

Artificial Intelligence and Leadership: A Bibliometric Analysis

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Abstract: AI integrated leadership entails a revolution in leadership management and decision-making processes among leaders. AI does not just introduce changes that augment the existing practices but reforms the leadership processes from the ground up, offering novel tools like machine learning algorithms and the deep analysis of the data that might help leaders forecast the future tendencies in the sphere, improve productivity, and make proper decisions based on the proven KPIs. Nevertheless, it contributes to many problems, especially in ethical issues, open-mindedness, fairness, and its effects on the workforce. It shows that the future of leadership agenda will continue focusing on these issues as leaders are expected to communicate responsibly in such contexts. It has also been identified that with the advancement of the field of AI and leadership research has also expanded in proliferation with the number of articles, sources and scholars involved have also established an exponential growth. This research presents an insight into the significant trends and thematic directions in the management and leadership field, where AI is becoming a critical focus, offers information about newer topics in the field, including sustainability, optimization, digital transformation, and ethical questions. The collaborative networks among authors imply a strong and connected research community; however, the authors from different countries participated in the development of this study, and the primary countries are the USA, China, and the UK. With the advancement of AI becoming more imminent, it is crucial for academicians, professionals, and policymakers to effectively grasp its consequences towards leadership in regard to positioning the effectiveness of AI towards organizational outcomes and its compliance with/impact on ethical and social responsibilities. Apart from the mapping of the current literature, the identification of trends outlines the overall AI and leadership scholarship trajectory and future research opportunities while stressing responsible and creative use of AI in leadership.

Keywords: *Artificial Intelligence (AI), Bibliometric Analysis, Leadership*

Introduction

Leadership is inspiring, guiding and influencing people when it is necessary (Iddagoda, 2021). In the last few years, the topic of Artificial intelligence (AI) and leadership combines two subjects that have become central to study across the business world. The various applications of AI are contemporary to the different management processes, decision-making paradigms, and leadership approaches of

organizations (Manta, 2020; Shahzad et al., 2023). Thus, this paper employs bibliometric analysis to perform a comprehensive mapping of the growing field of AI and leadership as well as to identify current prevalent trends and valuable publications and scholars for the field.

The concept of AI incorporation into leadership strategies is not a mere addition of using technology in one's practices but

a transformation of how leaders perform their roles and carrying out decision-making processes. In many fields, artificially intelligent tools such as machine learning algorithms and advanced data descriptors are making it possible for leaders to have a vantage point they have never before had. These tools improve leaders' competence in predicting future business trends, increasing efficiency, and making decisions based on performance information and metrics that affect organizational outcomes and competitiveness (Haenlein & Kaplan, 2019).

However, the integration of AI into leadership also creates challenges and important questions to consider. The timely questions concerning ethicality, openness, prejudice and effects on the workforce are very much part of the ongoing debate surrounding AI and the idea of leadership (Binns, 2018; Crawford, 2022). Managing these challenges and understanding the opportunities of transforming organizations by AI are the tasks of leaders.

Over the years, AI has continued to have an impact on a wide range of fields, including leadership, which makes this bibliometric analysis an endeavor to conceptualize the field by gauging the literature's growth trajectory and thematic development. Using publication frequencies, citation maps, and co-words, the present paper offers a systematic literature review at the end of the study that helps to identify the historical progression of the field and future research opportunities (Donthu et al., 2021; Zupic & Čater, 2014). The main research objectives of the study as follows.

1. What are the recent publication trends in AI and Leadership research?
2. What are the most prominent sources in AI and Leadership research?
3. Who are the most influential authors studying AI and Leadership?
4. Which countries lead in AI and Leadership research influence?
5. What keywords are frequently used by authors in AI and Leadership research?
6. What themes are frequently used by authors in AI and Leadership research?
7. What future research recommendations are suggested for AI and Leadership?

To establish the best practices, it is vital for academicians, professionals, and policy makers to understand the state-of-art of AI research for leadership. It guides authors on the best approaches that can be used as evidence in leadership while informing managers on policies on responsible incorporation of AI in policies (Wilson & Daugherty, 2018). This paper contributes to literature by providing an excellent review of the relevant literature, which would offer insights on how AI is transforming leadership paradigms.

