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ADOPTION OF ARTIFICIAL INTELLIGENCE (AI) AND WORK PERFORMANCE: A BIBLIOGRAPHIC ANALYSIS OF THE TECHNOLOGY ACCEPTANCE MODEL (TAM) & TECHNOLOGY ORGANIZATION ENVIRONMENT (TOE) FRAMEWORK

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Abstract: *The rapid integration of Artificial Intelligence (AI) is fundamentally shifting modern workplace paradigms, necessitating a clear understanding of its impact on employee performance. This study conducts a comprehensive bibliographic analysis of the existing literature concerning AI adoption and work performance, utilizing the Technology Acceptance Model (TAM) and the Technology-Organization-Environment (TOE) framework. A bibliometric analysis was performed using VOSviewer on 210 English-language journal articles and reviews published between 2020 and 2026, retrieved from the Web of Science (WoS) database. The findings reveal a continuous upward trend in publication output and robust global collaboration among nations such as the United States, England, China, and India. Keyword co-occurrence analysis identifies core themes including artificial intelligence, automation, technology, acceptance, trust, and performance. The integration of TAM and TOE offers complementary insights, demonstrating that successful AI implementation depends heavily on both individual user perceptions (TAM) and institutional readiness (TOE). Ultimately, this study maps the intellectual structure of the domain, highlights the critical mediating role of trust, and proposes a strategic agenda for future empirical research.*

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Keywords: *Artificial Intelligence, Work Performance, Bibliometric Analysis, Technology Acceptance Model, TOE Framework, Trust, Automation*

Introduction

The rapid integration of Artificial Intelligence (AI) into organizational workflows represents a profound paradigm shift in the modern workplace. Beyond merely automating routine tasks, AI systems are increasingly utilized to augment complex decision-making, optimize resource allocation, and enhance overall operational efficiency (Na et al., 2022). As organizations navigate this digital transformation, understanding how AI adoption influences the daily performance and productivity of employees has become a critical area of focus. To unpack this dynamic, contemporary research frequently leverages established theoretical models, notably the Technology Acceptance Model (TAM) to evaluate individual user behaviors and the Technology-Organization-Environment (TOE) framework to assess institutional readiness (Assaf et al., 2024; Na et al., 2022).

Despite the exponential growth of literature exploring AI's impact on work performance through these psychological and organizational frameworks, the research landscape remains highly fragmented across multiple disciplines, including human resource management, information systems, and organizational behavior. There is currently a pressing need to systematically map the intellectual structure, thematic evolution, and influential contributions within this rapidly expanding domain. Employee performance has been a subject of interest in many studies, as understanding how to predict an employee's efficiency or effectiveness in work contexts is a critical matter for every organization. The performance of the workforce relies on a variety of organizational factors (Janib et al., 2021).

Therefore, the primary objective of this study is to conduct a comprehensive bibliographic analysis of the existing literature on AI adoption and work performance. By systematically analyzing publication trends, citation networks, and keyword co-occurrences within Web of Science (WoS) indexed journals, this study aims to:

i. Map the historical evolution and current research trends surrounding AI and employee performance.
ii. Identify the core intellectual themes and dominant theoretical frameworks (such as TAM and TOE) driving the discourse.
iii. Highlight existing literature gaps and propose a strategic agenda for future empirical research.

To the best of the author's knowledge, no bibliometric analysis of research articles on AI on the work performance that integrating TAM and TOE has been published. In this article, we will focus on the recent advancements in AI and work performance that integrate TAM and TOE framework. To do so, we start by establishing the theoretical background in section Literature Review, followed by section Methodology in which we define the bibliometric approach to analyze the first step, then we select a set of bibliometric tools and techniques to address questions regarding the overall trends in the artificial intelligence and work performance, followed by the analysis results and the key findings and suggestions. By doing so, we hope to contribute to the ongoing efforts to expand the role of AI in work performance and to identify areas for future research.

