with the participant's consent, and was transcribed verbatim for analysis.

3.6 Data Analysis Techniques

3.6.1 Quantitative Analysis

Descriptive statistics summarize the respondents' demographics and AI tool usage patterns. To test the hypotheses:

- Multiple linear regression will assess the relationships between AI tool usage and project outcomes (e.g., predictive analytics → budget adherence).

- ANOVA tests evaluate group differences (e.g., firms with and without AI dashboards).
- Reliability and validity tests: Cronbach's alpha (>0.70) will ensure internal consistency, and factor analysis will verify the construct validity.

Statistical analyses were performed using SPSS and the JASP software.

3.6.2 Qualitative Analysis

The interview data were analyzed using thematic coding in NVivo. The codes are both deductive (based on the conceptual framework) and inductive (emerging from responses). Familiar themes, such as "trust in AI," "interpretability issues," and "dashboard overload" dashboard overload, will be identified and linked to the survey findings. Patterns and contradictions were mapped to refine the conceptual model and validate the quantitative trends.

3.7 Ethical Considerations

This research adhered to the ethical standards of academic and professional practice. Participants will be provided with informed consent forms outlining their rights, the voluntary nature of participation, data confidentiality, and the right to withdraw at any time. All the survey data were anonymized, encrypted, and stored securely. The study was approved by (Institutional Review Board) approval prior to participant recruitment.

3.8 Limitations of the Methodology

While the mixed-methods design increases the depth and generalizability of the findings, limitations include potential response bias in self-reported data and challenges in verifying participants' actual AI tool usage. Moreover, the study is limited to U.S.-based IT firms, which may limit the generalizability of the findings. A focus on mid-to-large enterprises may also exclude the realities of AI adoption in startups or government agencies.

4. Results and Discussion

This section presents the findings of the empirical investigation into the impact of AI-driven tools on project decision-making outcomes in U.S.-based IT firms. The results were organized according to the five hypotheses tested, supplemented by descriptive statistics, inferential analysis, and qualitative insights from the interview participants.

4.1 Participant Profile

A total of 78 valid responses were collected from project professionals across the U.S.. IT firms. The sample included 42% project managers, 26% programme directors, 18% senior software leads, and 14% AI/PM consultants. Company sizes ranged from 100 to 500 employees (35%), 501 to 2,000 (41%), and over 2,000 employees (24%). The average tenure in project management roles was 7.3 years, and 67% of respondents reported regular use of AI-enabled project tools.

The follow-up qualitative phase involved 11 semi-structured interviews with respondents drawn from the survey pool. Thematic insights were extracted to support and contextualize the quantitative results.

Table 3. Impact of AI Tools on Key Project Management KPIs

AI Tool	Budget Adherence	Timeline Accuracy	Stakeholder Communication	Scope Management	PM Satisfaction
Predictive Analytics	High	High	Moderate	High	High
NLP Assistants	Moderate	High	High	Moderate	High
AI Dashboards	Moderate	Moderate	High	Moderate	High

4.2 Descriptive Statistics

Participants reported varied exposure to AI tools.

- 59% of respondents regularly used predictive analytics platforms (e.g., Azure ML and IBM Watson).
- NLP assistants (e.g., meeting bots and scheduling AI) were actively used by 44% of the participants.
- AI dashboards (e.g., Power BI with AI integration and Tableau GPT) had the highest adoption rate of 71%.

On a 5-point Likert scale, the perceived impact of AI tools on decision speed (M = 4.11, SD = 0.66), accuracy (M = 4.02, SD = 0.72), and satisfaction (M = 4.18, SD = 0.59) was generally high.

Reliability and Validity

The reliability of the survey scale was assessed using Cronbach's alpha.

- AI Tool Usage Scale: $\alpha = 0.82$
- Decision-Making Effectiveness: $\alpha = 0.88$
- Project Outcome KPIs: $\alpha = 0.86$

An exploratory factor analysis confirmed three distinct latent variables: AI use, decision-making quality, and project performance outcomes.

Hypothesis Testing (Regression Analysis)

H1: Predictive Analytics → Budget Adherence

Multiple regression analysis showed a significant positive relationship between predictive analytics use and budget adherence.

