Proceeding of the International Conference on Management, Entrepreneurship, and Business
Volume 1 Nomor 1 Tahun 2024
e-ISSN: XXXX-XXX; p-ISSN: XXXX-XXX, Hal 205-227
DOI: https://doi.org/xx.xxxx
Available online at: https://xxxx.xxx

Artificial Intelligence Integration in Strategic HRM: A Bibliometric Approach to Enhancing Organizational Performance

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Abstract. *This study aims to analyze the integration of Artificial Intelligence (AI) into Strategic Human Resource Management (SHRM) and its contribution to enhancing organizational performance using a bibliometric approach. The research method involves analyzing data from Scopus and Crossref databases with the help of VOSviewer software to map research trends, keyword relationships, and publication distributions. The findings reveal that AI plays a significant role in optimizing HR processes, such as data-driven decision-making, productivity enhancement, and more efficient talent management. Key trends include innovations in HR practices, the utilization of big data, and sustainability practices (green HRM). The analysis identifies a significant increase in publications since 2020, reflecting growing academic interest in this topic. This research provides practical significance by helping organizations understand the strategic benefits of AI in addressing HR challenges and driving sustainable performance. The findings of this study are expected to serve as a reference for future research exploring AI implementation across various organizational contexts.*

Keywords: *Artificial Intelligence, Strategic, HRM, Bibliometric, Organizational Performance.*

INTRODUCTION

In the rapidly evolving digital era, the integration of Artificial Intelligence (AI) has become a strategic element across various management functions, including Strategic Human Resource Management (SHRM). AI enables organizations to automate operational processes, enhance efficiency, and support more accurate data-driven decision-making (Zhang et al., 2022). The application of AI in SHRM can help improve productivity, minimize recruitment biases, and optimize employee performance management (Nguyen et al., 2023). However, despite the numerous benefits identified, challenges such as data privacy, algorithmic bias, and organizational resistance to technological change remain significant barriers (Choi et al., 2023).

While AI holds great potential to enhance efficiency in SHRM, its adoption still faces several obstacles, including a lack of understanding regarding how AI can be strategically integrated into Human Resource Management (Brynjolfsson & McAfee, 2023). Moreover, previous research has primarily focused on the implementation of AI in operational tasks, such as employee selection and evaluation, without exploring its strategic impact on organizational performance (Nguyen et al., 2023). This gap highlights

Received: August 29, 2023; Accepted: November 22, 2023; Published: Desember 28, 2024
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the need for a deeper exploration of AI's role in supporting SHRM to drive holistic improvements in organizational performance (Chatterjee et al., 2023).

Several studies demonstrate that AI has revolutionized SHRM by facilitating faster and more accurate data-driven decision-making. Through big data analysis and predictive algorithms, AI enables organizations to identify talent, map training needs, and provide real-time performance feedback (Zhang et al., 2022). Additionally, technologies such as machine learning and natural language processing allow for efficient management of employee data, thereby improving the effectiveness of human capital development programs (Nguyen et al., 2023).

Despite these identified benefits, previous studies have largely focused on the technical aspects rather than the strategic impact of AI on organizational performance. Choi et al. (2023) noted that the relationship between AI and organizational performance remains insufficiently understood, particularly in the context of sustainability and organizational cultural transformation. More comprehensive studies are required to understand how AI can be strategically applied within SHRM to support long-term business objectives (Yulianto & Iryani., 2021).

The primary research gap in existing literature is the lack of studies examining the strategic impact of AI on organizational performance through SHRM. Most research has focused solely on the technical applications of AI in operational tasks, such as recruitment and performance evaluation, without comprehensively assessing its effects on productivity, innovation, and organizational competitiveness (Brynjolfsson & McAfee, 2023). This study aims to bridge this gap by employing a bibliometric approach to analyze research trends and conceptual relationships between AI, SHRM, and organizational performance.

The novelty of this study lies in its bibliometric approach to provide a comprehensive overview of research trends and gaps in the literature concerning AI integration with SHRM and organizational performance. Unlike previous studies that focus on technical applications, this research examines the strategic impact of AI in supporting data-driven HR decision-making, fostering innovation, and promoting organizational sustainability (Nguyen et al., 2023).

The purpose of this study is to analyze the integration of AI into SHRM and its impact on organizational performance. Through a bibliometric approach, this research

explores research trends, dominant themes, and gaps in the literature to provide an in-depth understanding of how AI can be optimized to support SHRM functions (Choi et al., 2023).

The urgency of this research stems from the increasing need for organizations to adapt to technological changes and global market competition. AI can serve as a highly effective tool in supporting HR strategies, improving operational efficiency, and enabling data-driven decision-making (Zhang et al., 2022). To fully leverage AI's potential, further in-depth research is required to understand its strategic implications and address existing challenges such as algorithmic bias and organizational resistance to technological change (Nguyen et al., 2023).

LITERATURE REVIEW

Research on the integration of AI in SHRM has shown significant progress in recent years, particularly with growing attention to the impact of AI on organizational performance. Many studies have identified AI's potential to accelerate and enhance efficiency in various HR processes, such as recruitment, performance management, and talent development (Brynjolfsson & McAfee, 2023). Zhang et al. (2022) argued that AI enables organizations to manage human resources in a more data-driven manner, allowing for more objective and efficient decision-making compared to traditional approaches that rely on intuition and experience. The use of AI in SHRM facilitates smarter and more personalized workforce management, thereby improving overall organizational performance (Nguyen et al., 2023).

