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Leadership in Human-AI Teaming: A Bibliometric Analysis of Collaboration, Trust, and Performance

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ABSTRACT

The rapid integration of artificial intelligence (AI) into organizational work has transformed conventional approaches to teamwork, leadership, and decision-making, creating a growing research domain centered on human–AI teaming. This study aims to examine the intellectual structure, research development, and emerging themes in the literature on leadership in human–AI teaming, with particular attention to collaboration, trust, and performance. A bibliometric analysis was conducted using 43 documents indexed in the Scopus database, with VOSviewer employed to visualize co-authorship and keyword co-occurrence networks. The analysis examined publication trends, subject areas, institutional and country contributions, collaboration patterns, and the conceptual relationships among major research themes. The findings indicate a substantial recent expansion of research in this field, with Computer Science representing the largest subject area, followed by Business, Management and Accounting, Economics, Engineering, and Social Sciences. The co-authorship analysis demonstrates increasing collaboration across countries, institutions, and multidisciplinary research groups. The keyword analysis identifies artificial intelligence, decision making, human resource management, leadership, autonomous agents, intelligent agents, and human-agent teaming as central themes. The temporal analysis further indicates a shift from technology-oriented research toward more sophisticated forms of human–AI collaboration and organizational integration. The findings suggest that leadership, collaboration, trust, and performance should be examined as interconnected dimensions rather than isolated research topics. This study contributes to the literature by mapping the development of leadership research within human–AI teaming and identifying opportunities for future research on leadership mechanisms, calibrated trust, collaborative processes, and team performance in AI-enabled work environments.

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1. INTRODUCTION

Artificial intelligence (AI) is progressively becoming a participant rather than a means in collaborative efforts. The development of technologies such as machine learning, autonomous agents, and generative AI has made it possible for AI systems to engage in interdependent activities,

communicate, make decisions, and modify their actions in a team context. These changes have resulted in the emergence of human-automated teaming (HAT), where humans and automated systems become interdependent team members aiming at common goals. Human-AI teaming differs from human-technology interaction in that it demands taking into account such factors as team composition, communication, coordination, shared cognition, trust, and collective performance (McNeese et al., 2021; Musick et al., 2021). Therefore, as artificial intelligence becomes more widely used in business organizations and professional settings, there appears a question about how to understand leadership in case of teams consisting of not only human beings.

The results of early research show that the efficiency of human-agent teams is not only based on technical characteristics of AI. The structure of a team and human perceptions about AI teammates can have an effect on communication, coordination, team cognition and performance (McNeese et al., 2021; Musick et al., 2021). Especially humans perceive the agent differently than human teammates and it can have an impact on information sharing, coordination and trust in AI-based recommendations. Based on this, (Flathmann et al., 2021) conclude that traditional ideas about leadership should be reconsidered in the context of human-agent teams because the leader of such teams needs to control not only human resource but also integration of artificial agents, information and tasks. Recent studies consider AI to be a proactive participant of a team rather than a simple technological tool, which means that traditional theories of teamwork and leadership need to be reconsidered (Tummala et al., 2025).

In this context, trust is one of the key mechanisms that can make successful interaction between humans and AI possible. Human colleagues need to evaluate the situations in which AI suggestions should be followed, challenged, changed, or discarded, thus placing special emphasis on calibrated trust. Studies show that trust can vary in different cases, depending on whether a colleague is human or AI and even on the performance of AI and the expertise of the person (Zhang et al., 2023). In addition, according to (Georganta & Ulfert, 2024), the perceived trustworthiness and affective interpersonal trust towards AI colleagues can be lower than that towards human colleagues, although cognitive trust can form in people due to positive evaluations of AI competence and reliability. Trust, therefore, cannot be considered as an individual attitude to technology alone; it is an emergent team-based mechanism.

The issue of trust and team performance is made even more complicated by the nature and behavior of AI systems. Transparency, explanations, reliability, ethics, and competence can affect whether humans place trust in the right AI system. For instance, in their study, (Ling et al., 2023) found that confidence and explanations provided by AI can impact the levels of trust and task performance in human-autonomy teams. In another study, (Schelble et al., 2024) found that the unethical behavior of an autonomous teammate reduces trust in that specific teammate as well as in the whole team, but it does not necessarily have clear impacts on objective team performance. Recent studies also suggest that dynamics of trust in human-AI teams are multi-directional and can be dependent on the team composition as well as communication versus behavior of the trust process.

On the other hand, growing complexity of collaboration between people and AI imposes additional leadership duties as well. For instance, leaders will have to figure out the way AI is integrated within teams, division of responsibilities between people and AI, interpretation of advice from AI, etc. In this regard, leadership itself can be viewed as an instrument of integration of human abilities, AI abilities and processes taking place within teams. Thus, according to (Zárate-Torres et al., 2025), leadership serves as an intermediary between human intelligence and AI, facilitating processes of integration, governance, organizational feedback and context-based decision-making. Similarly, (Tummala et al., 2025) noted that it was necessary to rethink teamwork models in case AI started playing a role of an active team member. At present, experimental research began exploring even more dramatic scenarios, namely leadership of human teams by AI. Findings of collaborative experiments show that AI can perform certain leadership roles, albeit not always successfully.