- $\beta = 0.39$, $t = 3.89$, $p < .001$, $R^2 = 0.28$

Interpretation: Respondents who used predictive analytics were more likely to report accurate cost estimates and proactive budget adjustments. Interviewees credited machine learning models for "catching over-budget trends weeks in advance."

✅ H1 supported.

H2: NLP Assistants → Timeline and Resource Planning

A positive correlation was observed between the use of NLP assistants and improved timeline predictability and resource utilization.

- $\beta = 0.31$, $t = 2.77$, $p = .007$, $R^2 = 0.22$

The participants noted that AI scheduling assistants reduced manual errors and delays in task allocation. One manager stated, "The assistant monitors workloads and automatically reallocates tasks during sick leaves or overloads."

✅ H2 supported.

H3: Dashboards → Stakeholder Communication

The strongest predictor in the model is AI dashboard use and its effect on stakeholder communication clarity.

- $\beta = 0.45$, $t = 4.93$, $p < .001$, $R^2 = 0.35$

Respondents highlighted improvements in stakeholder engagement, particularly due to visualized risk assessments and KPI dashboards. Interviewees said dashboards "simplify complexity" and reduce misunderstandings with clients and internal executives.

✅ H3 supported.

H4: Overall AI Usage → Project Manager Satisfaction

Overall satisfaction with decision making improved with the adoption of general AI tools.

- $\beta = 0.34$, $t = 3.12$, $p = .003$, $R^2 = 0.25$

Respondents who used at least two of the three AI tools reported significantly higher confidence and comfort in project decision making. Qualitative insights revealed that "AI frees up the cognitive space," enabling more strategic work.

✅ H4 supported.

H5: AI Usage → Scope Creep Reduction

The analysis showed a moderate but significant inverse relationship between AI tool integration and project-scope creep.

- $\beta = -0.29$, $t = -2.56$, $p = .012$, $R^2 = 0.19$

Projects managed using AI platforms experience fewer unplanned deliverable additions or requirement drifts. The interview data revealed that predictive modeling and real-time alerts enabled managers to proactively contain changes.

✅ H5 supported.

Table 4. Managerial Perceptions of AI Adoption in the U.S. IT Firms

Perception Area	% of Managers Agreeing	Summary Insight
Improved Decision Accuracy	84%	Most managers cited better forecasting and fewer surprises
Enhanced Communication	78%	AI dashboards were key in visualizing updates for teams
Reduced Cognitive Load	73%	NLP tools helped automate repetitive PM functions
Increased Trust in AI Outputs	61%	Managers trusted analytics when visual and explainable
Resistance to AI Integration	27%	Linked to lack of training and opaque algorithms

Moderation and Interaction Effects

Two-way ANOVA was used to test the moderating effect of firm size and AI maturity on the relationship between AI tool use and decision outcomes.

- Firms with high AI maturity scored significantly higher on all the decision outcome metrics ($F = 6.22$, $p = .002$).
- The interaction effect between AI training investment and project success is statistically significant ($F = 4.41$, $p = .016$).

In the interviews, managers from larger firms mentioned formal AI onboarding programs and dashboards integrated with CRM/ERP systems, leading to more consistent adoption.

Table 5. Summary of Hypothesis Testing Results

Hypothesis	Statement	Supported	Key Finding
H1	Predictive analytics improve budget adherence	Yes	Clear reduction in cost overruns observed across AI-mature firms
H2	NLP scheduling assistants improve timeline and resource planning	Yes	Notable increase in task timeliness and team clarity
H3	AI dashboards improve stakeholder communication and buy-in	Yes	Strong correlation with improved reporting and client updates
H4	AI adoption increases project manager satisfaction	Yes	Managers reported more control, less stress, and better responsiveness
H5	AI integration helps reduce project scope creep	Partially	AI tools helped indirectly via better

	monitoring—not direct control

Qualitative Insights

Thematic analysis of the interview transcripts generated four recurring themes.

- Proactive Decision-Making: Managers emphasize the transition from reactive to predictive decision-making.
- Reduced Cognitive Load: NLP assistants and automated dashboards are said to reduce decision fatigue.
- Trust and Transparency: Some participants were hesitant to rely entirely on AI recommendations due to the "black-box" nature of AI reasoning, highlighting the need for explainability.
- Enhanced Collaboration: Dashboards facilitate shared understanding among cross-functional teams and clients.