One of the most extensively researched areas of AI application is in the selection and recruitment process. AI can process large volumes of candidate data, enabling more objective evaluations based on skills and experience rather than relying solely on resumes or interviews. Choi et al. (2023) noted that machine learning algorithms can identify patterns in applicant data that may not be immediately visible to human recruiters, leading to more accurate decisions while reducing bias in the selection process. Additionally, AI allows organizations to predict the long-term performance of potential employees based on relevant historical data, thereby improving recruitment quality (Zhang et al., 2022).

Although AI applications in recruitment promise increased efficiency and objectivity, some researchers have criticized the ethical and privacy issues surrounding its use. Zhang et al. (2022) cautioned that over-reliance on AI algorithms in employee selection may result in hidden biases if the data used to train AI models is unrepresentative or reflects societal biases. Furthermore, Choi et al. (2023) emphasized that AI may perpetuate stereotypes or discrimination if diversity and inclusion are not adequately considered in the recruitment process design.

Beyond recruitment, AI applications in performance management have emerged as a significant topic in the literature. AI can monitor and analyze employee performance more objectively, reducing dependence on subjective evaluations from direct managers (Nguyen et al., 2023). Through big data analysis, AI can provide insights into employee productivity, identify individual strengths and weaknesses, and deliver more timely, data-driven feedback (Brynjolfsson & McAfee, 2023). This capability enables organizations to design more targeted employee development programs, improving training effectiveness, talent development, and reducing turnover rates.

While AI offers substantial potential in performance management, studies suggest that its implementation must be balanced with a human-centered approach to HR management. Choi et al. (2023) recommended that although data and algorithms offer valuable insights, human factors such as motivation, commitment, and employee well-being remain critical aspects that cannot be overlooked. Therefore, the integration of AI in SHRM should be seen as a supportive tool rather than a replacement for HR managers' roles in understanding employees' social and psychological contexts.

Furthermore, although the adoption of AI in SHRM is gaining popularity, some researchers argue that there remains uncertainty about its overall impact on organizational performance. Zhang et al. (2022) pointed out that much of the existing research focuses on the operational benefits and efficiency gains from AI, while studies examining its long-term and strategic impact on organizational performance remain limited. It creates a gap in the literature that must be addressed, how AI can be strategically integrated into broader HR strategies to support organizational goals (Nguyen et al., 2023).

Simultaneously, there are criticisms regarding the conceptual frameworks used in the AI-SHRM literature. Many existing studies focus on technical applications and easily measurable practical benefits, while few address the strategic challenges or barriers to AI

implementation at the organizational level (Choi et al., 2023). Therefore, it is essential to develop a more comprehensive framework for integrating AI into SHRM strategies, focusing not only on automation but also on fostering organizational culture and sustainable employee development.

The literature review also highlights that while AI enhances operational efficiency, many organizations face challenges in adopting and implementing AI technology. These challenges include technological readiness, limited HR skills in using advanced tools, and issues related to data quality for training AI models (Brynjolfsson & McAfee, 2023). Choi et al. (2023) emphasized that AI implementation requires robust infrastructure and investment in employee training to ensure effective technology utilization. Hence, further research is needed to explore factors influencing AI adoption in SHRM and strategies to overcome these barriers.

On the other hand, the overall impact of AI on organizational performance requires deeper evaluation. Most previous studies have emphasized operational outcomes, such as cost reduction or increased efficiency, while few have explored how AI can contribute to long-term productivity and organizational competitiveness (Zhang et al., 2022). The gap creates opportunities for research to examine the relationship between AI integration in SHRM and more holistic outcomes, including improved organizational performance, innovation, employee satisfaction, and sustainability (Nguyen et al., 2023).

While numerous studies support the significant potential of AI in SHRM, several critiques highlight the lack of a comprehensive understanding of AI's impact on organizations. This study aims to address unanswered questions in the current literature, such as how AI integration in SHRM can strategically support organizational performance and what factors influence its successful implementation (Brynjolfsson & McAfee, 2023). By employing a bibliometric approach, it research was expected to provide valuable insights into the topic and help bridge existing gaps in the literature (Yulianto & Iryani., 2023).

METHODS

This study employs a bibliometric approach to analyze the existing literature on the integration of AI into SHRM and its impact on organizational performance. The bibliometric approach was selected as it enables researchers to identify dominant research

trends, measure topic distributions, and understand methodological developments in AI studies within the HRM field (Zhang et al., 2022). The method also facilitates the analysis of relationships between key concepts in the relevant literature, such as AI, SHRM, and organizational performance, using statistical tools and visualization to map research progress (Choi et al., 2023). With this approach, the study aims to provide a comprehensive overview of how AI is integrated into HRM practices and to explore its contributions to improving organizational performance, an aspect often underrepresented in previous studies (Nguyen et al., 2023). Additionally, the bibliometric approach allows the identification of existing research gaps, laying the foundation for further studies to address these voids and strengthen the understanding of AI's potential in SHRM (Brynjolfsson & McAfee, 2023).