While research on human-AI teaming has seen great expansion in recent years, the literature on the subject still exhibits fragmentation with regard to disciplinary focus, terms used, theory bases,

and contexts of research. For example, according to the scoping review and network analysis conducted by (Berretta et al., 2023), several different streams of research on human-AI teaming exist, such as human and task variables, explainability, AI-enabled robotic systems, and performance of AI. It should be noted that among the outcomes most frequently addressed were trust and performance, which demonstrates their importance for the field. Nevertheless, the literature on human-AI teaming has long been more technology and engineering-focused than it was oriented toward the holistic approach to leadership and organizational teamwork. Recent reviews still reveal fragmentation in the literature and the need for linking communication, coordination, trust, explainability, decision-making, and performance.

Such fragmentation poses a unique chance for a systematic analysis of the intellectual structure of research on leadership within HAT. While prior research has separately addressed AI teammates, trust, team cognition, collaboration, performance, and leadership, there still lacks sufficient knowledge about the relations between these streams and their development over time. Specifically, it is necessary to determine the dominating themes within the field, the connection between leadership and collaboration and trust, the influential scholars and publications that have defined the domain, emerging clusters of concepts, and themes that have not been studied sufficiently. The fast emergence of generative AI and autonomous agents makes the issue even more urgent since the research agenda has shifted from rather controlled human-autonomy experiments to more complicated organizational settings. According to recent data, performance, trust, explainability, decision-making, and team processes are now the major dimensions of HAT research, while human readiness and trust calibration have also become an area of growing interest (Tremblay et al., 2026).

This paper applies bibliometric analysis to research about leadership in human-AI teaming, specifically focusing on the intertwined issues of collaboration, trust, and performance. Through analysis of publications trends, influential authors and documents, citation patterns, keyword co-occurrence, thematic clusters, and evolving research themes, this study aims at contributing to a better understanding of intellectual development and emerging research areas in this field. This study provides an intellectual map of a multidisciplinary area of research and highlights how leadership is an essential aspect of organizational and interpersonal dynamics in human-AI teaming. Such intellectual mapping can pave the way for future studies to advance more comprehensive theories of leadership, trust calibration, collaboration, and performance in human-AI teams.

2. METHODS

Bibliometric analysis was used in this paper in order to carry out a systematic analysis of the development and structure of knowledge concerning research in the sphere of leadership in human–AI teamwork, focusing on collaboration, trust, and performance. This bibliometric analysis was chosen due to the opportunity it provides researchers with to quantitatively analyze publication patterns, citation patterns, themes of research, and emerging topics. The bibliographic data were collected from the Scopus database, since it provided extensive coverage of the peer-reviewed scientific papers. The search strategy was oriented at the identification of publications concerning the interrelation of human–AI teaming, leadership, collaboration, trust, and performance. The search terms included relevant keywords in the title, abstract, and keywords fields, while the publication years were set to be between 2021 and 2026.

The identified records were then screened to increase the relevance and consistency of the dataset. Inclusion criteria included journal papers and conference papers in English that are pertinent to human-AI teaming, leadership, collaboration, trust, or team effectiveness. Records that have no bearing on the research, duplicates, and publications beyond the designated time frame were excluded. The bibliographic data extracted from Scopus consisted of the paper title, author names, affiliation, abstract, keywords, citations, and references. This produced a dataset ready for analysis through bibliometric methods. Of particular importance were author keywords and indexed

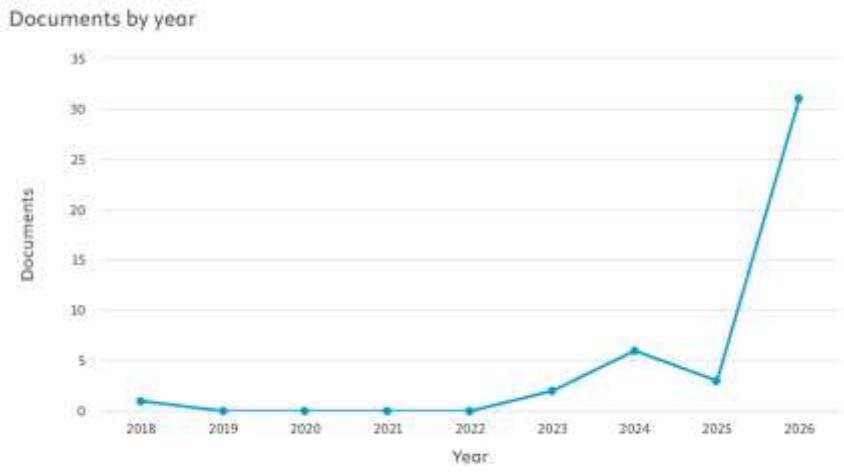
keywords, as these would provide the foundation for determining the conceptual themes of the research field.