Methodology

This section explains the scientific process that was followed to perform bibliometric analysis of articles related to AI and leadership. This particular work uses both simple and more advanced bibliometric measures with the goal of assessing the scholarly activities within the chosen topic, and finding out the most dominant patterns, core concepts and underlying intellectual associations. The methodology consists of the following steps: data collection, data cleaning, bibliometric analysis, and interpretation of the results.

Data Collection

The primary data for this bibliometric investigation was obtained from the Web of Science database, which is rich in indexed, international, interdisciplinary, and scholarly articles (Dissanayake et al., 2022; Schotten et al., 2017). In regards to scientific publications, Web of Science is the biggest and the most extensive database in the world (Dissanayake et al., 2022). Over 11000 scholarly, peer reviewed, high impact journals in the appropriate fields of life, physical, social sciences, technology, medicine, and related disciplines are offered. In the context of this article, Web of Science was employed in the research. Selected words included ‘artificial intelligence, AI’ and “leadership” all of which were used in different contexts. The publication type was restricted to articles, reviews, conference papers, and book chapters with the publication year between 1992 and 2023 to identify the growth and development of the population of interest.

To ensure the relevance of the dataset, the following inclusion and exclusion criteria were applied:

Inclusion Criteria: Scholarly publications such as articles in peer reviewed journals, papers presented in conferences, and book chapters on leadership and management with a special emphasis on Artificial Intelligence.

Exclusion Criteria: Scholarly papers in languages other than English, journal articles that have not been peer reviewed, and papers in unrelated areas or that are irrelevant to the specific subject of leadership and AI (such as general discussions of AI algorithms and technologies without regard to their applicability to leadership).

Data Cleaning

To avoid counting the same publication twice, records that appeared in the databases were duplicated and discarded.

Bibliometric Analysis

Descriptive Analysis

As simple publication rates and trends, the number of publications per year, leading journals, and prolific authors were determined.

Citation Analysis

The number of citations were used to determine articles or authors that are most frequently cited in the domain. This is useful in a way to expose these following seminal papers and eventual thought leaders in the economy of both AI and leadership science.

Co-Occurrence Analysis

The term frequency and distribution technique were used to determine frequently used keywords corresponding to research themes. This involved developing a co-occurrence matrix and using biblioshiny tools to present the relationship of interest between the keywords (Aria & Cuccurullo, 2017)

Collaboration Analysis

According to the patterns of co-production of authors, collaboration networks of authors were identified to determine the patterns of cooperation in research. This analysis involved identifying affiliations of the institutions with other institutions as well as of institutions with geographical regions.

Interpretation of Results

Visualizations

Outcome metrics of different visualizations including trend graphs, network maps for co-occurrence, and co-occurrence plots were used to present the results. These visualizations offer direct comprehension of such compositions as the structure and development of the researched field.

Thematic Analysis

The themes derived from co-occurrence analysis and citation frequency analysis of the shortlists of keywords and cited references were reviewed within the framework of the earlier literature. This included proposing what each topic is about in general, and how they are interconnected and relevant to AI and leadership.

Discussion of Trends

The findings were considered in light of valuable insights in terms of trends and

advancements in AI and leadership literature. This encompassed suggesting areas of research that had not been covered by previous authors and the direction the researchers should take in the future.

Results

Trend Analysis

The evaluation of publications concerning AI and leadership for the period of 1992–2023 confirms the rising tendency. The field was initially characterized by low levels of interest and now constitutes a highly developed branch of academic research that has been experiencing tremendous growth in the past few years. The results of four studies also showed an increase over time, which indicates the growth of AI importance and incorporation in leadership practices, arguing for further investigation of the field to face new challenges and develop new applications.

Table 1: Trend Analysis

Year	Articles
1992	1
1993	1
1994	0
1995	0
1996	0
1997	1
1998	0
1999	1
2000	1
2001	0
2002	2
2003	1
2004	1
2005	1
2006	1
2007	0

2008	1
2009	0
2010	3
2011	0
2012	3
2013	1
2014	2
2015	4
2016	7
2017	3
2018	18
2019	20
2020	41
2021	76
2022	98
2023	95

Source Impact Analysis

The source impact analysis identifies journals and publications, which can be stated as the most pertinent to the field of AI and leadership by using the measures as h-index, g-index, m-index, total citations (TC), number of published articles (NP) and the year the source started publishing on this topic (PY_start). Such measures are useful in understanding the efficiency, relevance and contributions of some sources in the academic circle.