These themes complemented the quantitative findings by illuminating the psychological and operational effects of AI integration in real-world projects.

Table 6. Summary of Findings

Hypothesis	Variable Relationship	Result
H1	Predictive Analytics → Budget Adherence	Supported ✅
H2	NLP Assistants → Timeline/Resource Planning	Supported ✅
H3	Dashboards → Stakeholder Communication	Supported ✅
H4	AI Tools → Managerial Decision Satisfaction	Supported ✅
H5	AI Tools → Reduction in Scope Creep	Supported ✅

The collective findings support the study's central claim that AI tools significantly enhance the effectiveness of project decision-making and improve key performance metrics in the U.S.. IT firms.

4.2 Discussion

The findings of this study provide compelling evidence that AI-driven tools significantly influence project decision-making and outcomes in the U.S. IT firms. By testing five hypotheses across a sample of 78 professionals from mid-to large-sized organizations, this research deepens our understanding of how predictive analytics, NLP assistants, and AI dashboards interact with core elements of project governance: budget, timeline, stakeholder communication, satisfaction, and scope containment. This section interprets these findings in light of the existing literature, reflects on their implications, and outlines their contributions to theory and practice.

4.2.1 Reaffirming the Role of Predictive Analytics (H1)

The finding that predictive analytics tools positively influence project budget adherence confirms the evolving role of machine learning in financial forecasting and risk prediction. As revealed by the regression results, firms that employed AI-based cost-estimation platforms were significantly more successful in anticipating cost overruns and efficiently reallocating financial resources. This aligns with prior literature that argues predictive analytics enables real-time trend detection and scenario

4.2.2 Planning, giving managers the foresight to act preemptively

Notably, U.S. IT firms, characterized by fast-paced delivery cycles and lean project margins, benefit immensely from such capabilities. This result supports the idea that AI not only enhances decision *speed* but also improves *decision foresight*, especially in high-complexity financial environments. From a theoretical standpoint, this affirms the Rational Choice Theory's principle that access to accurate information increases utility-maximizing behavior. In practice, this suggests that AI tools are most effective when integrated at the early stages of project formulation rather than as reactive monitoring mechanisms.

4.2.3 Enhancing Timeline Accuracy via NLP Assistants (H2)
The positive correlation between NLP-based scheduling assistants and improved resource planning underscores a crucial, often under-researched, dimension of AI's utility: its ability to streamline communication logistics. In IT project environments, where agile methodologies demand frequent updates and rapid iterations, NLP systems help to maintain synchronization among distributed teams. Participants credited these tools by reducing coordination lags and task duplication, particularly in the remote and hybrid work settings. These findings extend the Technology Acceptance Model (TAM), suggesting that the *perceived usefulness* of AI tools is bolstered when they reduce the administrative burden and cognitive load, especially for time-sensitive deliverables. This result is consistent with earlier studies that highlighted the operational value of conversational AI; however, this study demonstrates measurable downstream effects on project timelines and team bandwidth. Importantly, U.S. firms that have embraced asynchronous collaboration platforms (e.g., Slack, GPT, and Notion AI) are particularly well-positioned to benefit from such automation.

4.2.4 AI Dashboards as Catalysts of Stakeholder Engagement (H3)
Among all the tested variables, the strongest predictor of project outcome success was the use of AI integrated dashboards for stakeholder communication. This supports the idea that visualization, not just analysis, is central to effective project governance. As the interview data show, dashboards helped simplify complex updates and align cross-functional expectations, especially during project reviews and investor updates.

This finding has several significant theoretical implications. It expands existing models of project transparency by introducing automated insight dissemination as a distinct managerial practice. It also speaks to the socio-technical nature of decision-making, in which visual tools enhance not just comprehension but *also trust* in project trajectories. In the U.S. In the IT sector, where external stakeholders (e.g., venture capitalists, clients, regulators) often demand clarity and precision in reporting, these systems appear to play a crucial bridging role between data analytics and executive communication.

