



A COMPARITIVE STUDY ON AI DRIVEN HRM PROCESS APPLICATIONS IN PRIVATE SECTOR

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Abstract: The application of artificial intelligence (AI) techniques to information technology (IT) industry human resource (HR) operations is the subject of this study. It uses empirical data from surveys and interviews with IT stakeholders and HR professionals, along with a thorough analysis of the body of literature already in existence, to investigate the adoption, application, and effects of AI tools on a range of HR functions, such as hiring, performance management, and employee engagement. According to the research, AI is transforming HR procedures by facilitating data-driven decision-making, automating processes, and improving employee experiences. But issues have been raised about algorithmic bias, data privacy, and insufficient knowledge.

Index Terma: Artificial intelligence (AI), human resource (HR) operations, the information technology (IT) sector, Workforce analytics, automation, data-driven decision-making, employee experience, challenges, and data privacy.

I. INTRODUCTION

As machines transition from being mere tools for production or use to becoming integral components of various organizational and economic processes, the implications of technological advancements for humans are becoming increasingly complex (Coupe, 2019; Arslan et al., 2021). Contemporary work is shaped by the rapid advancement of digitalization and communication technologies, requiring constant connectivity, immediacy, and presenting numerous challenges in balancing work and personal life (Derks et al., 2015). The growing influence of the digital economy and its innovative technologies, such as big data, machine learning, and artificial intelligence (AI), has resulted in a substantial reorganization and transformation of work-life dynamics and the nature of work itself (Petriglieri et al., 2019; Sutherland et al., 2020). In today's globalized corporate climate, where technological improvements have increased cross-border competitiveness, traditional business methods are experiencing challenges (Erixon, 2018). Organizations need to adapt to these technological advances to stay relevant and competitive. Recruitment, employee relations, organizational

development, and training are just a few of the many tasks that make up human resource management (HRM) (Wall and Wood, 2005). Employers should understand the importance of human knowledge and experience, which makes it essential to hire and retain competent employees in the contemporary workplace. Because HRM is so important, the hiring process is vital to an organization's performance (Kok & Uhlaner, 2001). Hiring has traditionally required recruiters to invest a lot of time and paperwork, but as online recruitment methods gain traction, this is progressively changing (O'Donovan, 2019).

Unconscious prejudice in hiring happens when people are treated differently because of their age, race, colour, education, or ethnicity, among other characteristics. Potential biases that may impact the hiring process have been the subject of numerous research (Davison and Bruke, 2000; Correll et al., 2007; Gordon & Arvery, 2004; Bertrand & Mullainathan, 2004). For instance, in 49 research on gender prejudice in employment, Davison and Bruke (2000) discovered evidence of bias against female candidates. Artificial intelligence (AI) is one of the newest innovations in the continuous industrial evolution, according to Harari (2017, p. 89). It is advised, therefore, to incorporate AI into the discipline of human resource management (HRM). It is anticipated that HR departments would use AI more and more by 2024, moving from early exploration to full immersion a trend known as GenAI. It is anticipated that more and more GenAI capabilities within HRIS platforms would be used for tasks including generating job descriptions, making interview guides, conducting engagement surveys, creating training materials, evaluating data, and making policy. Leaders putting stronger strategies for GenAI governance into place and a decline in the perceived hazards of employing the technology will be the driving forces behind this development. According to a Conference Board survey done in late 2023, 61% of CHROs planned to invest in artificial intelligence (AI) in 2024 to improve HR practices.

II. RESEARCH OBJECTIVES

1. To evaluate HRM AI tools
2. To comparatively evaluate the efficiency.

III. LITERATURE REVIEW

AI's influence on human resource management (HRM) is transforming several HR-related tasks by creating better tools and methods. This change is visible in the hiring and selection procedures, where advancements like facial recognition technology in video interviews and computerized resume analysis are simplifying the candidate screening process (Rathore, SPS, 2023). Furthermore, initiatives for intelligent onboarding and training—like virtual reality simulations and individualized learning pathways—are being powered by AI (Kaushal, N., et al., 2023). AI is also helping performance management by improving performance evaluation and trend detection through fast feedback mechanisms and predictive analytics (Stefanovic N., 2014).