The source impact analysis shows that the subject area has source heterogeneity to some extent and the journals that have most influenced the field of AI and leadership are presented. Prestigious journals such as Technological

Forecasting and Social Change and Journal of Service Research have also prepared notable proportions with high citation and best

bibliometric measurements. Journals like ACM Transactions on Interactive Intelligent Systems and California Management Review also mark high and continuous influence even though they have been published recently. These contributions reveal the continuous focus and shift of this research domain through such outlet journals as Sustainability and Journal of Business Research. These sources further widen the perspective of the approach taken towards understanding the role and impact of AI in leadership both as theory and practice.

Table 2: Source Impact Analysis

Source	H_Index	G_Index	M_Index	TC	NP	PY_Start
Technological Forecasting and Social Change	4	4	0.800	367	4	2020
Journal of Service Research	1	1	0.250	309	1	2021
Journal of Product Innovation Management	2	2	0.400	194	2	2020
International Journal of Management Education	1	1	0.200	149	1	2020
ACM Transactions on Interactive Intelligent Systems	1	1	0.200	142	1	2020
California Management Review	1	1	0.167	138	1	2019
International Journal of Production Research	2	2	0.500	121	2	2021
Sustainability	7	9	1.167	108	16	2019
Journal of Business Research	6	6	0.240	102	6	2000
Science Technology & Human Values	1	1	0.333	83	1	2022

Author Impact Analysis

The author's impact analysis provides insight into the most influential researchers in the field of AI and leadership.

Table 3: Author Impact Analysis

Author	h_index	g_index	m_index	TC	NP	PY_start
Chatterjee S	6	8	1.200	333	8	2020
Huang MH	1	1	0.250	309	1	2021
Rust RT	1	1	0.250	309	1	2021
Liu J	3	3	0.429	258	3	2018
Chang Hh	1	1	0.200	174	1	2020
Forrest Jyl	1	1	0.200	174	1	2020
Yang BH	1	1	0.200	174	1	2020
Iansiti M	1	1	0.200	171	1	2020
Vendraminelli L	1	1	0.200	171	1	2020
Verganti R	1	1	0.200	171	1	2020

According to the author's impact analysis, there is still a large number of researchers active in AI and leadership from a variety of organizations, whether it is in the proprietary or non-proprietary domain. S. Chatterjee has published numerous highly cited papers and another reputable author, J. Liu, also proved her multiple impacts. On the other hand, newer scholars, including M. H. Huang and R. T. Rust have already started featuring prominently in recent works with one but definitively key publication. It also underlines an overall increase and stakeholder activity in the areas of AI and leadership with the combination of recent authors and further experienced ones proving its growth and significance.

Country Analysis

Country Impact analysis is elaborated in Table 4, which indicates the top 10 countries which have the highest citations. USA, China, United Kingdom, Australia are the highest cited countries which have citations greater than 270. Nordic countries Scotland, for instance, published

less articles than Germany (Scotland 208 while Germany published 284) but its index citation is much higher (35). 50 and 49. 70, respectively. This means that although they are not very active in research activities, if they engage in the research, then their research is well capable of influencing the academic community. It is also evident that the research impact of countries Australia and Germany has significant average article citations of 16.90 and 18.20 each, which indicates that its academic reputation is somewhat strong with emphasis on innovative research. On the other hand, Canadian and Indian articles, with an average citation of 10, are less acknowledged by other scholars. 90 and 12, 60, according to the given coefficients, prove that their articles are cited but have an average number of citations per article indicating that the output of the top countries remains the most impactful. In summary, this analysis reveals how research output is not shared equally across countries from the level of reference to productivity and notoriety in the global academic network.

