Aug 10th, 12:00 AM

Artificial Intelligence in Human Resources Management: A Scoping Review

Daniel Gelinas
Concordia University, daniel.gelinas@mail.concordia.ca

Arman Sadreddin
Concordia University, arman.sadreddin@concordia.ca

Rustam Vahidov
Concordia University, rustam.vahidov@concordia.ca

Follow this and additional works at: https://aisel.aisnet.org/amcis2022

Artificial Intelligence in Human Resources Management: A Scoping Review

Completed Research

Daniel Gélinas
Concordia University
daniel.gelinas@mail.concordia.ca

Arman Sadreddin
Concordia University
arman.sadreddin@concordia.ca

Rustam Vahidov
Concordia University
rustam.vahidov@concordia.ca

Abstract

There is a growing interest in the application of Artificial Intelligence in Human Resources Management, but there remains a substantial gap between the promise of AI and its practical application in organizations. In order to guide future research, a scoping review was conducted: 85 articles were identified and classified based on the 6 dimensions of the human resource Life Cycle. A seventh dimension – Legal and Ethical Issues – was also identified and integrated into the existing HR Life Cycle framework. Implications and future research opportunities are discussed.

Keywords

Human resources management, artificial intelligence, human resource life cycle, scoping review.

Introduction

Insights into employees are the greatest competitive advantage to organizations in uncertain times (DiClaudio 2019). In fact, Davenport (2019) asserts that Human Resources Management (HRM) has become the most analytics-driven function in organizations. Organizations around the world are continuously seeking new analytical tools and new ways to improve their decision-making capabilities: one such tool is artificial intelligence (AI) (Johnson et al. 2021). Gikopoulos (2019) tells us that AI is everywhere, from self-driving cars to customer-service chatbots; within organizations, AI is used in a wide range of functions, including operations, finance, marketing, HRM and beyond. Within HRM, AI is already being used in organizations to make hiring decisions (Tambe et al. 2019), to train employees (Vrontis et al. 2021), and to monitor employee performance (Bales and Stone 2020). In fact, the Society of Human Resource Management (SHRM) has identified AI as one of the key drivers of HRM in the future (Johnson et al. 2021). The increased interest in AI in HRM is not limited to practitioners: an increasing number of researchers are turning their attention towards the topic (Vrontis et al. 2021). These researchers do not originate from within the discipline of HRM, but also from Information Systems (IS), management, and other fields. Nevertheless, despite this increased interest, significant areas remain unexplored (Vrontis et al. 2021).

This study contributes to the literature in several ways. First, a scoping review was conducted in order to provide an indication of the size and nature of the available literature on the topic of AI in HRM. Scoping reviews differ from other types of reviews – such as narrative and descriptive reviews – by focusing on the breadth of the literature rather than its depth, with a view to be as comprehensive as possible (Paré et al. 2015). As a result of this scoping review, 85 articles were identified and classified in consideration of the 6 dimensions of the HR Life Cycle, which closely mirror the HR functions that exist in many organizations (Jia et al. 2018). Second, a seventh dimension – Legal and Ethical Issues – was identified and integrated into the existing HR Life Cycle framework. Finally, implications for research and for practice are discussed.

Background

Artificial Intelligence was defined in 1950s as "making a machine behave in ways that would be called intelligent if a human were so behaving" (McCarthy et al. 1955, p. 1, cited in Pillai and Sivathanu 2020). Benbya et al. (2021) assert that AI is actually a broader category of technologies, and the authors provide examples of practical applications, which range from analyses on big data (machine learning) to self-driving cars (deep learning) to automating factory tasks (robots).

In support of Davenport's (2019) claim that HRM has become the most analytics-driven function in organizations, there is a growing interest in the application of AI in HRM, both from researchers and practitioners (Vrontis et al. 2021). In particular, AI's ability to process high volumes of data (Vrontis et al. 2021), along with its ability to use machine leaning to learn from past data to predict future outcomes (Benbya et al. 2021; Tambe et al. 2019), are of interest to HR practitioners. Tambe et al. (2021) present a life cycle for AI-supported HRM, which includes four phases: operations, data generation, machine learning, and decision-making. The first phase, operations, consists of the HR tasks performed by the organization. The second phase, data generation, consists of extracting the data produced by the various HR operations. The third phase, machine learning, consists of using the data generated to train the AI. The final phase, decision-making, consists of deriving insights from the AI model to make decisions related to HR operations, which in turn begins the cycle again (Tambe et al. 2019). As each cycle generates more data for machine learning, the AI model becomes more detailed, allowing further insights to be derived.