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Literature Review

Artificial Intelligence and Work Performance

AI refers to the technology that will enable machines to perform tasks previously performed by human minds, like understanding natural languages, recognising patterns, solving problems, making decisions, and the continuous experience-driven learning process. AI comprises such features as self-awareness, autonomous decision-making, virtual assistance, and wide automation (Lauterbach, 2019). The advent of big data analytics and new technology is altering traditional job roles in the field of accounting. Leitner-Hanetseder et al. (2020) have found that accountants are supposed to perform technologically complex tasks, build advanced digital skills, and effectively cooperate in human-machine relationships. AI enables companies to process petabytes of data in a few seconds with faster and more precise insights to enhance decision-making by several folds. This is a critical change in accounting where precision is indispensable, and data balances are immense.

Work performance has historically been defined by quantitative output and the efficiency of task execution. However, as organizations transition into highly digitized environments, the conceptualization of work performance has broadened. Contemporary models suggest that employee performance is not merely about individual output, but also encompasses organizational adaptability, cross-departmental collaboration, and the ability to rapidly mobilize resources toward strategic objectives (Florea & Croitoru, 2025). In this context, effective communication dynamics and accurate decision-making have become fundamental indicators of high work performance. Kaplan and Haenlein (2019) reported in their research that AI will have implications on any kind of organisations, both internally and externally. From the internal perspective, AI will allow an array of tasks to be completed faster, better and at a lower cost. More complex tasks can thus enjoy the benefit of AI too, including industries related to consulting, financial services and law. From the external perspective, the AIA will influence the relationship between firms and their customers, firms and other firms, and firms with the society at large. Kokina and Davenport (2017) commented that senior accountants in large firms had commonly argued that organisations still require human accountants, whether with or without AI technology. According to recent empirical research leveraging the Technology Acceptance Model (TAM) and the Technology-Organization-Environment (TOE) framework, AI's positive impact on performance is directly tied to employees' perceived usefulness of the technology and the institutional infrastructure supporting its implementation (Assaf et al., 2024).

Methodology

In this paper, a bibliometric analysis is performed, which is a scientific software-assisted statistical method that employs quantitative tools for the analysis and interpretation of bibliometric and bibliographic information. The bibliometric approach differs from systematic literature reviews in the use of quantitative methods to analyze and summarize the characteristics of a body of literatures (Boukhalif, Hanine & Kharmoun, 2023) and (Akrami et al., 2023]. In particular, we adapted the (Donthu et al., 2021; Aoujil et al., 2023) process for bibliometric analysis as follows:

Phase 1: Planning the bibliometric analysis process.
Phase 2: Conducting the bibliometric analysis process.
Phase 3: Reporting results and Discussing insights.

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This study aims to examine research growth trends, collaboration ties, and influences within the global scientific community and then provide researchers with a comprehensive overview of current and future research on the adoption of artificial intelligence and its impact on work performance specifically through the lenses of the TAM and TOE frameworks through the following questions:

i. How has the research conducted on ‘‘Artificial intelligence and work performance’’ evolved over time?
ii. Which countries collaborate on the research spectrum of AI adoption, work performance, TAM, and TOE?
iii. What are the Knowledge foundations of ‘‘AI adoption and work performance" using the TAM and TOE frameworks’’?
iv. Within the literature, what are the current and emerging trends related to ‘‘adoption of Artificial intelligence and its impact on work performance’’?
v. What are the potential future directions for the research field surrounding AI adoption, work performance, TAM, and TOE?

The scope of the review is significantly large, as both AI and work performance are multidisciplinary sciences intersecting at the edge of thriving fields like computer science, mathematics, psychology, or economics.

Data Collection

The Web of Science (WoS) database was used as the retrieval database. WoS is one of the most widely used scientific citation index databases (Wang, Fang & Sun, 2016), we chose WoS considering it has strong coverage and offers high-quality data due to its stringent journal and article selection processes in comparison to other popular index databases such as Scopus, which covers more journals but has a lower impact and is limited to recent articles (Chadegani et al., 2013). It also provides a user-friendly interface and advanced search features, enabling researchers to find and retrieve relevant article samples.