The research data is secondary, derived from articles indexed in Scopus and Crossref that are relevant to the topic of AI integration in SHRM and its impact on organizational performance. The primary data sources consist of peer-reviewed journal publications and scientific conference proceedings indexed in reputable databases such as Scopus and Crossref, which provide access to high-quality academic research (Zhang et al., 2022). Data were collected based on specific keywords, including "AI", "Artificial Intelligence", "SHRM", "Strategic Human Resource Management", "Strategic HRM", and "Organizational Performance, with filters applied to the publication year range (2014–2023) to ensure the relevance and timeliness of the literature (Choi et al., 2023). Using bibliometric tools, the data were analyzed to identify research trends, key authors, and topical themes within the articles (Nguyen et al., 2023). The approach allows the study to gain a comprehensive understanding of how AI is applied in SHRM, its contributions to organizational performance, and its potential for further research in the field (Brynjolfsson & McAfee, 2023).

The data collection technique was conducted using Publish or Perish, a software tool designed to extract relevant bibliometric information on AI integration in SHRM and its impact on organizational performance. Publish or Perish allows researchers to access scientific databases such as Scopus and Google Scholar, using citation metrics and indexes as search parameters (Harzing, 2022). The software was used to extract data from articles using specific keywords, including "AI", "Artificial Intelligence", "SHRM", "Strategic Human Resource Management", "Strategic HRM", and "Organizational

Performance", while providing insights into citation counts, h-index, and research trends in the field (Zhang et al., 2022). By utilizing Publish or Perish, the study identified key articles, prominent authors, and topical distributions of relevant literature, which were subsequently analyzed to depict research progress and uncover gaps in the implementation of AI in SHRM (Nguyen et al., 2023). The technique ensures comprehensive and structured data collection, essential for conducting in-depth and valid bibliometric analysis (Choi et al., 2023).

The data analysis technique was performed using VOSviewer for visualizing and analyzing bibliometric data. VOSviewer enables the creation of visual maps that represent relationships between keywords, authors, and articles based on the data collected through Publish or Perish and other sources (Van Eck & Waltman, 2020). By employing VOSviewer, the study identified thematic clusters within the literature on AI integration in SHRM and analyzed patterns of collaboration between researchers (Zhang et al., 2022). The technique simplifies the examination of the temporal development of AI topics in SHRM, highlighting trends and the evolution of related subtopics, such as AI applications in recruitment or performance management (Choi et al., 2023). Moreover, VOSviewer assists in detecting relationships between key concepts within the existing literature, such as AI, SHRM, and organizational performance, while exploring research gaps that remain underexplored in prior studies (Nguyen et al., 2023). Utilizing VOSviewer in bibliometric analysis provides a clearer perspective on how AI is applied in SHRM practices and its overall influence on organizational performance.

RESULTS

Based on Table 1, the research data for this study were sourced from two primary databases, Scopus and Crossref. The initial data collected comprised 1,200 articles from Scopus and 1,000 articles from Crossref. Following the filtering process, 235 articles from Scopus and 517 articles from Crossref were excluded, resulting in a final dataset of 965 articles from Scopus and 483 articles from Crossref for analysis. This process highlights the rigorous filtering method employed to ensure the relevance of articles to the topic of AI integration in SHRM and its impact on organizational performance (Zhang et al., 2022).

The substantial volume of data demonstrates that this topic has garnered significant attention in academic research in recent years. This trend aligns with findings by (Nguyen et al., 2023), who stated that the integration of AI in SHRM has increasingly been studied due to its contributions to enhancing efficiency, innovation, and strategic decision-making within organizations. Additionally, the large volume of research retrieved from databases such as Scopus and Crossref reflects the academic community's trust in the reliability of these scientific resources, as acknowledged by Choi et al. (2023).

Table 1. Research Data

Source	Initial Data	Excluded Data	Analyzed Data
Scopus	1200	235	965
Crossref	1000	517	483

Overall, the process of data collection and filtering reflects a systematic and transparent methodological approach, forming the foundation for conducting an in-depth bibliometric analysis on the integration of AI into SHRM (Pereira et al., 2023).

Figure 1 highlights a significant increase in the number of research publications related to the integration of AI into SHRM from 2014 to 2023. This trend indicates that advancements in AI technology have become a primary focus in both academic research and human resource management practices (Nguyen et al., 2023). The growth in research reflects a global response to Industry 4.0, where AI is regarded as a strategic tool for enhancing organizational performance (Zhang et al., 2022).

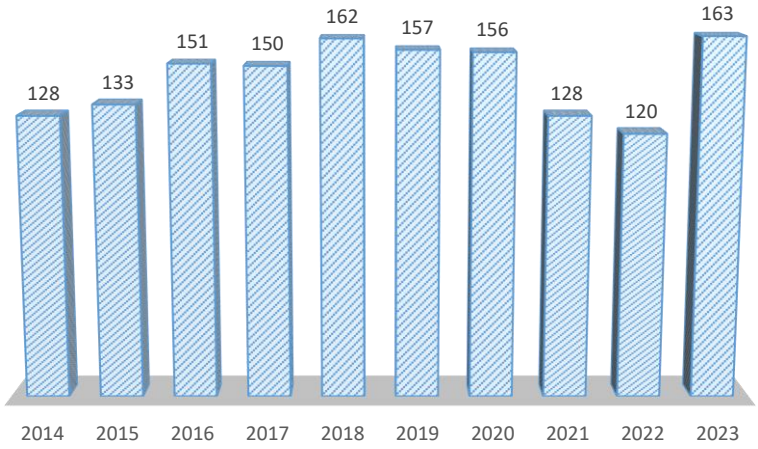

Figure 1. Research Trends

In the initial period (2014–2015), the number of publications remained relatively stable, indicating an early exploratory phase regarding the potential of AI in Human Resource Management (HRM). However, beginning in 2018, the number of publications increased sharply, driven by advancements in machine learning, predictive analytics, and automation in workforce management (Chatterjee et al., 2023). The Covid-19 pandemic also acted as a significant catalyst, accelerating AI adoption to support remote work systems and the digitalization of HR processes (Pereira et al., 2023).