However, there remains a substantial gap between the promise of AI and the practical application of AI in organizations (Tambe et al. 2019). In fact, Tambe et al. (2019) identified four challenges related to the adoption of AI in HRM:

- Many HR phenomena are more complex than in other business disciplines. For example, the characteristics of a "good employee" are difficult to quantify and may vary from one organization to another.
- Many HR outcomes result in small (or non-existent) data sets with which to train a machine learning AI. For example, dismissals are relatively rare events, so it is unlikely that an organization can collect enough data for machine learning.
- Many HR outcomes must comply with legal and ethical guidelines, which add constraints on the abilities of AI to make decisions.
- Many HR decisions affect employees, either individually or as a group, such that the inscrutable nature of AI decision-making can often cause dissatisfaction with the outcome.

These four challenges remind us that the application of AI in HRM depends on more than just the technology itself: it is also necessary to consider the needs and context of HRM. As a cautionary tale, Tambe et al. (2019) tell us that, in 2018, Amazon discovered that the algorithm the organization used for hiring decisions was biased against female applicants, due to the data that had been used to train the AI. From a technological perspective, Amazon's AI might have been considered successful, but from an HRM perspective it was a failure because it did not comply with legal and ethical guidelines.

Similarly, another challenge facing the application of AI in HRM is the varied nature of HR operations – recruitment, selection, onboarding, training, performance management, compensation management, etc. – all of which have their own needs (Tambe et al. 2019). In addition, none of these operations exists in a vacuum: they are all part of the HR Life Cycle (Tambe et al. 2019). Following Jia et al. (2018), this study adopts a version of the HR Life Cycle consisting of 6 dimensions, which closely mirror the HR functions that exist in many organizations. The 6 dimensions are: 1) Strategic Planning, 2) Recruitment and Deployment, 3) Training and Development, 4) Performance Management, 5) Compensation Management, and 6) Human Relations Management.

These 6 dimensions form a cycle, with the outputs from one forming the inputs for the next. While numerous papers have addressed one or more of the 6 dimensions of the HR Life Cycle, only a few have addressed the concept of the HR Life Cycle itself (e.g., Tambe et al. 2019; Jia et al. 2018). In order to guide future research towards a holistic view of AI in HRM, a scoping review of the literature is needed (Paré et al. 2015); to the author's knowledge, no review has been published that categorizes the existing literature based on the 6 dimensions of the HR Life Cycle. This paper aims to fill the gap in the literature by answering the following research question:

RQ. How has the existing literature on AI in HRM addressed the 6 dimensions of the HR Life Cycle?

Methodology

In order to answer the research question, a scoping literature review was conducted. In consideration that the topic is inherently interdisciplinary, searches were first conducted in the leading IS journals, as well as the leading HRM and Management journals, as recommended by Webster & Watson (2002). In addition, searches were conducted in three databases of business journals: Business Source Complete, ProQuest, and ABI/INFORM Global. The journals and databases were searched without any restrictions on publication date, to avoid arbitrarily limiting the results. In addition, the results from the databases were limited to "English" results.

Using the standard Boolean operations "OR" and "AND" allowed for the use of a single search string:

> *(human resource OR personnel OR HR OR SHRM OR management) AND (artificial intelligence OR AI OR machine learning OR ML OR algorithm OR algorithmic)*

In order to ensure comprehensiveness, this string was first used to search the full texts of the selected journals and databases. However, for the three databases, this resulted in an excessive number of matches; in order to reduce the results to a practical number, the same search string was also applied to the abstracts and keywords.

These search parameters initially returned 3,958 matches. Therefore, a multi-step process was employed to select the articles for inclusion in the study. In the first step, duplicate results were removed, along with results that were not articles. In addition, it was discovered that the search parameters returned a large number of matches to medical journals, where HR = "heart rate" and ML = "milliliters"; these journals were removed from consideration based on the journal title. This first step excluded 927 articles from consideration.

Next, the abstracts for the remaining articles were read and evaluated for inclusion. To be included at this step, an article needed to discuss the use of AI in HRM: articles that mention HR in passing (e.g., because the study collected data from the HR Department of an organization) or that used AI in the analysis of research data (i.e., where AI was a tool used by researchers, not the focus of the study) were excluded. This step excluded 2,886 articles from consideration. The full text of the remaining 145 articles were then evaluated for inclusion; 51 articles were retained after this step.