Analysis Techniques and Tools

After evaluating several options to meet our needs in investigating bibliometric data, we selected VOSviewer software.that commonly used in similar studies. VOSviewer is a software tool (Van & Waltman, 2010) that enables users to analyze bibliometric data and generate customizable and interactive visualizations that help researchers gain insights into patterns and trends in scientific research. The software is designed to visualize bibliometric networks, which consist of nodes representing publications or other research items, and edges representing relationships between those items. The primary uses of VOSviewer are to generate maps of research fields, identify clusters of related research, and visualize co-authorship networks. It can also be used to perform citation analysis, analyze the impact of individual publications, and identify key and emerging research topics. The software is freely available to researchers, including a user-friendly interface, provide a transparent and reproducible analysis of publications, and allow users to customize their visualizations by adjusting the layout and data configuration, enabling researchers to easily upload their data, analyze, visualize, and share their findings. To implement the bibliometric protocol, we use the following techniques:

i. Co-authorship analysis: VOSviewer is used for co-authorship analysis to gain insights into the collaboration patterns between authors, affiliations, and countries.
ii. Bibliographic coupling analysis: VOSviewer is used to conduct bibliographic coupling analysis by analyzing the bibliographic coupling patterns of authors, affiliations, and countries.

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iii. Co-occurrence analysis: VOSviewer is used to conduct co-occurrence analysis by analyzing the co-occurrence patterns of keywords and generating co-occurrence networks and clusters.

Results and Discussions

The literature search was conducted in WoS database, an important and trustworthy reference in academic databases, where 212 articles were found through the initial search. To enhance these findings, the automation features included in every database were applied to filter the studies based on pre-established inclusion criteria.

Several refinements to the search query were made in order to gather the most pertinent articles and reviews for our research. We restricted the findings to journal papers and reviews published in English, yielding 210 documents, and then we restricted the time span of the publications to 2020–2026. This was based on the fact that, prior to 2020, there were just a handful of studies on AI and the work performance.