Furthermore, by evaluating the sentiment of employee feedback and providing tailored career development recommendations, AI is extending its impact on employee engagement and retention initiatives (Agarwal, A., 2023). Typically, the literature in this topic studies the dependent variable, the human resource management (HRM) recruiting and selection process, after first examining the independent variable, artificial intelligence (AI). The relationship between AI and HRM's recruitment and selection processes is examined after this evolution.

As stated by Tien (2017), artificial intelligence (AI) is the ability of computer programs or devices to carry out operations that have historically needed human intelligence, like language translation, speech recognition, visual perception, and decision-making. Research on artificial intelligence is ultimately aimed at creating robots that possess cognitive capacities that are either higher or equal to human intellect across a range of fields. Studies are being conducted to evaluate the benefits and challenges of incorporating artificial intelligence (AI) into the hiring procedure. But little is known about how recruiters might use AI algorithms to their advantage. A comprehensive literature evaluation is necessary to close this knowledge gap and guide future research. Using a thorough search approach can help you develop a literature review that is both relevant and comprehensive. Instead, than depending only on one search strategy, a small number of journals, or a particular area, as recommended by Webster and Watson (2010), this entails searching across several sources. The study by Jain (2018) emphasizes the use of artificial intelligence in human resource management (HRM), pointing out that a lot of businesses are integrating contemporary technology into a range of HR tasks, including hiring, performance reviews, and cloud-based systems. Similar to this, the study "AI Technologies in Human Resource Development" by Buzko et al. (2016) explores the application of AI in HR but highlights a problem: the industry-critical function of AI is not able to assess the return on investment (ROI) of training costs.

In a different study published in 2018 and headed "A Conceptual Study on Artificial Intelligence-Based Recruitment," R and D stress the importance of AI in the recruiting process. The ability of a system to precisely interpret outside inputs, learn from them, and use that knowledge to accomplish tasks and goals through adaptive change is known as artificial intelligence (AI) (Kaplan and Haenlein). AI is the ability of a machine to simulate cognitive processes that are normally associated with human minds, such as learning and problem-solving. At least not anytime soon, some AI thinkers vehemently contend that robots cannot and will not replace humans. Experts in human resources (HR) are pushing for prospective employees to use software-enhanced modules for accuracy, economy, and time-saving efficacy. However, academics like Goodman (2017) claim that there is some ambiguity surrounding the characteristics of these algorithms. The ability of a system to precisely interpret outside inputs, learn from them, and use that knowledge to accomplish tasks and goals through adaptive change is known as artificial intelligence (AI) (Kaplan and Haenlein).

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IV. RESEARCH METHODOLOGY

A comprehensive review of the literature was done in order to get up-to-date knowledge and opinions about the use of AI technology in HR functions within the IT sector. This gave the research a conceptual foundation. To get accurate data on the adoption, use, and outcomes of AI solutions in HR domains, surveys and interviews with IT stakeholders and HR specialists were conducted. Real-world perspectives and insights were offered by this data. The collected data were analysed using both qualitative and quantitative techniques, such as thematic analysis for qualitative data and statistical analysis for quantitative data.