Table 4: Country Analysis

Country	TP	TC	Average Article Citations
USA	391	1103	10.00
China	96	843	22.80
United Kingdom	98	644	23.00
Australia	39	271	16.90
Germany	37	219	18.20
India	52	215	12.60
Sweden	14	213	35.50
Canada	47	152	10.90
Japan	10	149	49.70

Word Frequency Analysis

The word frequency analysis gives information about the major concepts and issues that are top-of-mind in the domain

of AI and leadership. Therefore, studying relative frequencies of certain terms in the chosen field will allow us to see which areas garnered the most attention and what is the current focal point of research.

Reflecting on the analysis of the most used scientific terms, it is crucial to comprehend that modern investigations are primarily concerned with AI technologies, leadership, and digital transformation. Topics like sustainability and ethical issues, or the effects of coronavirus on global supply chains and consumer behavior represent extending developments in the academic field and shifting research focus. The authors of this study demonstrate how it is possible to create the roadmap of future research at the junction of AI and leadership, so scholars get a sense of the directions which have to be avoided, and which have to be further investigated.

Thematic Analysis of Clusters

The outlined thematic analysis that considers the word occurrences and centrality measures offers a best-fit framework for categorizing the thematic areas within the AI and information on leadership. They include clusters, which group several subtopics describing the subject matter and the focus of research on this subject, as well as its further development as an interconnected academic field.

Cluster 1: Artificial Intelligence

The largest and most important of all is the one based on the keyword ‘artificial intelligence’ mentioned 136 times with a high BC 13,917. 591 suggesting that it plays a connecting function between different topics (Lee et al., 2020; Sutton et al., 2016). This cluster includes words like ‘leadership’ which appeared 40 times, machine learning’ which appeared 24

times and ‘technology’ which appeared 14 times and ‘management’ which appeared 8 times; this counts for a centrality of 3,692. 515, 3,076. 089 and 1,047. 476 and 215. 701 respectively. Due to the prevalence of these terms, there must be thorough coverage of how AI affects leadership, decisions, and technology in the organization and its daily operations. Higher centrality values denote the cohesiveness of these issues, which place AI studies squarely at the epicenter of contemporary leadership research. Other expressions can also include ‘deep learning’, education, innovation, trust’ which all underscore the versatility of AI across the leadership and management domains.

Cluster 2: Optimization

The second group is labeled “optimization” and refers to the use of AI to enhance operations and decision makings within companies (Ekici et al., 2021; Popov et al., 2022). This cluster refers to the term optimization which occurred four times with centrality of 71. 06%. Thus, although cataloged under a relatively less extensive cluster, the present set of AI technologies highlights its application in the real world regarding advanced optimization of organizational resources and sound decision-making processes.

Cluster 3: Sustainability

The “Sustainability” cluster is dedicated to the intersection between AI and sustainability as well as health [Alnamrouti et al.: 2022; García-Jaramillo et al.: 2023; Hs Rg Henseler et al.: 2023]. The terms most frequently associated with this cluster are “sustainability” (appears 10 times, 1,383. 291 centrality), “digital health” (appears 5 times, 204. 396 centrality) and “pls-sem” (appears 4 times, 22. 316 centrality). By evaluating the centrality ratios, it was found that the word

‘sustainability’ has a high centrality value which points toward its importance in the research area; this can be interpreted as revealing a research interest in the application of AI toward sustainable leadership. This cluster points to the expansion of awareness regarding the role

AI can implement in the advancement of sustainability across different organizational settings.

Table 5. Word Frequency Analysis

Words	Occurrences
Artificial Intelligence	137
Leadership	40
Machine Learning	24
Technology	14
Digital Transformation	13
Ai	11
Sustainability	10
Appreciative Inquiry	8
Artificial Intelligence (Ai)	8
Management	8
China	7
Ethics	7
Covid-19	6
Deep Learning	6
Education	6
Innovation	6
Automation	5
Digital Health	5
Information Technology	5
Trust	5