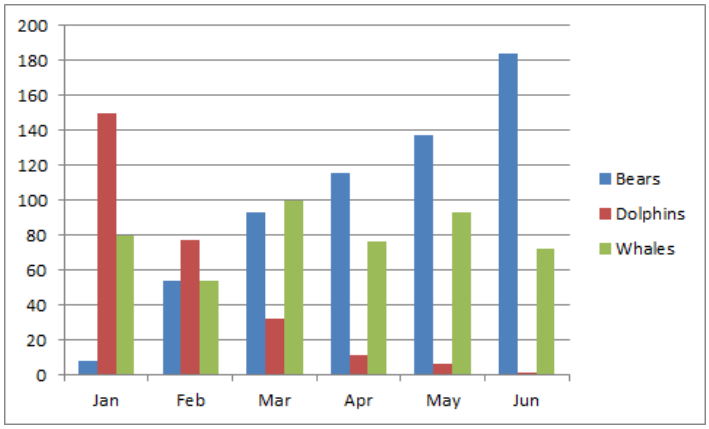


Figure 1: Total Publications using TOE

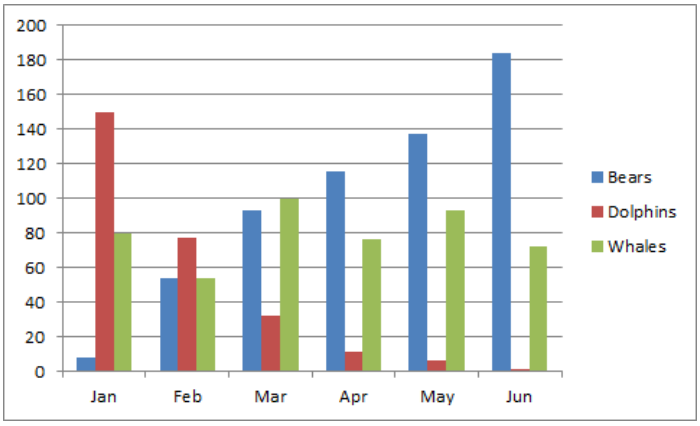


Figure 2: Total Publication using TAM

Figures 1 & 2 above show that the bibliometric analysis utilizing VOSviewer reveals a significant and continuous evolution in research concerning AI adoption and work performance within the Technology Acceptance Model (TAM) and Technology Organization Environment (TOE) frameworks. Publication output for both frameworks has grown steadily over time, culminating in its highest volume in 2026.

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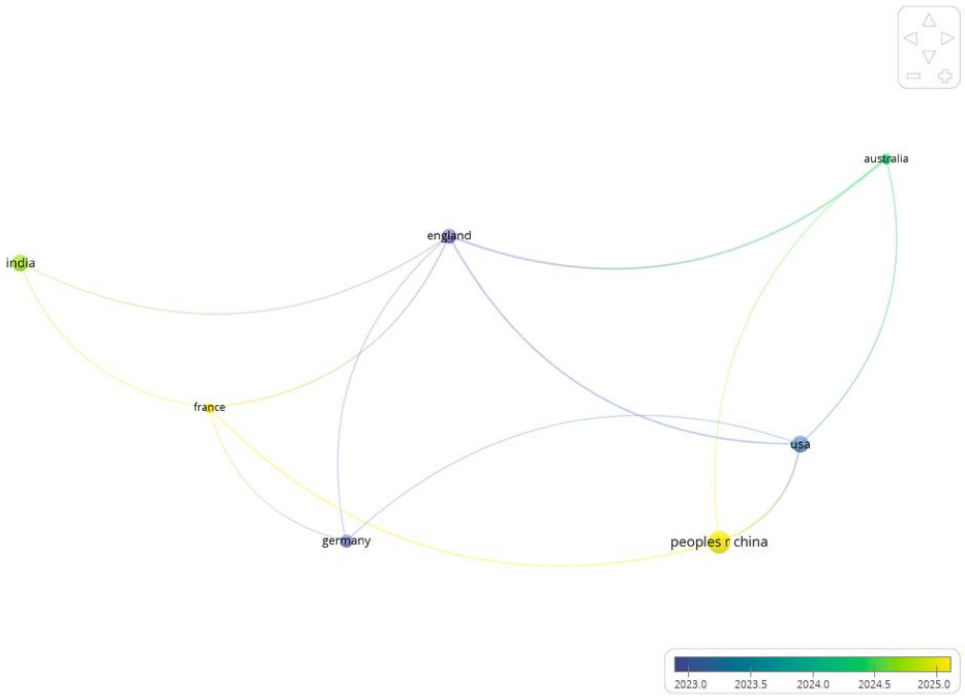