4.2.5 Satisfaction and Trust in AI-Supported Decisions (H4)
Consistent with this hypothesis, participants using multiple AI tools reported significantly higher satisfaction with their project's decision-making processes. This confirms the theoretical expectation that decision *confidence* rises when uncertainty and information ambiguity are reduced and AI systems are uniquely equipped to provide functions, which is particularly relevant in managerial psychology. This finding echoes the literature linking tool adoption to perceived control and job satisfaction.

However, it also highlights a new dimension: AI serves not only as a functional assistant, but also as a cognitive stabilizer, reducing decision fatigue and choice overload in fast-moving project environments. Interview narratives suggest that AI augments rather than replaces human insight. Most participants acknowledged that while AI systems "surface the options," final judgments still rely on human logic and experience. This reinforces the paradigm of *augmented intelligence*, emphasizing symbiosis rather than substitution in human-machine collaboration.

4.2.6 Scope Creep Reduction and Structural Integrity (H5)
The fifth hypothesis, which predicted a reduction in scope creep associated with AI integration, was moderately supported. While not as strong as the other outcomes, the inverse correlation was statistically significant and qualitatively reinforced. Participants noted that dashboards and predictive models helped set clearer expectations for clients and allowed teams to flag unauthorized feature expansions early.

This finding introduces a critical lens into the traditional scope management literature. Historically, scope creep has been attributed to poor documentation or stakeholder misalignment. AI adds a new layer, automated deviation detection, which enables managers to visualize project drift and anchor discussions around measurable variance rather than subjective impressions. However, several

participants also cautioned that excessive reliance on AI alerts could lead to desensitization, especially if false positives become frequent. This points to the need for *explainable AI (XAI)* models in project governance to ensure that automated scope warnings are transparent, justified, and easily interpreted.

4.2.7 Moderating Influence of Organizational Context

Beyond the core hypotheses, the findings also showed that AI maturity, firm size, and training infrastructure significantly influence the magnitude of AI's benefits. Firms with formal onboarding programs, AI-literate leadership, and integrated systems have achieved greater performance gains across all five outcome variables (Nenni et al., 2025). This aligns with institutional theory and the resource-based view, which argues that technology adoption is path-dependent and is mediated by organizational readiness.

U.S. IT firms with larger digital infrastructures naturally possess absorptive capacity to deploy and scale AI tools effectively. Conversely, firms lacking such maturity may experience adoption fatigue or resistance, thus limiting realized benefits. These moderating effects have important implications for AI implementation. They underscore the need for cultural change management along with technological deployment. Training, clarity, and stakeholder buy-in must accompany AI rollouts to ensure alignment between decision tools and team workflows.

4.2.8 Integration with Prior Literature

These findings reinforce and expand prior research on AI's role of AI in project environments. Similar to previous studies, this study validates the operational benefits of AI for risk mitigation and communication. However, it advances the discourse by quantifying specific improvements in project outcomes and offering insights unique to the U.S.. IT sector (Almalki, 2025). Furthermore, this study enriches the conceptual debate on decision augmentation and automation. Rather than replacing managerial roles, AI appears to recalibrate decision workflows by filtering noise, flagging anomalies, and presenting action-relevant insights. This reinforces a shift toward *human-in-the-loop* systems as the preferred configuration for project-oriented AI deployment.

4.2.9 Practical Implications

Several practical implications of this study have emerged.

- Strategic Investment in Dashboards: Firms should prioritize dashboard development not just for internal metrics, but for real-time, stakeholder-facing communication.
- AI Training as a Catalyst: Integrating AI literacy into project manager training programs can accelerate adoption and deepen its impact.
- Start with Predictive Tools: For firms beginning their AI journey, predictive analytics offer tangible and early ROI in cost forecasting and budgeting.
- Balance Automation with Human Judgment: Managers must maintain interpretive authority over AI outputs to avoid overreliance and build trust.

4.2.10 Limitations and Future Research

Although the results are robust, this study had several limitations. The reliance on self-reported measures introduces the possibility of a response bias. The cross-sectional design limits causal claims, although the explanatory sequential structure and thematic validation strengthens interpretability. Finally, while the U.S. The IT context is relevant and dynamic, and the findings may not generalize to non-tech industries or international firms with different digital maturity levels.

Future research could apply longitudinal methods, compare AI adoption in SMEs and enterprise firms, or explore cross-cultural differences in AI-supported decision making. Additionally, the roles of explainability and algorithmic trust deserve more empirical attention.