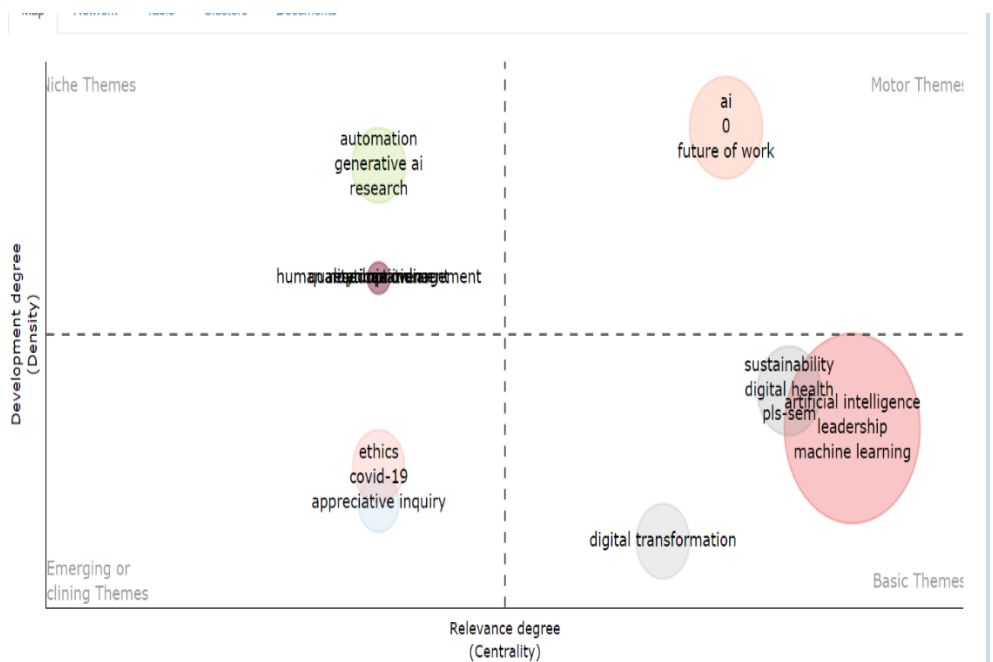


Figure 1: Thematic Map

Cluster 4: AI

The last terms were analyzed and grouped into the fourth cluster which was named “AI” because it concerned the general trends and consequences of AI development. Some keywords are “ai” (appearing 11 times, with 442. 753 centrality), “future of work” (appearing 4 times, 68. 724 centrality), “industry 4” (appearing 4 times, 36. 145 centrality), and “sustainable development” (appearing 4 times, 90. 32 centrality). Here, another cluster of ideas revolves around the changes that AI brings to the workplace, the 4 th industrial revolution or Industry 4. 0, and the sustainable development goals. The centrality measures suggest that these topics are going to be important in

defining the organizational and leadership models of the future.

Cluster 5: Automation

The “automation” cluster discusses how AI unreceptive things and creates new forms of intelligence. It comprises such words as ‘automation’ (5 times, average centrality of 0. 382), ‘generative ai’ (with 4 occurrences and centrality of 0. 237. 997), and ‘research’ which was also mentioned 4 times and has an average centrality of 0. The idea of generative AI is linked to more inventive and explorative approaches to AI research that stress its creative and self-contained qualities, whereas the word automation refers to more real-world-based applications of AI that aim to improve productivity.

Cluster 6: Digital Transformation

This cluster, which can be called “digital transformation,” represents such words as “digital transformation” (13, 675. 21 centrality). This cluster might summarize the large-scale shifts caused by digital technologies in system, activities and environment. The high centrality value will suggest that digital transformation is central to these organizations and shows that most research topics explore how AI supports and drives these processes.

Cluster 7: Appreciative Inquiry

The "appreciative inquiry" cluster includes the term "appreciative inquiry" (8 occurrences, 373.258 centrality), highlighting research that explores positive, strengths-based approaches to leadership and organizational change facilitated by AI. This cluster suggests a more human-centric approach to AI integration, focusing on leveraging organizational strengths to drive innovation and improvement.

Cluster 8: Management of people and other resources in an organization for achieving organizational goals.

The last cluster, as is indicated by its name “human resource management,” consists of the following term: “human resource management” its occurrences are 4 and centrality is 66. 045. The concerns in this cluster relate to consequences of AI adoption for HR work including selecting, Training and engaging people. It stresses the ability of AI in the administration of line functions in organizations with particular emphasis to HR.