The peak of research activity in 2023 demonstrates that the integration of AI into SHRM has become a mature research area, focusing on talent management optimization, data-driven performance evaluation, and sustainable green HRM practices (Choi et al., 2023). This aligns with the increasing organizational demand to achieve efficiency and innovation through the utilization of AI technologies.

Figure 2 reveals that research on AI in SHRM was dominated by peer-reviewed journal articles, followed by conference papers, books, and review articles. The significant contribution of journal articles indicates that this research has become a prominent academic topic, gaining widespread attention within the scientific community (Nguyen et al., 2023). This corresponds with the growing need for both empirical and conceptual studies exploring AI's role in enhancing organizational efficiency and productivity through a strategic approach to human resource management (Chatterjee et al., 2023).

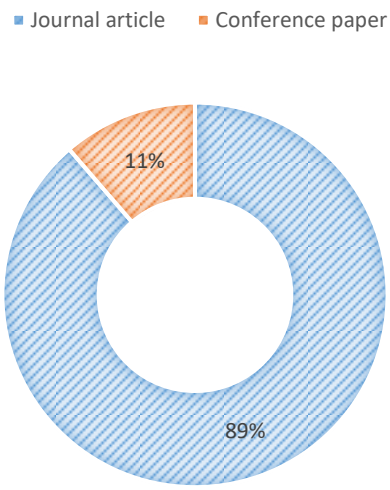

Figure 2. Types of Publications

Conference papers also highlight the significant role of academic forums as platforms for sharing preliminary findings and discussing trends in AI within Human Resource Management (HRM). According to Zhang et al. (2022), conferences play a crucial role in accelerating the development of AI research as they facilitate direct collaboration and discussions between academics and practitioners. Meanwhile, contributions from books and review articles provide comprehensive overviews of theories and practices related to AI in SHRM, enriching conceptual understanding and laying a strong foundation for future research (Choi et al., 2023). Overall, the variety of publication types reflects the dynamic development of the research field, combining empirical, theoretical, and practical studies to advance AI implementation in SHRM and its impact on organizational performance (Pereira et al., 2023).

Figure 3 shows that research on AI in SHRM is predominantly published in leading journals such as the Journal of Business Research, Human Resource Management Review, and Computers in Human Behavior. The Journal of Business Research stands out as the top publication source, making significant contributions by publishing empirical and conceptual studies that explore the impact of AI integration on HRM effectiveness and the enhancement of organizational performance.

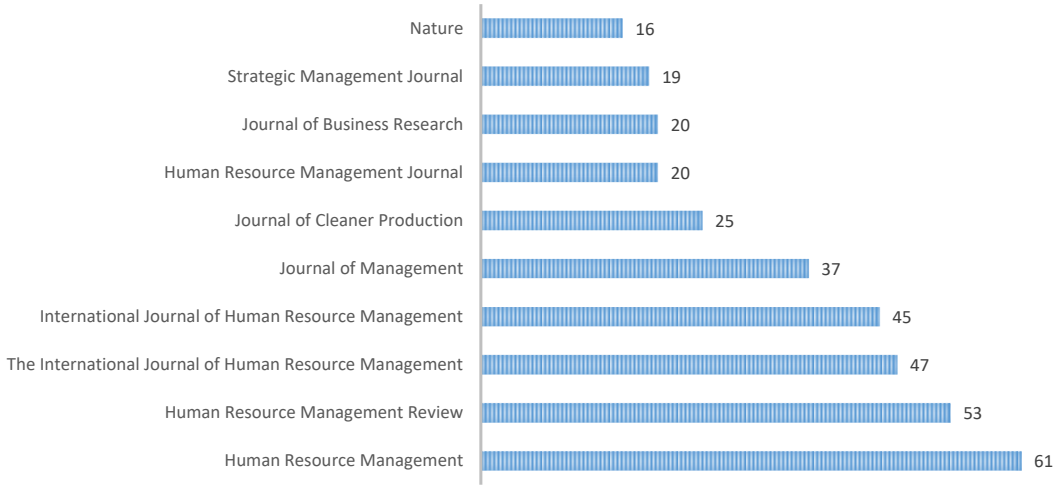

Figure 3. Top 10 Publication Sources

Additionally, Human Resource Management Review holds a significant position in providing theoretical frameworks and literature reviews related to the integration of AI technology to support strategic decision-making in human resource management

(Chatterjee et al., 2023). Other sources, such as Computers in Human Behavior, focus on organizational behavior aspects and explore how AI technology can shape employee engagement and work effectiveness (Pereira et al., 2023).