Finally, as recommended by Webster & Watson (2002), a backward search was conducted by reviewing the reference lists of the 51 articles, while a forward search was conducted by entering each of the articles in Google Scholar and examining the "Cited by" data. The backward and forward searches identified 77 potentially relevant articles, each of which was evaluated following the same process. Of the 77 articles, 34 were retained, for a total of 85 articles[1].

Results

Of the 85 articles retained, 6 were from the leading IS journals, while 11 were from the leading HRM and Management journals; the remaining 68 articles were from other journals. Nine of the articles were published before 2018, with the remainder being published between 2018 and 2021; the increased interest in the topic since 2018 justifies the need for a scoping review, both to address the existing literature and to guide future research opportunities.

Human Resources Dimensions

Once the 85 articles were selected, each was read thoroughly and coded by the first author based on the dimension(s) of the HR Life Cycle included. Once this coding process was completed, it was found that all 6 dimensions were represented in the existing literature to varying degrees. Only one paper, Jia et al. (2018), which explicitly discussed the HR Life Cycle, included a discussion of all 6 dimensions. In addition, a

---

[1] Due to length restrictions, the References section only lists the articles referenced directly in this paper; the full list of 85 articles is available upon request.

seventh dimension was identified that could not be matched to one of the 6 dimensions of the HR Life Cycle: legal and ethical issues related to the use of AI in HRM. Since legal and ethical concerns can be present at any point in the HR Life Cycle, this seventh dimension is conceptualized as a contextual dimension surrounding the HR Life Cycle as a whole.

Of the 85 articles, 53 discussed a single dimension, while the remainder discussed more than one dimension. See Table 1 for the number of articles discussing each dimension; each dimension will be discussed in detail in the following sections.

HR Dimensions	# of Articles	% of Articles
Strategic Planning	13	15.3%
Recruitment and Deployment	61	71.8%
Training and Development	23	27.1%
Performance Management	23	27.1%
Compensation Management	10	11.8%
Human Relations Management	8	9.4%
Legal and Ethical Issues	15	17.6%

Table 1. Distribution of HR Dimensions[2]

Strategic Planning

The strategic planning dimension includes activities related to establishing the HR strategy and vision for the organization, determining present and future personnel needs, as well as providing direction to the other HR functions (Jia et al. 2018). Articles that discuss the use of AI in human resources strategic planning focus on AI's abilities related to cognition (e.g., Chang 2020) and the analysis of large and sometimes unstructured datasets (e.g., DiClaudio 2019).

Since strategic planning is the starting point of the HR Life Cycle (Jia et al. 2018), these activities draw on data from multiple sources and require complex analyses. AI can be used for technologies such as data mining (Jia et al. 2018) and machine learning (Verma and Jha 2020) allow organizations to make better use of their HR data in decision-making. DiClaudio (2019) suggests that one of the major advantages to using AI in strategic planning is that it allows the HR function to be proactive rather than reactive, which was considerably more difficult when the analysis was done without AI support. In turn, this allows organizations to better synthesize HR data with data from other functions (e.g. finance, operations), in order to prepare more detailed strategic plans (Nawaz 2020b) and ensure alignment between the HR strategy and the overall business strategy (Verma and Jha 2020).

The use of expert systems for strategic planning has also been explored in the literature. Lawler and Elliot (1996) examine the use of an expert system in the job evaluation process, hypothesizing that the use of an expert system will increase the accuracy and efficiency of the job evaluation process. In another article, Cabrera and Bonache (1999) present a theoretical framework for the development of an expert system that could draw on data from a variety of sources, including HR data, in order to provide guidance to an organization seeking to develop a "strategic" organizational culture.

Chang (2020) developed a new model – the AI in Personnel Management (APM) Model – which proposes a link between the use of AI in HRM with organizational outcomes such as an increase in organizational performance, an increase in employee well-being, and a decrease in the employee turnover rate. Similarly, Malik et al. (2020) examined the use of AI-mediated HRM practices and found that the use of AI in strategic planning has several benefits to the organization, including increased job satisfaction, increased organizational commitment, and reduced turnover intention among employees, which in turn results in improved cost-effectiveness in the organization.