Cluster 9: Ethics

The “ethics” cluster includes words such as “ethics” (appears 7 times and has a centrality of 386,108), “covid-19” which

appears 5 times and has a centrality of 438/5. This cluster deals with the, or lack thereof, of ethical issues arising from AI and leadership. The incorporation of ‘covid- 19’ has the implication of the pandemic as having initiated new ethical concerns and hastened the require ethical frameworks within artificial intelligence applications based on the overall need to embrace responsible AI and the ethical concerns surrounding the integration of AI in leadership practices.

Cluster 10: Quality Improvement

Quality improvement is assigned to Cluster 10, the name of which stems from the presence of this keyword; the “quality improvement” label was assigned 4 scores, 454. 271 centralities. These topics seem to fall under this cluster likely due to publishability of research about how AI could be used to improve quality management and continuous improvement efforts within organizations. For everyone, it demonstrates how AI can push up quality and efficiency of use to higher levels.

Cluster 11: Adoption

Cluster 11 named as “adoption” contained of word “adoption” is most frequent in the text (appears 4 times) and has the highest centrality number 308. 863. This cluster focuses on understanding tendencies associated with AI implementation in organizational contexts. It also relates the dynamics and inhibitors of AI adoption together with the recommendations needed in managing it so that we can implement the AI leadership and management effectively.

Cluster 12: American Indian

Cluster 12, labeled "American Indian," contains the term "American Indian" (4 occurrences, 126.79 centrality). This

cluster appears to focus on research related to specific cultural or demographic groups, possibly exploring the impact of AI and leadership practices within American Indian communities. It suggests a niche area of study examining the intersection of AI, leadership, and cultural contexts.

Author Collaboration Network

The author collaboration network presented here is a comprehensive analysis of how various authors interact and collaborate within a research community. Using parameters like normalization, clustering algorithms (walk trap), and centrality measures, we can visualize and understand the structure of these collaborations. The network is normalized by association and uses a variety of visualization settings to enhance clarity and comprehension.

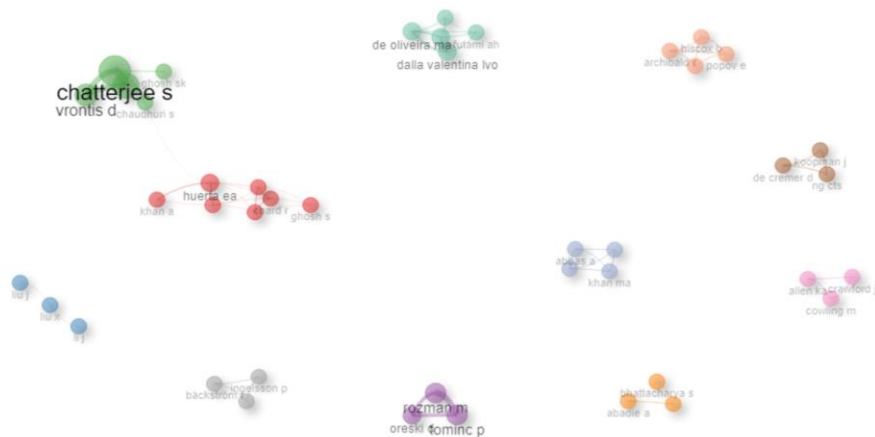


Figure 2: Author Collaboration Network

The author collaboration network discussed here is a measure of the relationship and communication between authors in a given research field. There are various parameters that help us in visualizing and to understand the structures of these collaborations such as normalization procedures, clustering methods like walk trap, and different centrality measures. The network is normalized by association meaning it makes use of several highlights to improve on the views settings in order to provide an enhanced view and understanding of the Network.

Computed clusters define several groups of authors that obviously cooperate with each other rather closely. Some of the authors found under cluster 1 are Huerta EA, Chard R, and Chaturvedi P(Chaturvedi et al., 2022; Ravi et al., 2022). The second cluster relates to the focus on the application of AI in the management of energy resources. Huerta EA again would have a Betweenness centrality of 32. It scores 67 for connectedness, which means that most of the nodes are connected to at least one other node and may help bring together different clusters. This connector plot also

shows a high degree of proximity, thus suggesting that there is a good collaborative relation between most of the departments in this cluster. Concepts that revolve around the artificial intelligence models for analysis of gravitational waves

There are J. Liu and J. Li in Cluster 2 which indicates high Closeness centrality. Among all the employees within this cluster, the employee with the lowest Closeness centrality is Liu X, with a score of 0.5, which indicates that they come at the heart of the resultant network (Hu et al., 2022; Ravi et al., 2022). The last cluster is linked with centered on AI and education. This implies that authors in Cluster 2 possess social capital for fast access to necessary information and high collaboration productivity. That is why having more than one author with high centrality values in the listed cluster allows us to suppose that it represents a strong and closely interconnected group of authors.