5. Conclusion

This study examined the influence of AI-driven tools on project decision-making in U.S.-based IT firms. Drawing on a mixed-methods approach, this study investigated how predictive analytics, natural language processing (NLP) assistants, and AI-powered dashboards contribute to critical project

performance indicators, including budget adherence, timeline predictability, scope control, stakeholder engagement, and managerial satisfaction. These findings strongly support the proposition that AI technologies, when thoughtfully integrated into project management workflows, significantly enhance decision-making effectiveness. Predictive analytics emerged as a robust enabler of financial forecasting and risk mitigation, whereas NLP assistants proved valuable in optimizing scheduling and coordination. Most notably, AI dashboards were shown to improve the clarity, transparency, and efficiency of stakeholder communication — a cornerstone of project success in dynamic and client-facing environments.

The results also emphasize that the benefits of AI adoption extend beyond technology and include cognitive and organizational benefits. Managers reported greater decision confidence, reduced mental fatigue, and improved clarity when navigating project complexities. However, this research highlights the importance of organizational readiness, digital maturity, and training as moderators of AI success. Firms with structured onboarding and AI-literate cultures have achieved higher returns from AI investments, validating the broader role of people, processes, and policies in shaping technological outcomes. This study contributes to the growing body of knowledge that positions AI as a critical augmentation and not as a replacement for human judgment. In the context of U.S. IT firms, where rapid innovation, competitive pressures, and delivery speed are paramount, integrating AI into project governance offers a promising path toward more resilient, responsive, and data-driven decision-making ecosystems.

5.1 Future Research Directions
Although this research provides a valuable foundation, several areas remain open for further investigation.

5.2 Longitudinal Impact Assessment
This study captured a cross-sectional snapshot of AI usage in project environments. Future research could adopt a longitudinal design to explore how AI tool adoption and impact evolve, particularly across multiple project life cycles. This would enable a better understanding of learning curves, maturity effects, and the sustainability of AI's benefits of AI.

5.3 Comparative Industry Analysis
This study focuses exclusively on the U.S. IT sector. Future studies might examine AI’s role of AI in project management within other high-stakes industries, such as healthcare, construction, defense, or financial services. Comparative analyses revealed sector-specific challenges, usage patterns, and barriers to adoption.

5.4 Small and Medium Enterprise (SME) Context
Most AI adoption research, including this one, centers on large or digitally mature enterprises. There is a clear need to explore how AI tools are used (or underused) by small- and medium-sized IT firms. Factors such as resource constraints, scalability, and outsourcing dependencies can significantly alter AI's impact of AI in such settings.

5.5 Explainability and Trust in AI
Although decision support from AI tools improves project outcomes, several interviewees in this study voiced concerns over the “black-box” nature of AI models. Future research should explore how explainability, transparency, and human–machine trust dynamics influence the adoption and utility of AI in managerial decisions.

5.6 Ethical and Governance Dimensions
The use of AI in decision making raises ethical concerns, including bias, accountability, and data privacy. These dimensions were beyond the scope of this study, but warrant focused exploration, especially in regulated environments or projects with public visibility.

5.7 Hybrid Decision-Making Models

Further theoretical development is needed to conceptualize hybrid decision-making environments in which human judgment and AI recommendations are blended. Studies might investigate the optimal balance between automation and managerial intuition or how team dynamics evolve when AI is embedded in decision workflows. In summary, while AI is transforming how projects are executed and managed, the journey is far from complete. As technologies become more intelligent and organizations become increasingly data-driven, the project management profession stands at a critical inflection point. Future research will play a crucial role in shaping how AI is integrated — not just functionally but ethically, psychologically, and strategically — into the future of work.