Bibliometric network was carried out through VOSviewer, which is a widely known bibliometric tool used for bibliometric network analysis. Various types of analysis were carried out, such as keyword co-occurrence analysis, citation analysis, bibliographic coupling, and co-authorship analysis, depending on the appropriateness of the retrieved documents for the type of analysis. Keyword co-occurrence analysis helped reveal dominant themes in the literature and relations between such concepts as leadership, trust, collaboration, and performance. Citation and bibliographic coupling helped reveal the most important publications in the field and intellectual connections, while co-authorship analysis helped discover cooperation patterns among researchers. Networks were interpreted according to the intensity and number of links between objects using VOSviewer visualization.

3. RESULT AND DISCUSSION

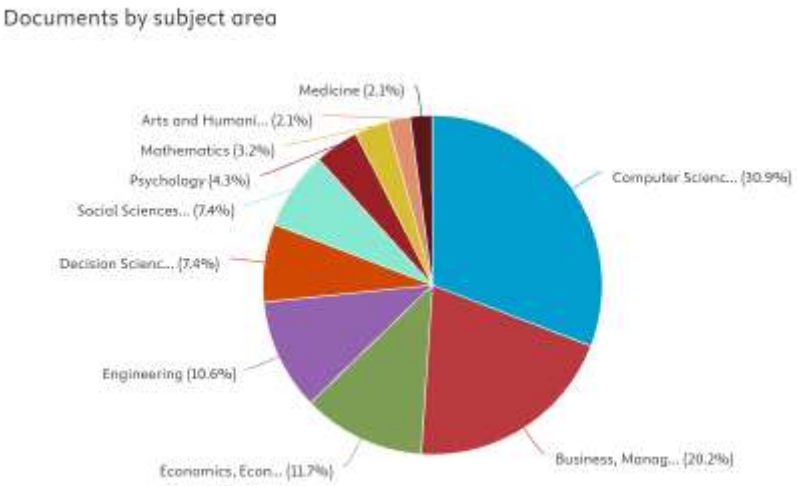
3.1 Descriptive of Database

Bibliometric dataset serves as a preliminary insight into the evolution and distribution of studies regarding the leadership in human-AI teaming, mainly focusing on cooperation, trust, and performance issues. Using Scopus database, 43 publications have been found within the received dataset. From the publication trends, it becomes evident that during the early period, the scientific works on this subject matter remained very limited. Thus, only one paper was cited in 2018, with no publications found for the years 2019-2022. The growth in publication rate started from 2023, where two documents were published, followed by six publications in 2024. However, in 2025, the number dropped to three papers, but the significant increase was noted in 2026 when 31 papers were published, and it constitutes the majority of the dataset. Therefore, the rapid rise of the number of scientific publications indicates the growing interest in the topic under investigation, especially in the area of organizational cooperation and interaction between people and AI.

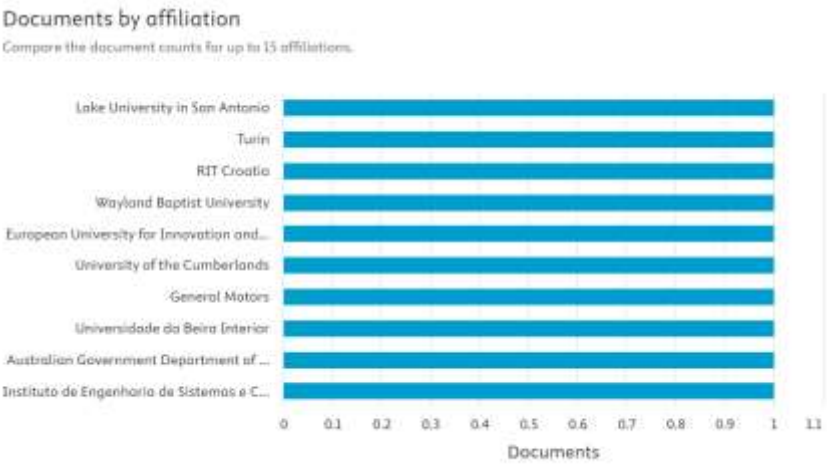


The distribution of publications per subject area shows the interdisciplinary nature of the field of research. Computer Science is the largest subject area, comprising 30.9% of the documents, followed by Business, Management and Accounting (20.2%) and Economics, Econometrics and Finance (11.7%). Engineering constitutes 10.6%, while Decision Sciences and Social Sciences comprise 7.4% of the total. Psychology comprises 4.3%, followed by Mathematics (3.2%), Arts and Humanities (2.1%) and Medicine (2.1%). The above distribution shows that the research about human-AI teams has strong grounding in the technological and computational approach, whereas the business, management, behavioral, and social sciences perspective is increasingly gaining

importance. The significant contribution made by Business, Management and Accounting subjects is especially relevant for the current study since the issues of leadership, collaboration, trust and organizational effectiveness have everything to do with how human and technological capabilities are integrated.