Figure 3: Research landscape using TOE

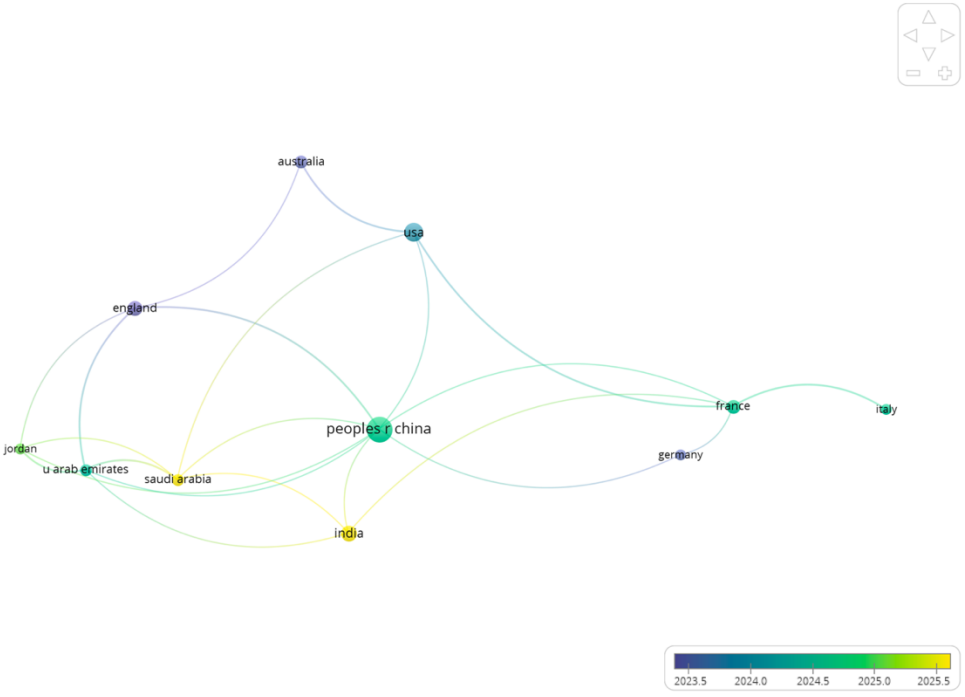


Figure 4: Research landscape using TAM

Based on Figures 3 and 4, this expanding research landscape is supported by robust global collaboration, with nations such as the United States, England, the People's Republic of China, and India emerging as central networking nodes across both models.

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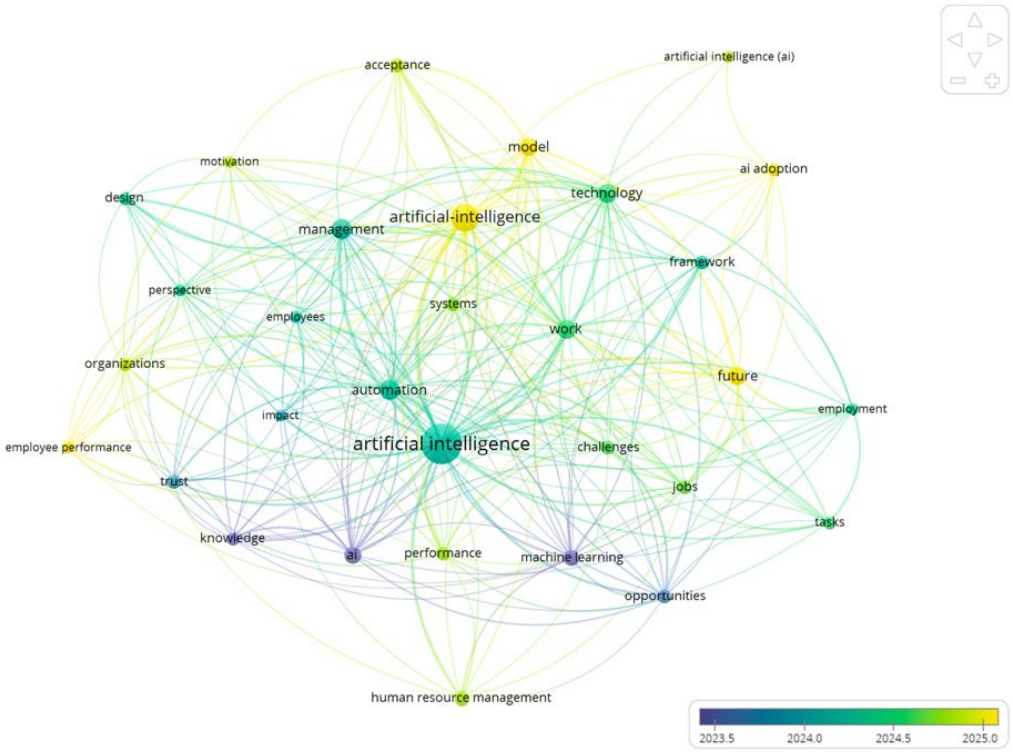