Recruitment and Deployment

The recruitment and deployment dimension includes activities related to attracting and selecting external candidates, onboarding new hires, and identifying internal candidates for promotions and transfers (Jia et

---

[2] Numbers exceed 100% due to some articles discussing multiple dimensions.

al. 2018). In fact, the literature covers the full range of recruitment and deployment activities; in most cases, time-savings is the primary benefit of using AI. Verma and Jha (2020) propose using AI to evaluate operational needs to prioritize recruitment activities based on the most critical needs at the time. Before candidates can be screened and selected, they must first be identified (Tambe et al. 2019): Albert (2019) proposes using AI to search multiple online databases to determine the best sources of candidates, while Johnson et al. (2021) suggest that AI can help recruiters enlarge the applicant pool by identifying and selectively targeting potential candidates that meet the criteria for the job. In addition, AI can be used to search through databases of old candidates to determine if any might be suitable for the current opening (Bhattacharjee and Saha 2020).

Once the candidates have been identified, AI can be used to screen their applications and narrow down the list of suitable candidates, thereby saving the recruiter significant amounts of time (Garg et al. 2021). The AI could also autonomously search through an applicant database by searching for keywords found in the job posting (Kulkarni and Xiangdong 2019). Chatbots using natural language processing could then be used as automated recruiters, contacting the selected candidates, interviewing them, and providing a recommendation back to the human recruiter (Nawaz and Gomes 2019). Alternately, interviews could be conducted by the human recruiter, with AI-enabled facial recognition used to detect and evaluate candidates' non-verbal cues (Nawaz 2020a). AI could even use pattern recognition to select the final candidate directly, without human intervention (Kulkarni and Xiangdong 2019).

Training and Development

The training and development dimension includes activities related to improving the knowledge, skills, and abilities of employees for their current job (training), as well as preparing them for future jobs (development) (Jia et al. 2018). Articles that discuss the use of AI in training and development have examined two broad categories: the use of AI to analyze training needs, and the use of AI to deliver training. In the first category, researchers have considered that the skills and competencies needed by organizations are dynamic and always evolving (Bhardwaj 2020). The use of AI has been identified as a valuable tool for organizations to analyze employee performance, identify performance gaps that can be addressed through training and development, and measure the resulting performance gains (Tambe et al. 2019). It has also been proposed that AI can ensure alignment between employee skills and the organization's business strategy, through continuous monitoring (Verma and Jha 2020).

In the second category, researches have investigated the use of AI in delivering training. For example, Vrontis el al. (2021) discuss the use of AI-powered training simulations, which can allow employees to better understand how the skills they are developing can be employed in a variety of real-world situations. Similarly, Luo et al. (2021) explore the use of AI coaches for sales agents. In this case, the AI can be trained on data from past sales calls and learn what tactics do and do not work. Then, through monitoring of sales calls, the AI can provide immediate suggestions and coaching to the sales agents to improve their success.

Interestingly, it is AI's own ability to learn that allows it to be a valuable tool in training employees: AI trainers can monitor and learn about the trainees during the training session, allowing the AI to adapt the training approach – or even the training material itself – to the needs of the trainees (Vrontis et al. 2021). Similarly, training delivered by AI trainers can be available on-demand (Yawalkar 2019), be more easily personalized to the needs of individual trainees (Premnath and Arun 2020) and provide immediate feedback and guidance (Malik and Mishra 2020).

Performance Management

The performance management dimension includes the monitoring of employees as they complete their tasks, as well as the evaluation of their performance on the job (Jia et al. 2018). Articles that discuss the use of AI in performance management can be divided into two groups: articles that discuss the benefits of using AI in performance management, and articles that discuss the use of AI to electronically monitor employee performance. In fact, Buck and Morrow (2018) state that performance management is the HR dimension that has seen the biggest impact from AI.

As part of the performance management planning process, AI can be used to review past performance data, along with any other relevant data from other sources, to set performance targets and key performance indicators (KPIs) for the coming year, such as revenue targets, cost-saving measures, or individualized

productivity goals (Kulkarni 2021). Subsequently, AI can be used to monitor these targets and KPIs throughout the year, providing immediate, detailed, and relevant feedback to employees and managers (Jia et al. 2018). In addition, since AI is perceived as objective and unbiased – though potentially less transparent – than human evaluations, the use of AI might result in greater satisfaction with the performance evaluation results (Bhardwaj 2020).

In order to evaluate performance, employees must be monitored. While traditionally it has been the role of the manager to monitor employee performance, there is growing interest in the use of AI-enabled electronic monitoring (Bales and Stone 2020). Ravid et al. (2020) developed a typology of electronic performance monitoring characteristics, which includes four elements: purpose, invasiveness, synchronicity, and transparency. In fact, the authors recognized that electronic performance monitoring is not limited to performance management, but is also useful for training and development purposes, as well as administrative and safety-related uses (Ravid et al. 2020).