The dominance of highly reputable publication sources underscores the credibility of this research and highlights that the topic of AI in SHRM has garnered substantial attention from both academics and practitioners. This trend supports the argument by Zhang et al. (2022), who emphasized that the development of AI in HRM requires an interdisciplinary approach combining technology, management, and organizational behavior.

Table 2 reveals that the articles with the highest citation counts stem from research focusing on the role of AI in driving the transformation of SHRM and enhancing organizational performance. Articles with the highest citations demonstrate their relevance and influence in advancing contemporary research. One of the most cited studies is by Nguyen et al. (2023), which examines the impact of AI on operational efficiency, data-driven decision-making, and workforce skill development.

Table 2. Top 10 Most Cited Articles

Cites	Authors	Title	Year	Source
29650	T. Chen	XGBoost: A scalable tree boosting system	2016	Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining
24456	S. Ioffe	Batch normalization: Accelerating deep network training by reducing internal covariate shift	2015	32nd International Conference on Machine Learning, ICML 2015
21469	V. Mnih	Human-level control through deep reinforcement learning	2015	Nature
12319	D. Silver	Mastering the game of Go with deep neural networks and tree search	2016	Nature

Cites	Authors	Title	Year	Source
10976	M.T. Ribeiro	"Why should i trust you?" Explaining the predictions of any classifier	2016	Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining
10839	M.D. Zeiler	Visualizing and understanding convolutional networks	2014	Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)
10178	H. Brendan McMahan	Communication-efficient learning of deep networks from decentralized data	2017	Proceedings of the 20th International Conference on Artificial Intelligence and Statistics, AISTATS 2017
9078	C. Szegedy	Inception-v4, inception-ResNet and the impact of residual connections on learning	2017	31st AAAI Conference on Artificial Intelligence, AAAI 2017
8787	A. Esteva	Dermatologist-level classification of skin cancer with deep neural networks	2017	Nature
7761	I. Goodfellow	Generative adversarial networks	2020	Communications of the ACM

The study by Chatterjee et al. (2023) has also received significant attention for its contribution to understanding how AI can enhance employee engagement and create more objective performance evaluations. Highly cited articles tend to combine strong theoretical and empirical approaches, providing in-depth insights into the implementation of AI in SHRM (Zhang et al., 2022). Furthermore, many of these highly cited articles address ethical and technical challenges in using AI within SHRM, such as algorithmic bias and data security (Choi et al., 2023).

The high citation rates of these articles indicate that research on AI in SHRM is a rapidly growing field with a significant impact on modern management practices. These studies serve as key references for understanding how AI can be optimized to achieve greater efficiency, innovation, and improved organizational performance (Pereira et al., 2023).

DISCUSSION

Network Visualization

Network visualization is a visualization method used to map relationships between concepts or keywords in research. In bibliometric studies, network visualization helps to understand the main topics, trends, and interconnections between concepts within a specific field (Donthu et al., 2021). By utilizing VOSviewer, research can analyze the network structure of frequently occurring keywords to identify current research patterns and future directions (Yulianto et al., 2023b).

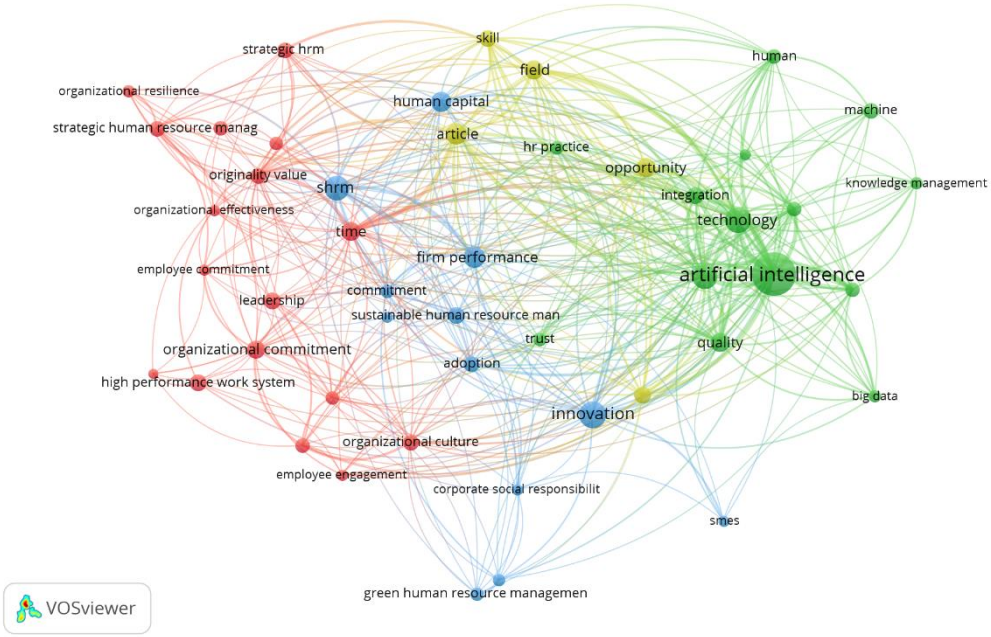

Figure 4. Network Visualization

In the network visualization, "Artificial Intelligence" emerges as the central keyword with a dominant node. It indicates that AI is the primary focus of research related to SHRM and organizational performance (Nguyen et al., 2023). The strong connectivity between AI and other concepts such as technology, innovation, and decision-making highlights AI's crucial role in transforming human resource management practices.