Figure 5: Keyword co-occurrence mapping using TOE

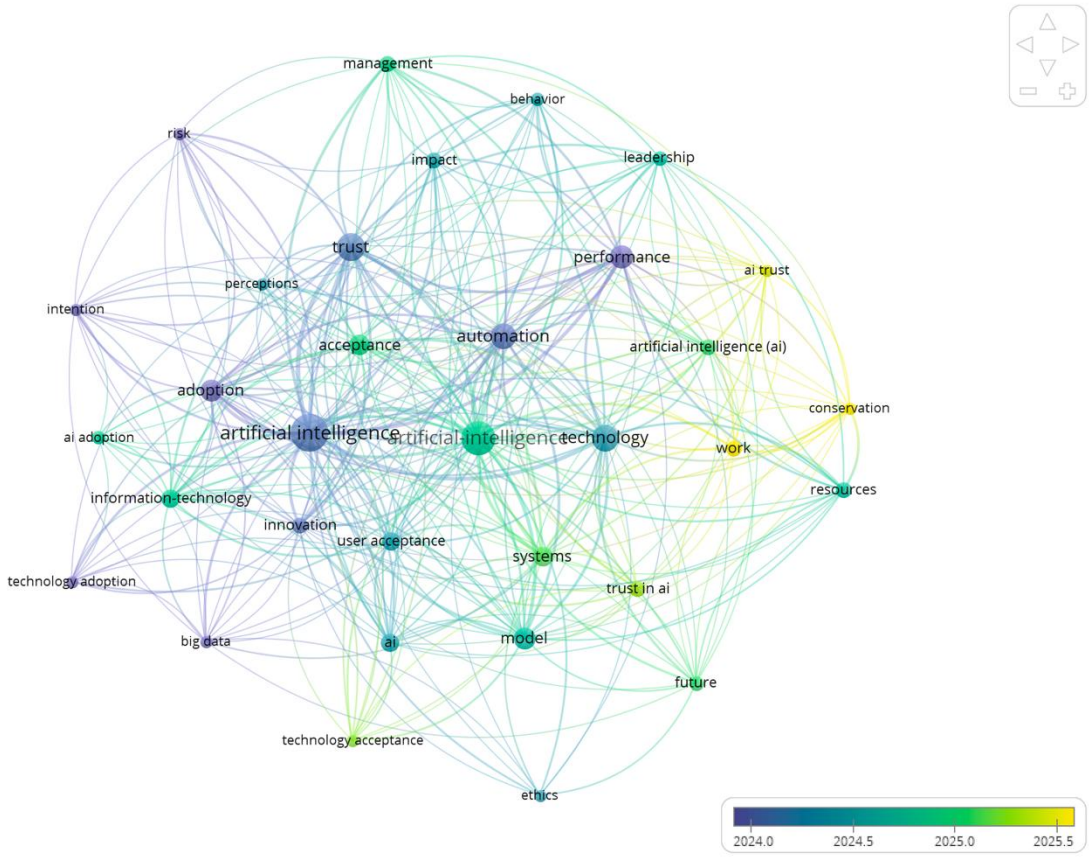


Figure 6: Keyword co-occurrence mapping using TAM

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The keyword co-occurrence mapping (Figures 5 & 6) indicate that current and emerging literature is densely concentrated around interconnected core themes, most notably "artificial intelligence," "automation," "trust," "performance," "acceptance," and "technology"

Based on the reported bibliometric findings and keyword co-occurrence maps generated using VOSviewer (Table 1), the thematic synthesis indicates that research on AI adoption and work performance encompasses interconnected technological, behavioural, organisational, and performance-related dimensions. The prominence of keywords such as artificial intelligence, automation, technology, and acceptance reflects the importance of technological implementation and individual acceptance in the existing literature. Meanwhile, the presence of trust and performance highlights the relevance of examining both the behavioural mechanisms underlying AI adoption and its potential organisational outcomes.