Compensation Management

The compensation management dimension includes motivating employees to achieve the organization's goals, rewarding employees for their performance, and retaining employees (Jia et al. 2018). Articles that discuss the use of AI in compensation management focus on machine learning (e.g., Tambe et al. 2019), automation (e.g., Kulkarni 2021), and AI's ability to recognize patterns in large data sets (e.g., Zahidi 2020).

Jia et al. (2018) propose the use of neural networks to develop a fair salary evaluation system. This proposal is echoed by Ahmed (2018), who suggests that AI can be used to monitor employee compensation for discrimination based on prohibited factors, such as gender. Similarly, Verma and Jha (2020) suggest that AI can be used to provide increased transparency into the compensation process, thereby resulting increased compensation satisfaction among employees.

Variable compensation and benefits are also discussed in the literature. For example, Zahidi (2020) suggests using AI's pattern recognition ability to develop a customized, flexible, and quick system for rewarding employees for their performance; Nawaz (2020b) also proposes using AI to better reward employees based on their contributions, through transparent and equitable compensation practices. On the benefits side, Tambe et al. (2019) propose that AI can be used to determine which benefits are most valued by employees to ensure the benefit plan meets their needs, while also assisting employees in making benefit-related decisions.

Human Relations Management

The human relations management dimension includes managing the employer-employee relationship, ensuring compliance with applicable employment legislation and organizational policies, and managing the employer-union relationship (in unionized environments) (Jia et al. 2018). The dimension of human relations management is the least represented in the literature, yet several potentially important uses of AI have been raised. For example, Nagar and Saxena (2020) propose that AI can be used to monitor and improve the working environment, which in turn would improve employee engagement.

Similarly, Nawaz (2020b) suggests that AI can help to ensure that the organization remains in compliance with applicable legislation, as well as that managers and employees comply with relevant organizational policies. In addition, it has been suggested that AI can be used to collect and analyze data for activities such as collective bargaining negotiations (Nawaz 2020b), or litigation, such as employee disputes or grievances (Ahmed 2018).

Legal and Ethical Issues

Unlike the previous six dimensions, which are phases in the HR Life Cycle, the final dimension – Legal and Ethical Issues – can be present at any point in the HR Life Cycle. Consequently, this seventh dimension is conceptualized as a contextual dimension surrounding the HR Life Cycle as a whole.

Bales and Stone (2020) express concerns that the use of AI in HRM may lead to discrimination against employees or job applicants. The authors point out that AI is a "black box" and it is not always clear what factors are being used by the AI to make a decision. In fact, Chamorro-Premuzic et al. (2019) remind us that the AI is only as good as the data that was used to train it: if the data is biased in any way, the AI may adopt

the same bias into its analysis. Chamorro-Premuzic et al. (2019) suggest that organizations ensure that the training data is unbiased before supplying it to the AI, though Dattner et al. (2019) go one step further by suggesting that the ability of AI to avoid legal discrimination is still unproven.

Other issues of concern include the invasion of privacy, such as by searching a candidate's social media (Dattner et al. 2019) or through monitoring employees' off-work activity (Bales and Stone 2020). In addition, Leicht-Deobald et al. (2019) found that the use of AI challenges employees' personal integrity and removes their independence due to the knowledge that they are being constantly monitored.

Interestingly, the use of AI in HRM is also seen as a way to overcome issues related to discrimination and bias. Since AI is perceived as objective, unbiased, efficient (Leicht-Deobald et al. 2019), its use may alleviate concerns related to human bias (Bales and Stone 2020) and increase perceptions of justice in the organization (Acikgoz et al. 2020).

Discussion

The findings of this scoping review reveal that AI has already been studied in relation to all of the major HR functions found in organizations. While the challenges identified by Tambe et al. (2019) cannot be ignored, the existing applications of AI in HRM demonstrate that AI remains the solution to many of the issues facing HRM (Vrontis et al. 2021). In particular, AI's ability to learn from past data to predict future outcomes (Benbya et al. 2021; Tambe et al. 2019), along with its ability to process high volumes of complex data (Vrontis et al. 2021), allow HR practitioners to derive insights that were previously impossible or impractical. Nevertheless, while the existing applications of AI in HRM are promising, cautionary tales such as the Amazon example discussed above demonstrate that additional research is required before AI can be fully integrated into HRM.