References

Adebayo, Y., Udoh, P., Kamudyariwa, X. B., & Osobajo, O. A. (2025). Artificial intelligence in construction project management: A structured literature review of its evolution in application and future trends. *Digital, 5*(3), 26. doi:https://doi.org/10.3390/digital5030026

Ajiga, D., Okeleke, P. A., Folorunsho, S. O., & Ezeigweneme, C. (2024). Enhancing software development practices with AI insights in high-tech companies. *IEEE Software Engineering Institute, Technical Report TR-2024-003*. doi:https://doi.org/10.51594/csitrj.v5i8.1450

Al Naqbi, H., Bahroun, Z., & Ahmed, V. (2024). Enhancing work productivity through generative artificial intelligence: A comprehensive literature review. *Sustainability, 16*(3), 1166. doi:https://doi.org/10.3390/su16031166

Ali, M. M. (2019). Impact of management information systems (MIS) on decision making. *Global Disclosure of Economics and Business, 8*(2), 83-90. doi:https://doi.org/10.18034/gdeb.v8i2.100

Aliu, J., Oke, A. E., Kineber, A. F., Ebekozien, A., Aigbavboa, C. O., Alaboud, N. S., & Daoud, A. O. (2023). Towards a new paradigm of project management: a bibliometric review. *Sustainability, 15*(13), 9967. doi:https://doi.org/10.3390/su15139967

Almalki, S. S. (2025). AI-Driven Decision Support Systems in Agile Software Project Management: Enhancing Risk Mitigation and Resource Allocation. *Systems, 13*(3), 208. doi:https://doi.org/10.3390/systems13030208

Borges, A. F., Laurindo, F. J., Spínola, M. M., Gonçalves, R. F., & Mattos, C. A. (2021). The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions. *International journal of information management, 57*, 102225. doi:https://doi.org/10.1016/j.ijinfomgt.2020.102225

Bouschery, S. G., Blazevic, V., & Piller, F. T. (2023). Augmenting human innovation teams with artificial intelligence: Exploring transformer-based language models. *Journal of product innovation management, 40*(2), 139-153. doi:https://doi.org/10.1111/jpim.12656

Cahyana, L., Pratama, A. P., & Welly, J. (2025). Proposed improvements on performance management system at PT JIEP by using balanced scorecard. *Journal of Digital Business and Marketing, 1*(1), 15-31. doi:https://doi.org/10.35912/jdbm.v1i1.3315

Chen, L., Nath, R., & Rocco, N. (2024). Key Issues of Predictive Analytics Implementation: A Sociotechnical Perspective. *Journal of International Technology and Information Management, 32*(1), 239-270. doi:https://doi.org/10.58729/1941-6679.1565

Cooper, R. G., & Brem, A. M. (2024). The adoption of AI in new product development: Results of a multi-firm study in the US and Europe. *Research-Technology Management, 67*(3), 44-53. doi:https://doi.org/10.1080/08956308.2024.2324241

Dennehy, D., Griva, A., Pouloudi, N., Dwivedi, Y. K., Mäntymäki, M., & Pappas, I. O. (2023). Artificial intelligence (AI) and information systems: perspectives to responsible AI. *Information Systems Frontiers, 25*(1), 1-7. doi:https://doi.org/10.1007/s10796-022-10365-3

El Khatib, M., & Al Falasi, A. (2021). Effects of artificial intelligence on decision making in project management. *American journal of industrial and business management, 11*(3), 251-260. doi:https://doi.org/10.4236/ajibm.2021.113016

Endriyono, E., Gunarto, T., & Murwiati, A. (2025). Measuring the achievements of smart economics in the smart village program in Lampung Province 2020-2024. *Journal of Multidisciplinary Academic and Practice Studies, 3*(3), 133-150. doi:https://doi.org/10.35912/jomaps.v3i3.3524

Ernst, E., Berg, J., & Moore, P. V. (2024). Artificial intelligence and the future of work: humans in control (Vol. 7, pp. 1378893): Frontiers Media SA.

Funda, V., & Francke, E. (2024). Artificial intelligence-powered decision support system for operational decision-making in the ICT department of a selected African university. *African Journal of Science, Technology, Innovation and Development, 16*(5), 689-701. doi:https://doi.org/10.1080/20421338.2024.2376916

Georgiev, S., Polychronakis, Y., Sapountzis, S., & Polychronakis, N. (2024). *The role of artificial intelligence in project management: a supply chain perspective.* Paper presented at the Supply Chain Forum: An International Journal.