From a theoretical perspective, the TOE framework provides a foundation for understanding the organisational and environmental conditions influencing AI adoption, whereas TAM explains individual acceptance through perceived usefulness and perceived ease of use. Bringing these perspectives together offers an opportunity to examine AI adoption from multiple levels of analysis.

Table 1: Summary of Bibliometric Analysis of Thematic Evolution

Thematic dimension	Dominant themes identified	Interpretation of the literature
Technological development	Artificial intelligence, technology, automation	Research focuses on the development and implementation of AI technologies and automation to transform work processes.
Technology acceptance	Acceptance, perceived usefulness, perceived ease of use	Research highlights the importance of individual perceptions in shaping technology acceptance and willingness to use AI.
Organisational readiness	Organisational culture, communication structure, management support	Organisational conditions may facilitate or constrain the implementation and use of AI technologies.
Environmental influences	Competitive pressure, regulatory support	External pressures and institutional support may influence organisational decisions to adopt AI.
Trust in AI	Trust, acceptance, artificial intelligence	Trust is a relevant behavioural consideration in the acceptance and use of AI systems.
Work performance and outcomes	Performance, automation, artificial intelligence	Research connects AI implementation with changes in work processes and potential performance outcomes.
Integration of theoretical perspectives	TOE, TAM, technology adoption	Organisational and individual perspectives offer complementary explanations of technology adoption.
Emerging research direction	Trust, AI adoption, performance	The intersection of trust, AI adoption, and performance provides an opportunity to investigate mechanisms linking technology acceptance to work outcomes.

Conclusion

This study provides a bibliometric overview of the research landscape on AI adoption and work performance through the TOE framework and the TAM. Based on publications retrieved from the WoS database for the period 2020–2026, the analysis highlights the growing scholarly interest in AI adoption, its determinants, and its potential implications for work performance. The publication trends, international collaboration networks, and keyword co-occurrence maps generated using VOSviewer collectively illustrate the interconnected nature of research in this field.

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The keyword co-occurrence analysis identifies artificial intelligence, automation, technology, acceptance, trust, and performance as prominent themes. These themes reflect the importance of understanding AI adoption not only from a technological perspective but also in terms of individual acceptance, organisational readiness, and performance outcomes. The TOE framework provides a useful foundation for examining organisational and environmental determinants, including organisational culture, communication structure, competitive pressure, regulatory support, and management support. In contrast, TAM emphasises individual perceptions, particularly perceived usefulness and perceived ease of use, in explaining technology acceptance. Considered together, these theoretical perspectives offer complementary insights into the factors associated with AI adoption.

Despite the increasing attention to AI adoption, further research is warranted to clarify the mechanisms through which AI adoption relates to work performance, particularly in public sector accounting. Trust is especially relevant in this context because the use of AI involves sensitive financial information, public funds, and decisions requiring accuracy, transparency, and accountability. Accordingly, future empirical research should investigate how organisational and individual factors influence AI adoption and how trust and AI adoption may mediate the relationships between these factors and work performance. Integrating the TOE framework and TAM may provide a more comprehensive perspective on AI adoption across organisational and individual levels.

This study contributes to the literature by mapping the major themes and theoretical perspectives associated with AI adoption and work performance, while identifying potential directions for future research. Practically, the findings may inform public sector organisations seeking to develop effective AI implementation strategies by addressing organisational support, regulatory conditions, employee acceptance, and trust. Nevertheless, the findings should be interpreted in light of the study's methodological boundaries, including its reliance on the WoS database, its restriction to English-language journal articles and reviews, and the selected publication period. The 2026 publication data may also be incomplete at the time of analysis. Future bibliometric studies could incorporate additional databases, compare thematic development across different periods, and examine variations across sectors and countries. Subsequent empirical studies could then validate the relationships identified in the proposed integrated framework and establish more clearly how AI adoption contributes to work performance in public sector accounting.

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