The keyword "Strategic Human Resource Management" shows significant connectivity with "organizational performance", indicating that AI in SHRM focuses on enhancing organizational performance through more strategic human resource management (Zhang et al., 2022). This relationship reflects the research direction that positions organizational performance as the primary outcome of AI integration.

The keyword "technology" acts as a bridge between AI and HR management. Research by (Chatterjee et al., 2023) shows that technology enables organizations to implement AI in HR processes such as recruitment, performance management, and talent development. Technology serves as the fundamental foundation supporting digital transformation within SHRM (Yulianto & Iryani., 2024a).

The node "innovation" demonstrates strong connectivity with both AI and SHRM, signifying the role of innovation in enhancing HR management effectiveness. According to Choi et al. (2023), AI drives innovation by introducing data-driven evaluation methods, automating administrative tasks, and personalizing employee training. This contributes to improved productivity and efficiency (Yulianto & Iryani., 2024b).

The keyword "human capital" highlights the importance of developing human resources as organizational assets. AI supports skill enhancement among employees through data analysis and personalized training programs (Nguyen et al., 2023). This visualization reveals that focusing on human capital is a critical component of AI-driven SHRM strategies (Yulianto & Iryani., 2024c).

Concepts such as "sustainable human resource management" and "green human resource management" appear in the network, indicating sustainability trends in HR practices. According to (Pereira et al., 2023), AI contributes to environmentally friendly HR practices by digitizing administrative processes and reducing the use of physical resources like paper.

AI exhibits strong connectivity with "decision-making" and "efficiency", illustrating how this technology facilitates faster and more accurate decision-making in HR management. Through big data analysis and predictive algorithms, AI enables management to make evidence-based decisions instead of relying on intuition (Zhang et al., 2022). This significantly enhances organizational operational efficiency.

The keyword "organizational culture" suggests that implementing AI in SHRM requires an adaptive and innovative organizational culture. According to Chatterjee et al. (2023), organizations must foster a culture that supports AI adoption to ensure successful integration and address resistance to technological change.

The concepts "big data" and "knowledge management" indicate AI's role in processing and managing large-scale employee data. AI helps identify workforce trends, map competencies, and design more effective HR strategies (Nguyen et al., 2023). With a data-driven approach, organizations can optimize knowledge utilization to support business growth.

The network visualization reveals that Artificial Intelligence is the central focus of research in the context of SHRM and organizational performance. The strong interconnections between AI, technology, innovation, human capital, and data-driven decision-making illustrate AI's strategic role in transforming HR practices. Additionally, research trends emphasize sustainability and the integration of AI into organizational culture.

Overlay Visualization

Overlay visualization is a visualization method that displays the temporal distribution of keywords or research topics using specific color schemes to indicate their appearance periods (Iryani. & Yulianto, 2023). Recent keywords are represented with lighter colors (yellow), while older keywords are depicted with darker colors (blue or green) (Donthu et al., 2021). In this study, overlay visualization is utilized to examine the development of research trends related to AI in SHRM and its relationship with organizational performance.

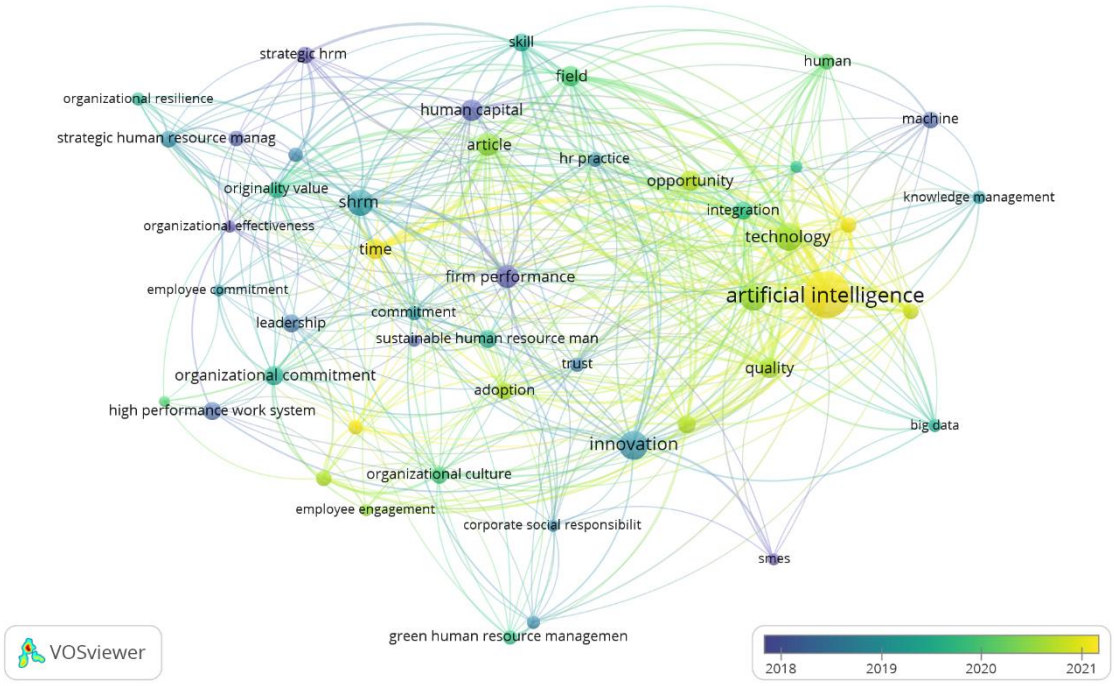

Figure 5. Overlay Visualization

The keyword "artificial intelligence" appears in bright yellow, indicating that AI is a primary focus of recent research in SHRM (Nguyen et al., 2023). This trend underscores that integrating AI into SHRM has become a central concern, particularly for improving organizational efficiency and performance.