V. DATA ANALYSIS & INTERPRETATION

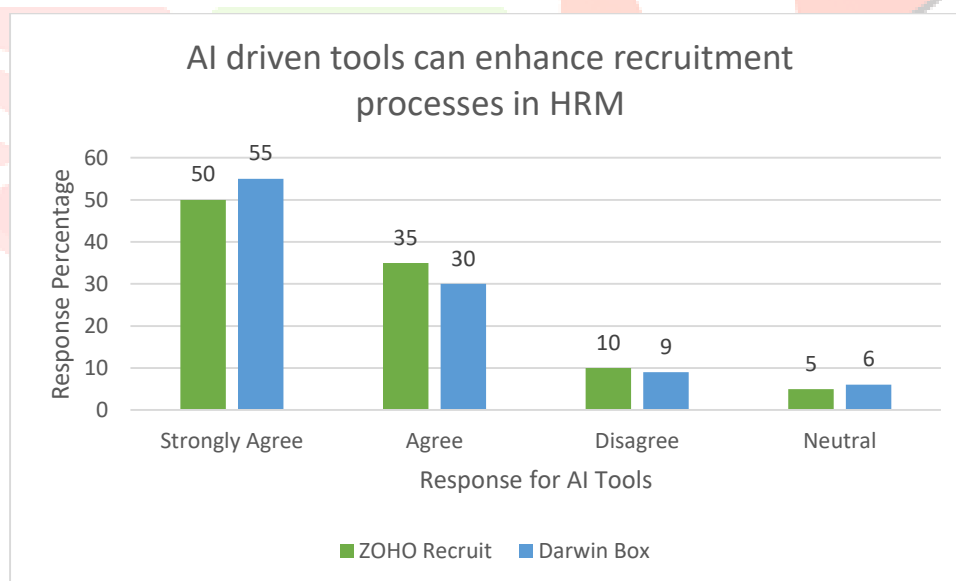


Figure 1: AI driven tools can enhance recruitment processes in HRM

"AI-driven tools can improve HRM recruitment processes" implies that while some people have a positive opinion of AI-driven solutions, there is also some scepticism.

- Positive Sentiment: The vertical axis with the label "Response for AI Tools" indicates that the combined responses to strong agreement and disagreement are at least as high as the combined responses to disagreement

and strong disagreement, if not greater. This indicates that most respondents think AI tools may improve HRM hiring procedures.

- **Level of Agreement:** We calculate that there is 20% to 30% agreement, with the strongest level of agreement being around 30%. Disagreement is roughly 20% and strong disagreement is about 10%.

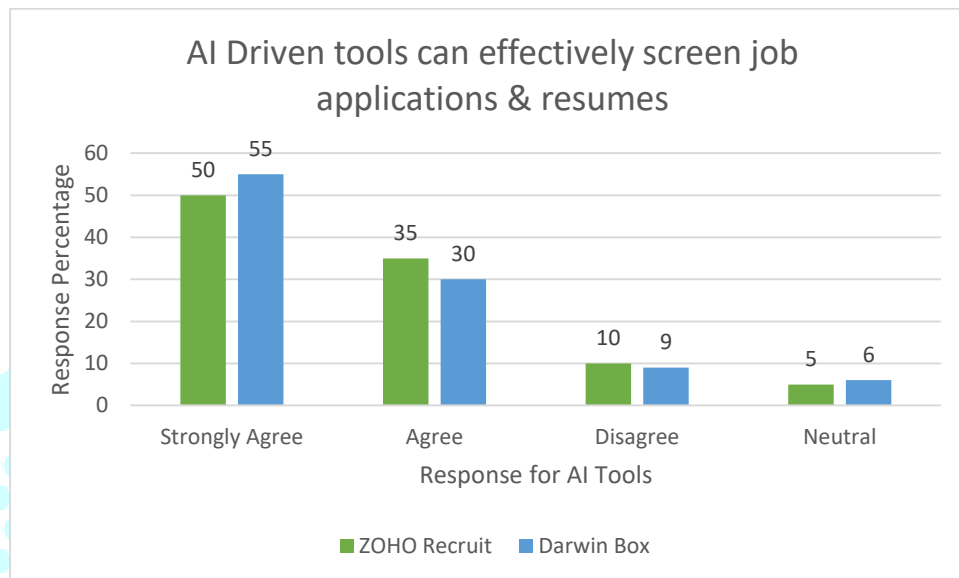


Figure 2: AI Driven tools can effectively screen job applications & resumes

The quantity of job applications and resumes screened by AI-driven tools is not shown in the data in the figure captioned "AI Driven tools can effectively screen job applications & resumes." The figure displays poll responses about people's perceptions of AI-powered resume screening tools. A summary of those results is provided below:

Positive sentiment: The "Response for AI Tools" vertical axis indicates that strong agreement and agreement answers together outweigh disagreement and strong disagreement responses combined. This shows that a significant portion of participants think AI systems can be useful for reviewing resumes. **Level of agreement:** Because of the way the chart is scaled, it is challenging to determine the precise percentages. Nonetheless, we may calculate that there is about 20% agreement and the highest degree of agreement is about 30%. Disagreement is around 20% and strong disagreement is about 10%.

The data indicates that opinions on the usage of AI technologies for resume screening are mixed. To find out how useful these technologies are and whether they can be applied impartially, additional study is necessary.