Giachino, C., Cepel, M., Truant, E., & Bargoni, A. (2024). Artificial intelligence-driven decision making and firm performance: a quantitative approach. *Management Decision*. doi:https://doi.org/10.1108/MD-10-2023-1966

Gómez-García, S., Zamora, R., & Berrocal, S. (2023). New frontiers for political communication in times of spectacularization. *Media and Communication, 11*(2), 109-112. doi:https://doi.org/10.17645/mac.v11i2.7069

Gumay, N. F., & Syarif, A. (2025). Financial Management and Marketing Technology as Drivers of MSME Performance. *Studi Ekonomi dan Kebijakan Publik, 4*(1), 57-70. doi:https://doi.org/10.35912/sekp.v4i1.5515

Gupta, S., Modgil, S., Bhattacharyya, S., & Bose, I. (2022). Artificial intelligence for decision support systems in the field of operations research: review and future scope of research. *Annals of Operations Research, 308*(1), 215-274. doi:https://doi.org/10.1007/s10479-020-03856-6

Haefner, N., Wincent, J., Parida, V., & Gassmann, O. (2021). Artificial intelligence and innovation management: A review, framework, and research agenda☆. *Technological Forecasting and Social Change, 162*, 120392. doi:https://doi.org/10.1016/j.techfore.2020.120392

Helminski, D., Kurlander, J. E., Renji, A. D., Sussman, J. B., Pfeiffer, P. N., Conte, M. L., . . . Ranusch, A. (2022). Dashboards in health care settings: protocol for a scoping review. *JMIR research protocols, 11*(3), e34894. doi:https://doi.org/10.2196/34894

Herath Pathirannehelage, S., Shrestha, Y. R., & von Krogh, G. (2025). Design principles for artificial intelligence-augmented decision making: An action design research study. *European Journal of Information Systems, 34*(2), 207-229. doi:https://doi.org/10.1080/0960085X.2024.2330402

Inga, J., Ruess, M., Robens, J. H., Nelius, T., Rothfuß, S., Kille, S., . . . Neumann, G. (2023). Human-machine symbiosis: A multivariate perspective for physically coupled human-machine systems. *International Journal of Human-Computer Studies, 170*, 102926. doi:https://doi.org/10.1016/j.ijhcs.2022.102926

Joshi, S. (2025). Artificial Intelligence and the Future of US Competitiveness: Sectoral Impacts, Workforce Transitions, and Policy Challenges. *International Journal of Research in Commerce and Management Studies, 7*(04), 76-110. doi:https://doi.org/10.2139/ssrn.5329991

Khalil, M., Bravo, A., Vieira, D., & Carvalho, M. M. d. (2025). Mapping the AI Landscape in Project Management Context: A Systematic Literature Review. *Systems, 13*(10), 913. doi:https://doi.org/10.3390/systems13100913

Kiani, A. (2024). Artificial intelligence in entrepreneurial project management: a review, framework and research agenda. *International Journal of Managing Projects in Business*. doi:https://doi.org/10.1108/IJMPB-03-2024-0068

Lee, C. S., Cheang, P. Y. S., & Moslehpour, M. (2022). Predictive analytics in business analytics: decision tree. *Advances in Decision Sciences, 26*(1), 1-29. doi:https://doi.org/10.47654/v26y2022i1p1-30

Ludlow, K., Westbrook, J., Jorgensen, M., Lind, K. E., Baysari, M. T., Gray, L. C., . . . Georgiou, A. (2021). Co-designing a dashboard of predictive analytics and decision support to drive care quality and client outcomes in aged care: a mixed-method study protocol. *BMJ open, 11*(8), e048657. doi:https://doi.org/10.1136/bmjopen-2021-048657

Mariani, C., & Mancini, M. (2024). *AI's Role in Project Management: An Overview of the Literature and a Research Agenda.* Paper presented at the International Workshop "A Multidisciplinary Approach to Embrace Complexity and Sustainability in Megaprojects.

Mohammad, A., & Chirchir, B. (2024). Challenges of integrating artificial intelligence in software project planning: a systematic literature review. *Digital, 4*(3), 555-571. doi:https://doi.org/10.3390/digital4030028

Müller, R., Locatelli, G., Holzmann, V., Nilsson, M., & Sagay, T. (2024). Artificial intelligence and project management: Empirical overview, state of the art, and guidelines for future research. *Project Management Journal, 55*(1), 9-15. doi:https://doi.org/10.1177/87569728231225198

Narita, Y. (2023). Artificial Intelligence will transform decision-making. World Economic Forum.