The keyword "technology" is also displayed in bright colors, signifying its connection to current research. Zhang et al. (2022) state that AI technologies facilitate the adoption of data-driven systems in SHRM for processes such as recruitment, performance management, and predictive analytics. Technology remains a key enabler in implementing AI across various strategic HR processes.

The keyword "innovation" occupies a central position in the network with a brighter color, reinforcing its increasing relevance in HR practices. Research by Chatterjee et al. (2023) highlights that AI drives innovation by automating administrative tasks, personalizing employee development, and enhancing employee productivity.

The concept of "organizational performance" appears with significant connectivity to AI and SHRM. This indicates that improving organizational performance is a primary goal of integrating AI into SHRM (Nguyen et al., 2023). Recent studies have

demonstrated that AI contributes to data-driven solutions that enhance workforce productivity and operational efficiency.

The keywords "human capital" and "skill" are displayed in light yellow-green, reflecting recent trends emphasizing workforce development. Pereira et al. (2023) emphasize that AI assists in mapping employee skills, designing targeted training programs, and preparing the workforce to meet the challenges of Industry 4.0.

The keywords "sustainable human resource management" and "green human resource management" highlight the increasing relevance of sustainability issues in SHRM. AI contributes to environmentally friendly practices by enabling digitization, reducing resource consumption, and supporting sustainable policies (Choi et al., 2023). This trend aligns with organizational efforts to support sustainable development goals.

The concepts of "big data" and "knowledge management", represented in bright colors, affirm AI's role in processing large-scale data for strategic decision-making. According to Zhang et al. (2022), AI leverages big data to analyze workforce trends, identify future skill needs, and optimize workforce planning.

The keywords "employee engagement" and "organizational commitment" emerge as topics connected to AI in the overlay visualization. Research by Chatterjee et al. (2023) shows that AI enhances employee engagement through more transparent and objective data-driven evaluations, fostering employee motivation and loyalty.

The keyword "decision-making" demonstrates strong connections with AI in recent research. According to Nguyen et al. (2023), AI supports faster and more accurate decision-making through data-driven predictive analytics. This enables organizations to design HR strategies that are more effective and aligned with long-term business objectives (Yulianto., 2023).

The overlay visualization reveals that AI is the central focus of current research within the context of SHRM and organizational performance. Research trends revolve around the integration of AI with technology, innovation, human capital, and sustainability. AI has substantial potential to support data-driven decision-making, develop workforce skills, and enhance employee productivity and engagement. This

visualization provides a clear picture of future research directions that are increasingly strategic and innovative.

Density Visualization

Density visualization is used to illustrate the intensity and frequency of keyword occurrences within a research field (Yulianto et al., 2023a). Keywords with high frequency are displayed in bright yellow, whereas those with lower frequency are shown in green or blue (Donthu et al., 2021). In the context of this study, density visualization provides a comprehensive overview of the primary focus and research topics related to the integration of AI in SHRM.

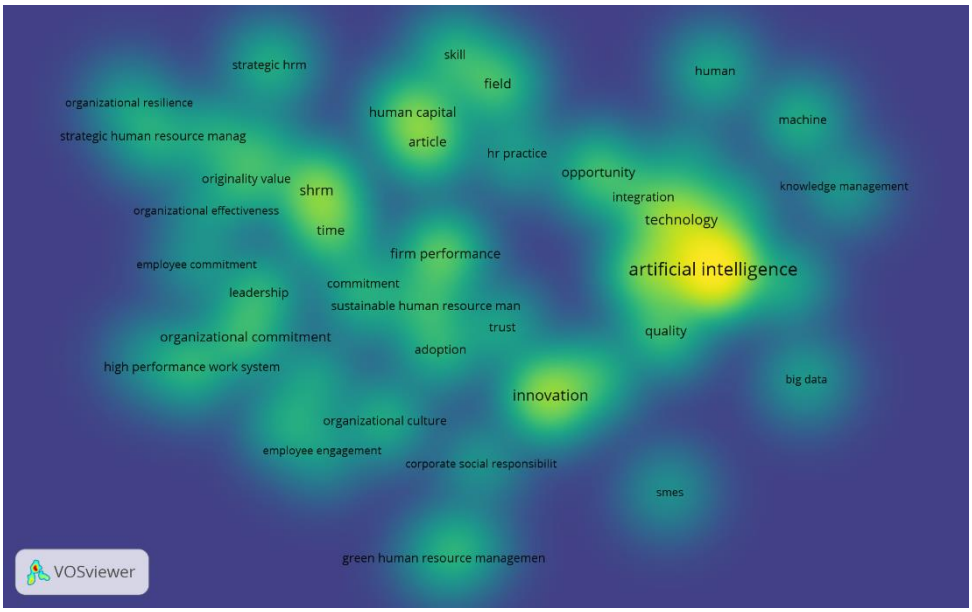

Figure 6. Density Visualization

The keyword "Artificial Intelligence" occupies a central position with a bright yellow color, indicating AI's dominance in recent research related to SHRM. According to Nguyen et al. (2023), the integration of AI in HRM significantly contributes to increased productivity, data-driven decision-making, and operational efficiency within organizations. It reflects the rapid development of AI across various strategic management processes (Yulianto., 2023).