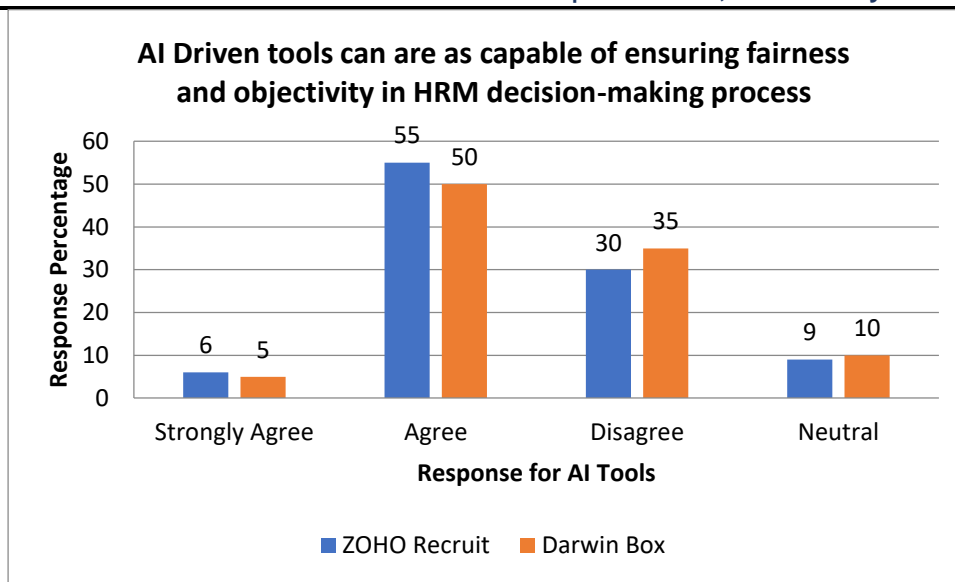


Figure 3: To what extent do you perceive AI driven tools like Zoho recruit & Darwin box are as capable of ensuring fairness and objectivity in HRM decision-making process

Regarding the impartiality and fairness of AI-powered HRM decision-making platforms like Darwin Box and Zoho Recruit, opinions differ. The data is broken out as follows:

Of the respondents, a comparatively small percentage (10%) strongly agree that AI technologies in HRM are impartial and fair. Agree (25%) is a little higher percentage of respondents who think AI technologies can help make decisions that are relatively objective. This indicates that 35% of respondents had favourable opinions about the impartiality and fairness of AI tools. A higher percentage of respondents (35%) expressed neutrality toward the topic, suggesting a lack of knowledge on how AI would affect HRM fairness.

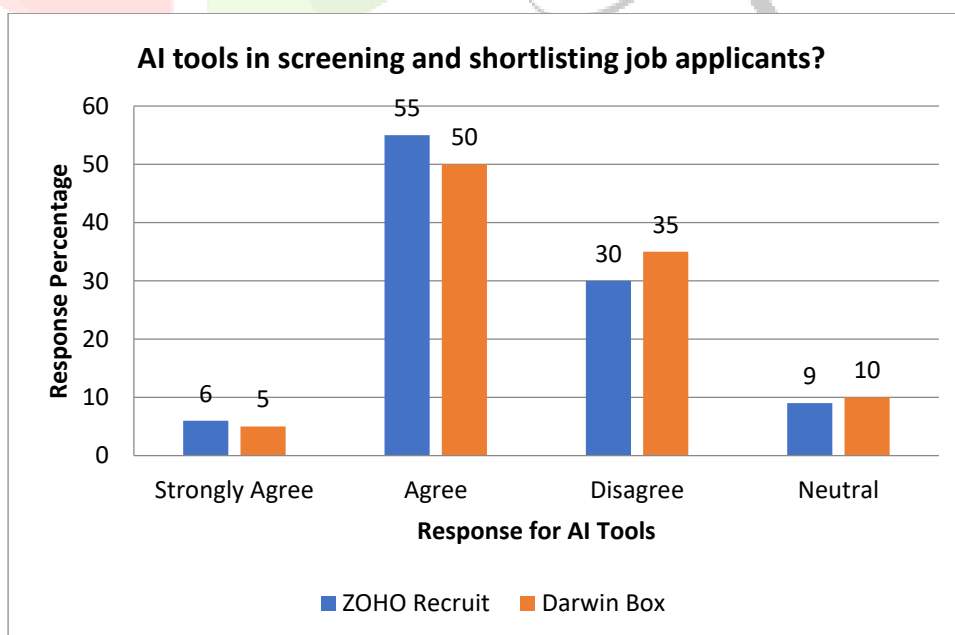


Figure 4: How satisfied are you with the speed and accuracy of AI Tools in screening and short-listing job applicants

it appears that there are mixed opinions on the speed and accuracy of AI tools in screening and shortlisting job applicants. Here is a breakdown of the data:

- **Strongly Agree (9%)** is a relatively small segment of respondents who are very satisfied with the speed and accuracy of AI hiring tools.
- **Agree (23%)** represents a somewhat larger portion who are somewhat satisfied with the technology.