Chatterjee S and Chaudhuri R are the authors that belong to cluster 3 (Chatterjee et al., 2020; Vrontis et al., 2023). This is because the values for Betweenness and Closeness which characterize this cluster are average, though higher, showing that combs are involved in clique-like interaction within this cluster but interact with nodes outside the cluster less often. Looking specifically at self-centrality only, among the key people, Chaudhuri S features highest among them with a betweenness centrality of 28.06, meaning that it has a greater importance of interconnectivity of different parts of the network in comparison of being in a more significant rank of the network community.

The fourth cluster comprises authors using the name Rozman M, Tominc P, and Oreski D, all have a Closeness centrality of 0.5 (Rožman et al., 2022, 2023). This high Closeness means that these authors are, in fact, core to their cluster and can

have rapid and direct access to other authors in the same cluster. Nevertheless, they have an aspect of fragmentation with low Betweenness centrality which indicates that they are likely to impact other elements within the cluster than the overall network.

The authors recording Cluster 5 include Abadie A, Bhattacharya S, and Chowdhury S among others (Chowdhury et al., 2023; Dey et al., 2023). Like Cluster 4, we note again that these authors have a high value of Closeness centrality, that is they occupy central positions in the cluster. By experiencing the similar Closeness value, there is an implication of a compact group in which all members are similarly connected, or in this case not connected at all, to the other members. Low Betweenness centrality found that these authors are not centrally positioned as mediators between diverse clusters but associate intensively with closely connected authors.

Conclusion

This specific bibliometric analysis provides a formal methodology for this study that includes a historical assessment and review of AI and leadership. Through the exploration of the publication frequency, citation map, and keyword co-occurrence analysis, this study delivers significant information on the important emerging themes, the foundational off and interesting articles, and the leading scholars in this fast-growing research domain.

Adopting the lens of leadership practices, our research confirms the critical role of AI across various organizational functions while showcasing how machine learning algorithms, data analytics and other AI related tools are evolving decision-making processes within organizations. While analyzing the results of collaboration

analysis in the author cooperation network, key clusters – Huerta EA, Chard R, and Chaturvedi P show that the scientists are scarcely connected, suggesting that there are intense and continuous cooperation in this sphere. It is noteworthy to point out that the Betweenness and Closeness centrality scores of those key authors are also very high, which signifies that these authors indeed act as mediators and bridge between different subgroups within the examined array.

Understanding the current state of research on AI and leadership is crucial for academics, practitioners, and policymakers. This analysis informs evidence-based practices and guides the development of policies that foster responsible AI integration in leadership contexts. By identifying key contributors and collaboration patterns, this study highlights areas for strengthening research networks and enhancing collaborative efforts.

The combination of AI and leadership presents potential benefits and opportunities, alongside certain limitations and challenges. Future studies should explore the ethical and legal ramifications of using AI in decision-making, including issues of bias within AI systems. Data quality is crucial, as poor

data can lead to flawed outcomes. Transparency in AI systems is also essential, ensuring that those affected by decisions understand the reason behind them. Moreover, there is a need to identify leadership paradigms that embrace AI's opportunities while maintaining human-centered values. This research contributes to the academic understanding of the interaction between technology and leadership, expanding the knowledge base in this field. Practically, it offers a chance to transform organizational management, fostering more efficient and reflective leadership. However, establishing AI in leadership positions will require ongoing discussion and research to address new complexities.

In conclusion, this bibliometric analysis illuminates the pathways through which AI is reshaping leadership paradigms, providing a foundational understanding of the intellectual structure and thematic evolution of this field. The insights gained can guide future research, fostering innovation and strategic advantage in integrating AI into leadership practices. As AI continues to advance, ongoing research will be essential to address emerging challenges and leverage AI's full potential to enhance leadership and organizational performance.

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