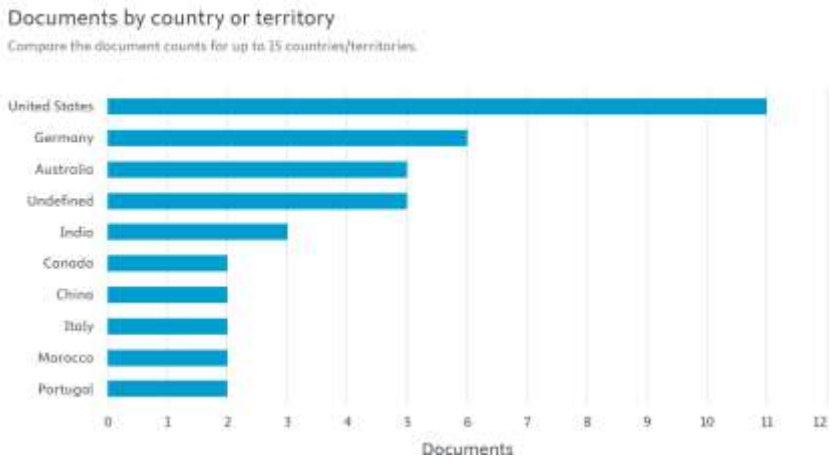


Affiliation Distribution reveals quite a diffuse scientific research landscape. The leading affiliations presented in the Scopus data base provided just one scientific document each: Lake University San Antonio, Turin, RIT Croatia, Wayland Baptist University, European University for Innovation and Sustainability, University of the Cumberlands, General Motors, Universidade da Beira Interior, Australian Government Department of Industry, and Instituto de Engenharia de Sistemas e Computadores. The lack of a dominating affiliation proves that human–AI teaming research is not centered around a single academic institution. It seems that the scientific research on the topic includes researchers from universities, research institutions, and industry-related institutions. This distribution of the affiliations is quite understandable considering the interdisciplinary character of human–AI teaming that implies participation of researchers from computer science, engineering, management, psychology, decision sciences, etc.



In terms of geography, the most productive country in the database is the United States with 11 documents, then comes Germany with six documents, and Australia with five documents. Three documents were submitted by India, and Canada, China, Italy, Morocco, and Portugal submitted

two documents each. There were five undefined documents in terms of the Scopus country/territory. The domination of the United States shows that the US plays an important role in research about human-AI teaming, and at the same time, the presence of countries from Europe, Asia, Africa, and Australia proves that it becomes an increasingly international area. Overall, it can be seen from the descriptive analysis that the research area is fast developing and multidisciplinary, especially in 2026, and that there are many contributions from computer science and business fields.

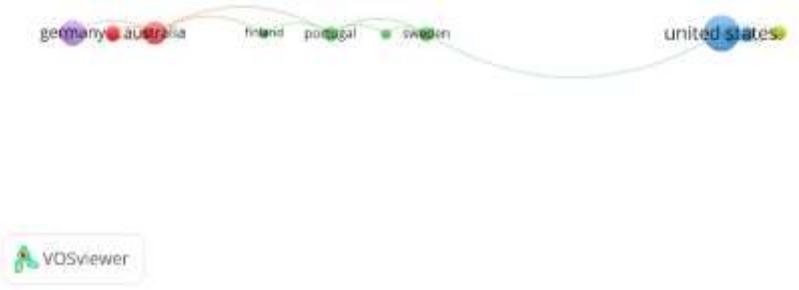


3.2 Co-Authorship Analysis

Co-authorship network analysis was performed using VOSviewer in order to identify collaboration trends at three different levels: country level, affiliation level, and individual researchers level. Network visualizations give some insights into the evolution of research on leadership in human-AI teams due to international, institutional, and researcher collaborations.

3.2.1 Co-Authorship Network by Country

This network of cooperation among countries reveals some interconnections but remains fairly concentrated at the same time. In the network presented above, the USA is recognized as the most noticeable node, reflecting its relatively more powerful position in the process of collaboration within the research field. This is evidenced by the relatively large size of the node compared to those representing other countries in the network. The USA collaborates with several countries, including Sweden, thus acting as a connecting element for various national research groups.