The findings of this scoping review also provide insights into the current state of research on the role of AI in HRM, which in turn can provide guidance for future research in this field. First, by classifying the existing literature based on the 6 dimensions of the HR Life Cycle, the findings of this study help researchers recognize that the various HR operations that exist in organizations do not exist in a vacuum. Each of the 6 dimensions of the HR Life Cycle has been addressed in the existing literature, but even the papers that discuss multiple dimensions rarely draw connections between them.

Second, this study identified a seventh dimension – Legal and Ethical Issues – and integrated it into the existing HR Life Cycle framework. This seventh dimension is already presented in the literature and is frequently discussed in association with one or more of the other dimensions. As such, researchers exploring any of the other dimensions of the HR Life Cycle should ensure they consider the relevant legal and ethical issues.

Third, once researchers recognize the value of the HR Life Cycle and its seven dimensions, it will become possible for them to build on the existing research by exploring the connections between dimensions. This is essential to address the gap between the promise of AI in HRM and its practical application in organizations that was identified by Tambe et al. (2019). By exploring how the use of AI for one dimension impacts the use of AI in next dimension in the HR Life Cycle, researchers will be better equipped to transform research into practical applications.

Fourth, a number of papers included in this study link the use of AI in HRM to desirable organizational outcomes, such as organizational performance (e.g., Chang 2020), cost-savings (e.g., Kulkarni 2021), and time-savings (e.g. Zahidi 2020). In addition, a number of papers also link the use of AI in HRM to HR-specific outcomes drawn from HR research, such as employee engagement (e.g., Tanasescu 2021), absenteeism (Lawrance 2021), turnover intention (Chang 2020), employee wellbeing (Chang 2020), perceptions of justice (Ackigoz 2020) and compensation satisfaction (Verma and Jha 2020). However, the link between AI and many of these HR-specific outcomes has not yet been studied empirically; there is considerable opportunity for researchers to examine the link between AI in HRM and HR-specific outcomes using the existing measures and models of HR research. In addition, researchers should explore other HR-specific outcomes to determine which ones can be positively influenced by the use of AI in HRM.

Finally, since the topic of AI in HRM is inherently interdisciplinary, it would be beneficial for researchers – especially those with an HR or Management background – to draw on existing IS theories to guide their research. Few of the papers included in this study specifically referenced IS theories; some of the IS theories

present in the literature on AI in HRM include the Technology Acceptance Model (TAM) (Singh et al. 2020), the Technology-Organization-Environment (TOE) Framework (Pillai and Sivathanu 2020; Pan et al. 2021), and the Task-Technology Fit (TTF) Model (Pillai and Sivathanu 2020). However, other major IS theories – such as Affordance Theory (Strong et al. 2014) – could be used to further explore the role of AI in HRM.

Conclusion

The objective of this study was to conduct a scoping review of the available literature on the topic of AI in HRM. This study identified 85 articles in IS, HRM, and Management journals, and classified them in consideration of the 6 dimensions of the HR Life Cycle. The study also identified a seventh dimension – Legal and Ethical Issues – and integrated it into the existing HR Life Cycle framework. Future work on the topic of AI in HRM should focus on the dimensions of the HR Life Cycle that are underrepresented in the literature, as well as on the connections between the dimensions. By including the HR Life Cycle in future work, researchers will help to ensure that their findings result in practical applications in organizations.

As with all research, it is important to acknowledge that this study has potential limitations. First, as with all reviews, it is possible that this study failed to identify all relevant articles, either due to technological limitations such as database availability or incorrectly coded metadata. While the authors feel confident that the majority of the relevant articles were identified, future research could expand on this study by using different search terms or databases. Second, the search was limited to articles published in English, so it is possible that relevant research published in other languages has been overlooked. Researchers who are proficient in other languages could expand on this study by considering articles published in non-English sources. Finally, since the articles were coded only by the first author, the author's subjective understanding of the HR dimensions may have influenced the coding of the articles and the interpretation of the findings. Future research could review the coding performed in this study to increase the reliability of the findings.

REFERENCES

Acikgoz, Y., Davison, K. H., Compagnone, M., and Laske, M. 2020. "Justice Perceptions of Artificial Intelligence in Selection," *International Journal of Selection and Assessment* (28:4), pp. 399–416.

Ahmed, O. 2018. "Artificial Intelligence in HR," *International Journal of Research and Analytical Reviews* (5:4), pp. 971–978.