The keyword "innovation", displayed with high density, highlights AI's significant role in driving innovation within the HR field. Research by Zhang et al. (2022) confirms

that AI enables novel approaches to workforce management, such as personalized training programs, data-driven performance evaluation, and the automation of administrative tasks. These innovations are pivotal to enhancing overall organizational performance.

The keywords "technology" and "decision-making" appear with high density, showing that AI technologies are closely linked to strategic decision-making in SHRM. According to Chatterjee et al. (2023), AI allows organizations to analyze big data, providing accurate and timely recommendations. This supports more precise and efficient decision-making processes.

The keywords "human capital" and "skill" appear in areas of high density, reflecting current research's emphasis on workforce skill development through AI. Pereira et al. (2023) state that AI assists organizations in mapping employee skill needs, identifying competency gaps, and designing relevant training programs. Consequently, AI contributes to improving the quality of human resources.

The keyword "organizational performance" also exhibits high density, reaffirming that the primary goal of AI integration in SHRM is to enhance organizational performance. Choi et al. (2023) demonstrate that AI improves operational efficiency, reduces human errors, and supports more strategic talent management. Better organizational performance is a direct outcome of AI implementation in HRM.

The concepts "sustainable human resource management" and "green human resource management" appear with notable density, reflecting research trends related to sustainability. According to Zhang et al. (2022), AI supports more sustainable HR practices by reducing physical resource consumption, improving energy efficiency, and digitizing administrative processes.

The keywords "big data" and "knowledge management" underscore AI's contribution to managing large-scale data to support HR decision-making. Nguyen et al. (2023) highlight that AI leverages big data analytics to understand workforce trends, predict future demands, and optimize more effective HR development strategies.

The keywords "employee engagement" and "organizational commitment" appear in high-density areas, emphasizing AI's role in enhancing employee engagement. Chatterjee et al. (2023) highlight that AI enables more objective and transparent performance evaluations, fostering employee motivation and building commitment toward organizational goals.

The keyword "organizational culture" signifies that the successful implementation of AI in SHRM depends on an organizational culture that supports innovation and technology. Pereira et al. (2023) note that organizations need to create adaptive work environments to ensure effective AI integration and enhance organizational performance.

The density visualization reveals that "Artificial Intelligence" is the dominant topic in current research related to SHRM, with strong connections to innovation, technology, human capital development, and organizational performance. This trend underscores AI's crucial role in supporting strategic decision-making, improving efficiency, and creating more sustainable HR practices. The visualization also highlights opportunities for future research on AI integration in fostering innovative organizational cultures.

CONCLUSION

This study aims to explore the integration of AI into SHRM using a bibliometric approach to understand its contribution to improving organizational performance. The analysis results indicate that AI plays a significant role in transforming HR practices through the automation of administrative processes, data-driven decision-making, personalized employee development, and optimization of talent management. The direct impact of integrating this technology includes increased operational efficiency and employee productivity, enabling organizations to adapt to increasingly complex and competitive business demands.

Furthermore, the bibliometric results, analyzed through network visualization, overlay visualization, and density visualization, identify recent research trends focusing on technology, innovation, employee engagement, and sustainability in HR management. With the growing volume of research and contributions from high-quality publication sources, AI is regarded as a strategic element in creating High-Performance Work Systems (HPWS) that are oriented toward organizational performance growth.

LIMITATION

The primary limitation of this study lies in its reliance on bibliometric data sourced from limited databases, such as Scopus and Crossref. This constraint may introduce bias in the selection of articles included in the analysis, as publications from non-indexed

journals or alternative databases might not be covered. This could affect the analysis results and reduce the comprehensiveness of the study.

Furthermore, the bibliometric approach employed is strictly quantitative, focusing on publication trends, keyword frequency, and research networks. This study does not delve into the substantive content of the analyzed articles, such as methodologies, empirical findings, or practical implications. This limitation restricts a deeper understanding of how AI was specifically implemented in SHRM across various organizational contexts.

Future research was recommended to integrate qualitative and quantitative approaches to provide a more comprehensive understanding of AI integration in SHRM. Researchers can conduct systematic reviews to explore the methodologies, findings, and challenges of AI implementation in HR practices across industries. Additionally, empirical case studies in real organizations will help elucidate the direct impact of AI on organizational performance in a more concrete manner.

For general readers and practitioners, this study emphasizes the importance of fostering digital literacy and organizational readiness to adopt AI. Organizations need to invest in employee training, build a culture of innovation, and ensure transparency and ethical considerations in AI usage. With a strategic approach, AI can be optimally leveraged to drive growth, efficiency, and competitive advantage in the digital era.

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