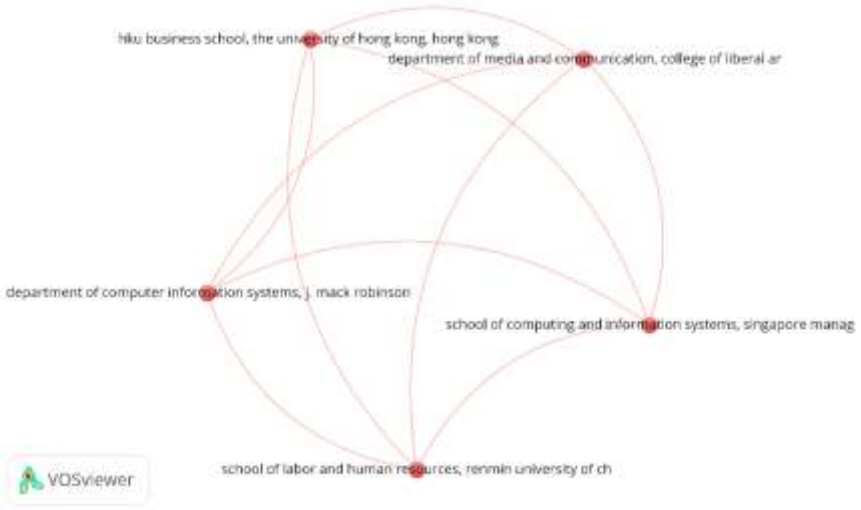


The second category is made up of Germany and Australia, which are located near to each other, and there are connections between them visible in collaboration relations. It can be said that scholars from those two nations have conducted joint research work in the studied literature. Another inter-connected block is formed by Finland, Portugal, and Sweden. Connections among those nations imply presence of research relations among nations rather than individual nation publishing activity. Portugal and Sweden play an important role in bridging the European block with the global network.

The country level network shows that human and artificial intelligence team research is carried out using international cooperation and not national research production. Even though, the large size and position of the United States in the network implies that the United States is structurally important in this area. The network further shows that European countries play their role in this research area through interconnected research groups whereas Australia adds another geographical link to the network of collaboration. However, the small number of countries in the network shows that there is selectivity in international collaboration in this new field of research.

3.2.2 Co-Authorship Network by Affiliation

Analysis at the affiliation level shows that there is a very well connected institutional collaboration network that comprises five large affiliations. They include HKU Business School, The University of Hong Kong; Department of Media and Communication, College of Liberal Arts; Department of Computer Information Systems, J. Mack Robinson; School of Computing and Information Systems, Singapore Management University; and School of Labor and Human Resources, Renmin University of China.



In contrast with the country-level network, the affiliation network is marked by a tightly structured one in which the institutions are directly or indirectly linked to each other via collaboration ties. The Department of Computer Information Systems, J. Mack Robinson College and the School of Computing and Information Systems, Singapore Management University are positioned strategically in the network since they have collaboration ties with various institutional nodes. This means that research on human-AI teaming is being created through the collaborative efforts of computing-related institutions and business, communication, and human resource management institutions.

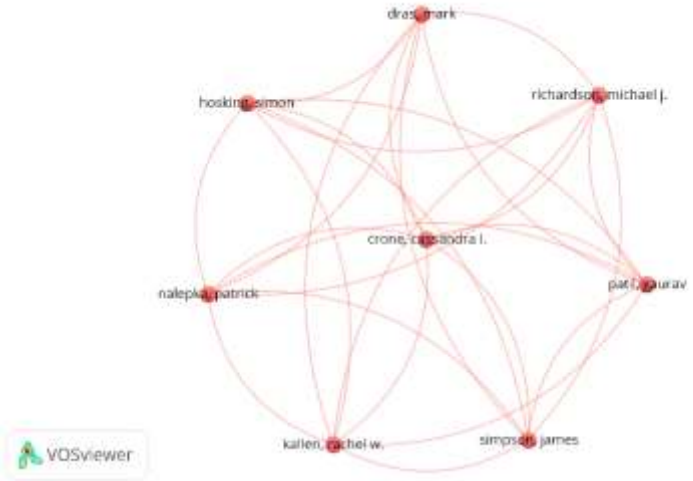
It is especially important for the present study that such institutions as HKU Business School, the Department of Media and Communication, and the School of Labor and Human Resources exist since it is evidence that human-AI collaboration goes further than technical aspects of artificial intelligence. It means that organizational approach, communicational approach, and human resources management approach are included into the study of collaboration between humans and

intelligent machines. The network is the reflection of the interdisciplinary nature of the field, where computer science and information systems overlap with management, communication, and organizations.

The interconnections between the affiliations are also quite dense, implying that there might be more than a few publications within the database produced by collaborative groups from more than one institution. The interconnectedness of the institutions implies that the growth of the field is not being carried out within isolated disciplinary communities but rather through the integration of technological perspective with organizational and behavioral aspects. This is important in relation to leadership, trust, collaboration, and performance in human–AI teams.

3.2.3 Co-Authorship Network by Author

Author level collaboration network is the one that shows the most detailed information about collaboration in the data set. In the visualization, there is a well-connected network of researchers comprising Dras, Mark; Hosking, Simon; Richardson, Michael J.; Nalepka, Patrick; Crone, Cassandra L.; Patil, Gaurav; Simpson, James; and Kallen, Rachel W. There are many links between the authors in this network, which implies that the papers in this network belong to collaborative efforts rather than individual efforts.



Richardson, Michael J., Dras, Mark, and Hosking, Simon are located at prominent visual points on the network, with many connections reaching out to other researchers. This placement shows that there is quite a lot of collaboration going on between these people and the rest of the author network. Nalepka, Patrick, Kallen, Rachel W., Simpson, James, and Patil, Gaurav are also part of the network via many co-authorships. These connections show that the scientific community has grown by repeated collaborations between researchers, rather than independent publishing streams.