Albert, E. T. 2019. "AI in Talent Acquisition: A Review of AI-Applications Used in Recruitment and Selection," *Strategic HR Review* (18:5), pp. 215–221.

Bales, R. A., and Stone, K. V. W. 2020. "The Invisible Web at Work- Artificial Intelligence and Electronic Surveillance in the Workplace," *Berkeley Journal of Employment & Labor Law* (41:1), pp. 1–62.

Benbya, H., Pachidi, S., and Jarvenpaa, S.L. 2021. "Special Issue Editorial: Artificial Intelligence in Organizations: Implications for Information Systems Research," *Journal of the Association for Information Systems* (22:2), pp. 281–303.

Bhardwaj, G., Singh, S. V., and Kumar, V. 2020. "An Empirical Study of Artificial Intelligence and Its Impact on Human Resource Functions," *2020 International Conference on Computation, Automation and Knowledge Management (ICCAKM)*, pp. 47–51.

Bhattacharjee, S., and Saha, S. 2020. "Impact of Artificial Intelligence on Human Resource Management Practices in Bangladesh", *Social Science Review* (37:1), pp. 117–133.

Buck, B., and Morrow, J. 2018. "AI, Performance Management and Engagement: Keeping Your Best Their Best," *Strategic HR Review* (17:5), pp. 261–262.

Cabrera, E. F., and Bonache, J. 1999. "An Expert HR System for Aligning Organizational Culture and Strategy," Human Resource Planning (22:1), pp. 51–60.

Chamorro-Premuzic, T., Polli, F., and Dattner, B. 2019. "Building Ethical AI for Talent Management," *Harvard Business Review Digital Articles*, pp. 2–5.

Chang, K. 2020. "Artificial Intelligence in Personnel Management: The Development of APM Model," *The Bottom Line* (33:4), pp. 377–388.

Dattner, B., Chamorro-Premuzic, T., Buchband, R., and Schettler, L. 2019. "The Legal and Ethical Implications of Using AI in Hiring," *Harvard Business Review Digital Articles*, pp. 2–7.

Davenport, T.H. 2019. "Is HR the Most Analytics-Driven Function?," *Harvard Business Review*, pp. 2–4.

DiClaudio, M. 2019. "People Analytics and the Rise of HR: How Data, Analytics and Emerging Technology Can Transform Human Resources (HR) into a Profit Center," *Strategic HR Review* (18:2), pp. 42–46.

Garg, A., Gaur, S., and Sharma, P. 2021. "A Review Paper: Role of Artificial Intelligence in Recruitment Process," *ANWESH: International Journal of Management & Information Technology* (6:1), pp. 33–37.

Gikopoulos, J. 2019. "Alongside, Not against: Balancing Man with Machine in the HR Function," *Strategic HR Review* (18:2), pp. 56–61.

Jia, Q., Guo, Y., Li, R., Li, Y., and Chen, Y. 2018. "A Conceptual Artificial Intelligence Application Framework in Human Resource Management," in *Proceedings of the International Conference on Electronic Business*, pp. 106–114.

Johnson, R. D., Stone, D. L., and Lukaszewski, K. M. 2021. "The Benefits of EHRM and AI for Talent Acquisition," *Journal of Tourism Futures* (7:1), pp. 40–52.

Kulkarni, S. 2021. "Use of Artificial Intelligence in Human Resource Management for Improved Service," *Embracing Change & Transformation-Breakthrough Innovation and Creativity*, p. 757–768.

Kulkarni, S. B. and Xiangdong Che. 2019. "Intelligent Software Tools for Recruiting," *Journal of International Technology & Information Management* (28:2), pp. 2–16.

Lawler, J. J., and Elliot, R. 1996. "Artificial Intelligence in HRM: An Experimental Study of an Expert System," *Journal of Management* (22:1), pp. 85–111.

Lawrance, N., Petrides, G., and Guerry, M.-A. 2021. "Predicting Employee Absenteeism for Cost Effective Interventions," *Decision Support Systems* (147), p. 1–10.

Leicht-Deobald, U., Busch, T., Schank, C., Weibel, A., Schafheitle, S., Wildhaber, I., and Kasper, G. 2019. "The Challenges of Algorithm-Based HR Decision-Making for Personal Integrity," *Journal of Business Ethics* (160:2), pp. 377–392.

Luo, X., Qin, M.S., Fang, F., and Qu, Z. 2021. "Artificial Intelligence Coaches for Sales Agents: Caveats and Solutions," *Journal of Marketing* (85:2), pp. 14–32.