Nenni, M. E., De Felice, F., De Luca, C., & Forcina, A. (2025). How artificial intelligence will transform project management in the age of digitization: a systematic literature review. *Management Review Quarterly, 75*(2), 1669-1716. doi:https://doi.org/10.1007/s11301-024-00418-z

Neri, G., Marshall, S., Chan, H. K.-H., Yaghi, A., Tabor, D., Sinha, R., & Mazumdar, S. (2025). Data Visualisation in AI-assisted Decision-making: A Systematic Review. *Frontiers in Communication, 10*, 1605655. doi:https://doi.org/10.3389/fcomm.2025.1605655

Nuhn, H., Oswald, A., Flore, A., & Lang, R. (2022). *AI-Supported Natural Language Processing in Project Management: Capabilities and Research Agenda.* Paper presented at the IPMA Research Conference Proceedings.

Nyqvist, R., Peltokorpi, A., & Seppänen, O. (2024). Can ChatGPT exceed humans in construction project risk management? *Engineering, Construction and Architectural Management, 31*(13), 223-243. doi:https://doi.org/10.1108/ECAM-08-2023-0819

Onwujekwe, G., & Weistroffer, H. R. (2025). Intelligent decision support systems: An analysis of the literature and a framework for development. *Information Systems Frontiers*, 1-32. doi:https://doi.org/10.1007/s10796-024-10571-1

PMI. (2023). Shaping the Future of Project Management With AI: Charting Your AI Upskilling Journey with AI. Project Management Institute.

PwC. (2024). Weaving AI into capital projects: Tech-powered, underpinned by AI and advanced analytics.

Razia, B. (2025). Artificial Intelligence and Its Impact on Decision-Making in Managing Projects: A Systematic Literature Review. *Green Finance and Energy Transition: Innovation, Legal Frameworks and Regulation*, 115-122. doi:https://doi.org/10.1007/978-3-031-75960-4_12

Salimimoghadam, S., Ghanbaripour, A. N., Tumpa, R. J., Kamel Rahimi, A., Golmoradi, M., Rashidian, S., & Skitmore, M. (2025). The Rise of Artificial Intelligence in Project Management: A Systematic Literature Review of Current Opportunities, Enablers, and Barriers. *Buildings, 15*(7), 1130. doi:https://doi.org/10.3390/buildings15071130

Shamim, M. M. I., Hamid, A. B. b. A., Nyamasvisva, T. E., & Rafi, N. S. B. (2025). Advancement of Artificial Intelligence in Cost Estimation for Project Management Success: A Systematic Review of Machine Learning, Deep Learning, Regression, and Hybrid Models. *Modelling, 6*(2), 35.

Taboada, I., Daneshpajouh, A., Toledo, N., & De Vass, T. (2023). Artificial intelligence enabled project management: a systematic literature review. *Applied Sciences, 13*(8), 5014. doi:https://doi.org/10.3390/app13085014

Tumpa, R. J., & Naeni, L. (2025). Improving decision-making and stakeholder engagement at project governance using digital technology for sustainable infrastructure projects. *Smart and Sustainable Built Environment, 14*(4), 1292-1329. doi:https://doi.org/10.1108/SASBE-10-2024-0451

Vasey, B., Nagendran, M., Campbell, B., Clifton, D. A., Collins, G. S., Denaxas, S., . . . Ibrahim, M. (2022). Reporting guideline for the early stage clinical evaluation of decision support systems driven by artificial intelligence: DECIDE-AI. *bmj, 377*. doi:https://doi.org/10.1136/bmj-2022-070904

Widiasa, K., Widnyani, I. A. P. S., & Astawa, I. W. (2023). Evaluasi Kebijakan Bantuan Keuangan Khusus tentang Bali Smart Island di Desa Pakraman di Kecamatan Buleleng. *Jurnal Studi Pemerintahan dan Akuntabilitas, 3*(1), 1-8. doi:https://doi.org/10.35912/jastaka.v3i1.1983

Yang, J., Blount, Y., & Amrollahi, A. (2024). Artificial intelligence adoption in a professional service industry: A multiple case study. *Technological Forecasting and Social Change, 201*, 123251. doi:https://doi.org/10.1016/j.techfore.2024.123251