The tight clustering pattern is especially interesting in that it shows that a number of scholars work together as part of an intellectual collaboration network. This kind of structure is compatible with the nature of human–AI collaboration studies, which are likely to require knowledge of artificial intelligence, human factors, organizational behavior, communication, and teams. Instead of showing a very fragmented group of authors, the figure shows the emergence of research clusters that cooperate in related fields. However, the size of the author network seems rather small considering the growth rate of publications illustrated in the descriptive section. This implies that there is fast-growing development in this field but has not attained a diversified author network in the global community yet. It seems that only a few people are behind the collaboration network, and there are others who do contributions in smaller publication networks. This happens to be a common feature in an emerging research field whereby research teams can serve as future scholarly anchors.

3.3 Top Cited Literature

Table 1. Top Cited Literature

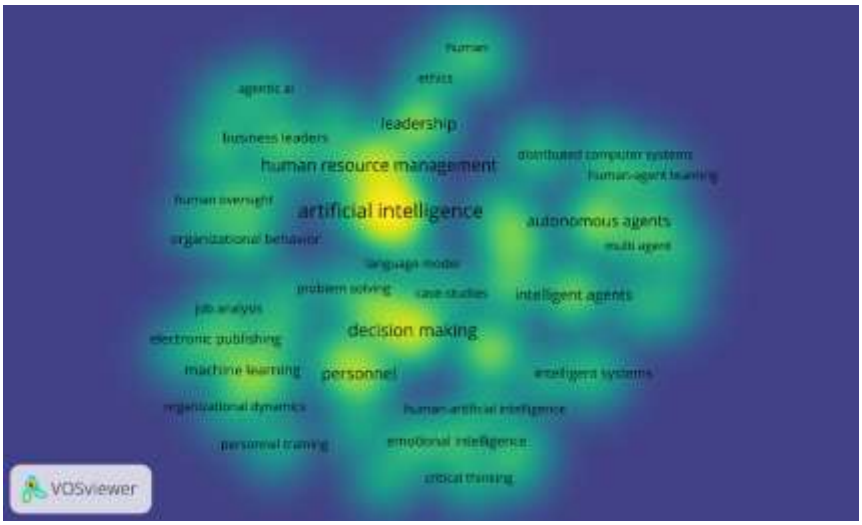
Citations	Author	Title
58	(Smith & Green, 2018)	Artificial Intelligence and the Role of Leadership
16	(Lin & Chen, 2025)	Mentoring for effective human-AI collaboration: an integrated theoretical framework
13	(Lobo et al., 2024)	When Should I Lead or Follow? Understanding Initiative Levels in Human-AI Collaborative Gameplay
11	(Du et al., 2023)	Innovating AI Leadership Education
9	(Gurulakshmi & Gayathri, 2025)	The Human- AI Partnership: Elevating Leadership With Emotional Intelligence

3.4 Co-Occurrence Analysis

Co-occurrence analysis helps identify the conceptual framework underlying research on leadership within human-AI team collaboration through the examination of the frequency and interrelationships between keywords. The VOS viewer visualization provides different views depending on which of the three VOSviewer visualizations is being considered: the density view highlights the densest areas of research, the overlay view captures the evolution of keywords over time, and the network view illustrates major clusters.

3.4.1 Density Visualization

From the graph above, we can see that artificial intelligence is the best center of concept for the research domain. The bright yellow region around the artificial intelligence shows the high density of often repeated and linked keywords. This shows that artificial intelligence is the basic concept from which the surrounding themes came.



A second important concentration appears around decision making, which is closely positioned below artificial intelligence. This indicates that decision-making is a major application and research concern within human–AI collaboration. The prominence of decision making suggests that researchers are not examining AI merely as a technological innovation but are increasingly concerned with how AI affects human judgment, task allocation, problem solving, and organizational decisions.

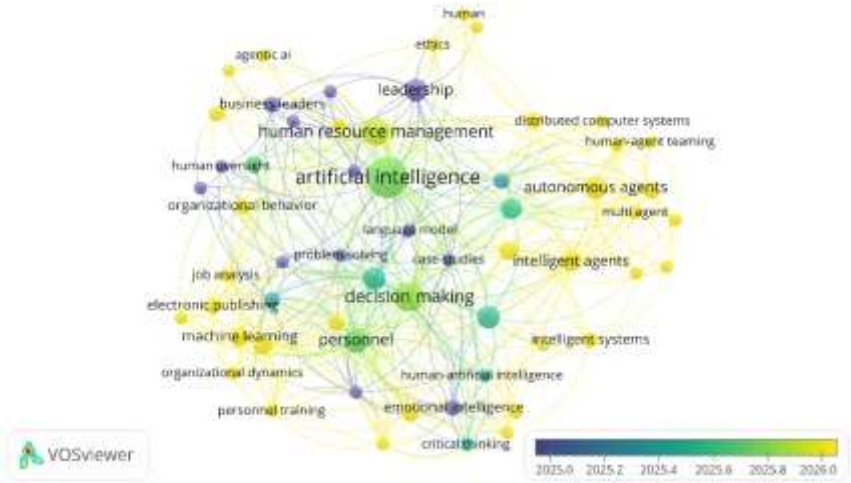
The density map further shows a considerable concentration in relation to human resource management, leadership, and personnel. The relationship between these concepts and the AI main theme is especially pertinent to this paper. This suggests that there have been many attempts to connect AI adoption with organizational and managerial practices. Human resource management

can be seen as a significant intermediary concept connecting AI technology research and the human/organizational aspect of teaming. Leadership is another significant theme appearing above the main AI theme.