Malik, A., Budhwar, P., Patel, C., and Srikanth, N. R. 2020. "May the Bots Be with You! Delivering HR Cost-Effectiveness and Individualised Employee Experiences in an MNE," *The International Journal of Human Resource Management*, pp. 1–31.

Malik, R., and Mishra, S. 2020. "Artificial Intelligence: Role in Workforce Training," *Mukt Shabd Journal* (IX:VI), pp. 2395–2414.

McCarthy, J., Minsky, M.L., Rochester, N. and Shannon, C.E. 1955. *A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence*.

Nagar, M., and Saxena, T. 2020. "HRM in the Era of Artificial Intelligence," *Innovation in Global Business Technology*, pp. 1–8.

Nawaz, N. 2020a. "Exploring Artificial Intelligence Applications in Human Resource Management," *Journal of Management Information and Decision Sciences* (23:5), pp. 552–563.

Nawaz, N. 2020b. "Artificial Intelligence Applications for Face Recognition in Recruitment Process," *Journal of Management Information & Decision Sciences* (23), pp. 499–509.

Nawaz, N., and Gomes, A. M. 2019. "Artificial Intelligence Chatbots Are New Recruiters," *International Journal of Advanced Computer Science and Applications* (10:9), pp. 1–5.

Pan, Y., Froese, F., Liu, N., Hu, Y., and Ye, M. 2021. "The Adoption of Artificial Intelligence in Employee Recruitment: The Influence of Contextual Factors," *The International Journal of Human Resource Management*, pp. 1–23.

Paré, G., Trudel, M-C., Jaana, M., and Kitsiou, S. 2015. "Synthesizing Information Systems Knowledge: A Typology of Literature," *Information & Management* (52), pp. 183–199.

Pillai, R., and Sivathanu, B. 2020. "Adoption of Artificial Intelligence (AI) for Talent Acquisition in IT/ITeS Organizations," *Benchmarking* (27:9), pp. 2599–2629.

Premnath, S. N., and Arun, A. 2020. "A Qualitative Study of Artificial Intelligence Application Framework in Human Resource Management," *Journal of Xi'an University of Architecture and Technology* (XI:XII), pp. 1193–1209.

Ravid, D. M., Tomczak, D. L., White, J. C., and Behrend, T. S. 2020. "EPM 20/20: A Review, Framework, and Research Agenda for Electronic Performance Monitoring," *Journal of Management* (46:1), pp. 100–126.

Singh, G., Bhardwaj, G., Singh, S. V., and Kumar, V. 2020. "Technology Acceptance Model to Assess Employee's Perception and Intention of Integration of Artificial Intelligence and Human Resource Management in IT Industry," *Technology* (29:3), pp. 11485–11490.

Strong, D.M., Volkoff, O., Johnson, S.A., Pelletier, L.R., Tulu, B., Bar-On, I., Trudel, J. and Garber, L., 2014. "A Theory of Organization-EHR Affordance Actualization," *Journal of the Association for Information Systems*, (15:2), pp. 53–85.

Tambe, P., Cappelli, P., and Yakubovich, V. 2019. "Artificial Intelligence in Human Resources Management: Challenges and a Path Forward," *California Management Review* (61:4), pp. 15–42.

Tănăsescu, L.-G. 2021. "Sentiment Analysis for Human Resources: A Comparative Analysis of Methods That Can Be Used Along with Modern Technologies," *Informatica Economica* (25:2), pp. 40–49.

Verma, S., and Jha, S. K. 2020. "Application of Artificial Intelligence in HR Processes," *Review of Management* (10:1/2), pp. 4–10.

Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., and Trichina, E. 2021. "Artificial Intelligence, Robotics, Advanced Technologies and Human Resource Management: A Systematic Review," *The International Journal of Human Resource Management*, pp. 1–30.

Webster, J., and Watson, R.T. 2002. "Analyzing the Past to Prepare for the Future: Writing a Literature Review," *MIS Quarterly* (26:2), pp. xiii-xxiii.

Yawalkar, M. V. V. 2019. "A Study of Artificial Intelligence and Its Role in Human Resource Management," *International Journal of Research and Analytical Reviews (IJRAR)* (6), pp. 20–24.

Zahidi, F., Imam, Y., Hashmi, A. U., and Baig, M. M. 2020. "Impact of Artificial Intelligence on HR Management–A Review," *Dogo Rangsang Research Journal* (10:6), pp. 92–101.