To the right of the visualization, there is another cluster emerging around topics like autonomous agents, intelligent agents, multi-agent, human-agent teaming, and intelligent systems. This cluster highlights the technological and systems side of human-AI teaming. The name of the cluster suggests that the majority of the publications discuss the technological dimension of human-AI teaming by viewing AI as an autonomous or semi-autonomous agent who is able to take part in the teamwork process. In turn, on the left side and below there are clusters including such topics as organizational behavior, human oversight, business leaders, job analysis, personnel training, organizational dynamics, emotional intelligence, and critical thinking. These topics denote the human and organizational side of integrating AI into organizations.

3.4.2 Overlay Visualization

The overlap visualization offers data regarding the evolution of research topics through time. The scale of colors varies between 2025 and 2026, with darker blue/purple topics indicating relatively early research, while green/yellow ones denote relatively recent research.



The main keyword of "artificial intelligence" is depicted in a moderately colored green shade, denoting that this is one of the main topics which still remains in focus and is being investigated. The central place and abundant number of connections denote the role of the term as one of the core concepts that bridges old and new trends in studies. The topics that appear relatively early include leadership, human supervision, and various organizational topics. For instance, the topic of leadership can be found in the blue/purple area, which denotes that the studies on the topic of leadership appeared relatively early in relation to the technological topics.

On the other hand, several words related to autonomy and collaboration between humans and AI agents are located in the greener or yellower parts of the visualization. Autonomous agents, intelligent agents, multi agent, human-agent teaming, distributed computer systems, and intelligent systems are some of these terms. The rather new colors of these words show a shift from perceiving AI as a technology to seeing AI as an entity participating in the work process. One can notice the same pattern on the organizational level. Words such as business leaders, human resource management, organizational behavior, personnel training, and emotional intelligence are related to the general development of the field, indicating that the focus of attention is gradually shifting to human skills needed for collaboration with AI. The emergence of the notions of critical thinking and emotional intelligence in the second half of the color sequence is especially important as they signify the growing interest in specifically human abilities.

3.5 Network Visualization and Thematic Clusters

The network visualization gives the best visual depiction of the conceptual connections between the keywords. The map shows an extremely interconnected research framework, where the concept of artificial intelligence is placed at the core and linked to concepts such as leadership, human resource management, decision-making, autonomous agents, organizational behavior, machine learning, and others.

The first major category is comprised of AI, leadership, and organizational management. Some of the keywords from this group include artificial intelligence, leadership, human resource management, business leaders, organizational behavior, human supervision, and agentic AI. Inclusion of such words into this interconnected group suggests that the issue of AI is increasingly considered from the point of view of organization and leadership. It is especially true for human resource management as this concept allows linking technological advancements to employee management and their competencies. The second major group is devoted to the topic of human-AI teamwork and autonomous systems. Such keywords as autonomous agents, intelligent agents, human-agent teaming, multi agent, distributed computer systems, and intelligent systems can be found in this category. Inclusion of such keywords suggests that the research in question is focused on the technology of human-AI teams and their characteristics.

The third theme is that of decision-making and human cognition. Important keywords in this category are decision making, problem solving, language model, case-studies, machine learning, personnel, emotional intelligence, and critical thinking. In this cluster, the importance of the mechanisms by which humans interact with AI is discussed. The prominence of decision making implies that AI's influence on human decision-making is an important topic in the literature. The fourth theme deals with human capability, organizational change, and workforce development. Relevant keywords include personnel training, job analysis, organizational dynamics, emotional intelligence, critical thinking, and human oversight. This shows that human capabilities are important for effective AI integration into organizations and that it is not enough to introduce new technology; organizations need to build human capabilities to interpret AI outputs, conduct human oversight, cope with uncertainty, and make decisions together with AI systems.

The map also provides several key bridging concepts. Artificial intelligence serves as the best link between technological, organizational, and human-centered research. Human resource management serves as the link between artificial intelligence and leadership and workforce problems, and decision making serves as the link between artificial intelligence technologies and human cognition. Autonomous agents and intelligent agents serve as the link between the technological area and human-agent collaboration. It is clear that bridging concepts prove that this field is not divided into entirely isolated research communities.

Discussion

Bibliometric results show rapid growth and increasing interdisciplinarity of studies on the topic of leadership in human-AI collaboration. While the publication trend indicates significant growth in the number of publications on this topic, especially in 2026, the subject-area distribution shows that Computer Science is still the leading field, with other prominent areas including Business, Management and Accounting, Economics, Engineering, Decision Sciences, and Social Sciences. Such results suggest that collaboration of humans and artificial intelligence is perceived not only as a technical issue but becomes more socio-technical and organizational one. Such conclusion is supported by the analysis of co-authorship, which shows collaboration between authors from different countries and institutions who have education and expertise in computing, business, communication, and human resources. This conclusion is confirmed by the works of (Schmutz et al., 2024; Tummala et al., 2025).

Furthermore, the keyword co-occurrence results reveal that the concept of artificial intelligence becomes the key one and shows strong linkages with leadership, human resource management, decision making, autonomous agents, organizational behavior, and human-agent

teaming. According to the density visualization, artificial intelligence, decision making, and human resource management become the key areas of research interest. This pattern indicates that the field of studies shifts from the technologically-focused perception of AI to questions about changes in managers' work, decision making, and organizational roles due to AI. The close relationship between AI, leadership, and human resource management supports the theory that leadership plays the role of the integrating factor between human skills and capabilities of AI. For instance, (Zárate-Torres et al., 2025) define leadership as the dynamic factor that mediates human intelligence and AI, paying attention to such factors as governance, context-dependent judgments, communication, and organizational adaptability. The current bibliometric analysis expands this discussion and demonstrates that leadership is not a separate theme but becomes part of a bigger network related to organizational behavior, human involvement, business leaders, and decision making based on AI.

In particular, another interesting finding pertains to the link between collaboration and trust. Despite the prevalence of such concepts as human-agent teaming, autonomous agents, intelligent agents, and decision making in the network, the concept of trust is not represented in the most prominent keywords of the current co-occurrence network. However, such a result should be considered theoretically meaningful rather than implying that the topic of trust is irrelevant for the current literature. Existing evidence shows that trust is among the key variables defining whether humans collaborate with AI successfully. According to (Zhang et al., 2023), the performance of teammates is an important factor affecting the performance of human-AI teams, and human behaviors towards AI teammates depend on the perception of their competence and reliability. (Schmutz et al., 2024) noted that adding an AI teammate can worsen coordination, communication, and trust, especially when team members do not share the common understanding. It was recently found that the concept of trust in human-AI teams is socially transmitted as well – high levels of trust from human teammate can increase the trust towards AI teammate and improve the overall team performance.

The findings also indicate that the research agenda is shifting toward AI autonomy and more sophisticated forms of human–AI collaboration. The overlay visualization shows relatively recent emphasis on autonomous agents, intelligent agents, multi-agent systems, human-agent teaming, and intelligent systems, whereas leadership, human oversight, and organizational themes appear as comparatively established concepts. This temporal movement reflects a fundamental change in the role assigned to AI: from a system that supports human decisions toward an agent that can participate in, influence, and potentially coordinate team activities. (Tummala et al., 2025) similarly argue that existing teamwork models must be reconsidered when AI becomes an active participant in joint activity, communication, and decision making. Recent evidence takes this development further by examining whether AI agents can assume leadership roles. A 2026 experimental study found that AI agents could lead humans in collaborative tasks, although AI-led teams did not consistently match human-led teams in overall performance and remained constrained by communication flexibility and social awareness. These findings indicate that future leadership research should not focus exclusively on leaders managing AI, but should also examine AI-mediated leadership, AI-supported leadership, and potentially AI-led teams.

These results, in combination, indicate that the next research phase should be geared towards a holistic leadership-collaboration-trust-performance framework. From the bibliometric perspective, it is evident that there is a solid technological and organizational foundation for these issues; however, the connections between the leadership approaches, trust development, collaboration, and performance are still poorly integrated. Organizational studies have shown that collaboration with humans and artificial intelligence can generate value through interoperability, trust-building, and shared knowledge gain. Moreover, research on trust contagion indicates that trust within human–AI teams operates as a social process, while recent evidence suggests that trust and distrust can influence team outcomes differently depending on team composition and interaction patterns. Consequently, based on the findings of this current bibliometric study, leadership can be viewed as the process of ensuring proper structuring of human-AI relations,

creation of governance structure and overseeing, building of calibration trust, and coordinating of capabilities of both humans and AI to achieve joint performance. Such an approach gives rise to solid ground for further empirical research in how leadership contributes to creating collaborative systems out of human-AI interaction.

4. CONCLUSION

In conclusion, the present work demonstrates that the research related to leadership in the context of human–AI teaming is a rapidly expanding and interdisciplinary area of research, especially since recent years. Bibliometric results clearly suggest that the theme of artificial intelligence still is central for research while leadership, human resource management, decision making, autonomous agents, human-agent teaming, and organizational behavior can be regarded as key interrelated research areas. Co-authorship results reveal increasing collaboration among authors from different countries, institutions, and academic disciplines; however, the research network is highly concentrated on several leading research groups. Finally, the co-occurrence and temporal analyses suggest a change of view on AI from a technological instrument to an active player in collaborative and organizational processes. Importantly, the findings provide evidence of an opportunity to integrate the themes of leadership, collaboration, trust, and performance into one single research framework. Consequently, future research should focus on the exploration of how leadership mechanisms promote human–AI collaboration, calibrated trust and human control, coordination of human and AI abilities, and team and organizational performance.

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