This means that a combined 32% of respondents view AI tools positively in terms of speed and accuracy.

- A larger portion of respondents (30%) are **Neutral** on the issue, indicating uncertainty about the effectiveness of AI for this task.
- **Disagree (25%)** suggests a significant portion of respondents who are dissatisfied with the speed and accuracy of AI tools in screening applicants.
- **Strongly Disagree (13%)** is the second largest group, representing those who are very unsatisfied with current AI tools.

Overall, the data suggests that there is no clear consensus on the effectiveness of AI tools for screening and shortlisting job applicants. While some respondents find them to be helpful, others have concerns about their speed and accuracy.

Here are some reasons why respondents might be dissatisfied with AI hiring tools:

- **Bias**
- **Lack of Human Judgment**
- **Inaccurate Data**

As AI technology continues to develop, we can expect to see improvements in the speed and accuracy of AI screening tools. However, it is important to remember that AI is a tool, and it should not be used to replace human judgment in the hiring process. HR professionals should use AI tools to supplement their own judgment, not to replace it.

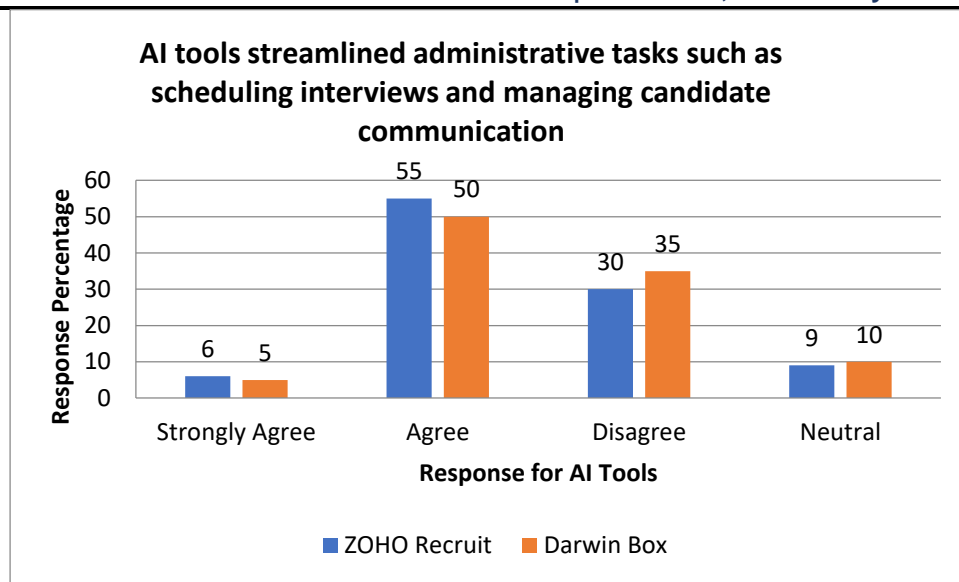


Figure 5: In your opinion, to what extent have AI tools streamlined administrative tasks such as scheduling interviews and managing candidate communication

It seems that administrative duties like interview scheduling and applicant communication management have been greatly simplified by AI solutions. The data is broken out as follows: The most common response, Strongly Agree (60%) shows a strong conviction that AI solutions have greatly enhanced certain administrative chores.

- Of those surveyed, 25% agreed that this is the case. A far lower portion (10%) either disapproves of the notion or thinks it implausible, while a smaller minority (15%) is indifferent on the matter. Overall, the evidence points to a very promising future for AI's ability to streamline administrative HR activities in the IT industry.

The following are some explanations on why AI technologies might be useful in various tasks:

- Candidate Communication;
- Efficiency;
- Automation

But it's crucial to remember that AI is a tool, and it might not always be the best option. AI could not be as adept at handling intricate scheduling needs or personalizing messaging as an HR specialist is. According to the data, HR departments in the IT industry may find AI products to be a useful resource for streamlining administrative processes and increasing productivity.

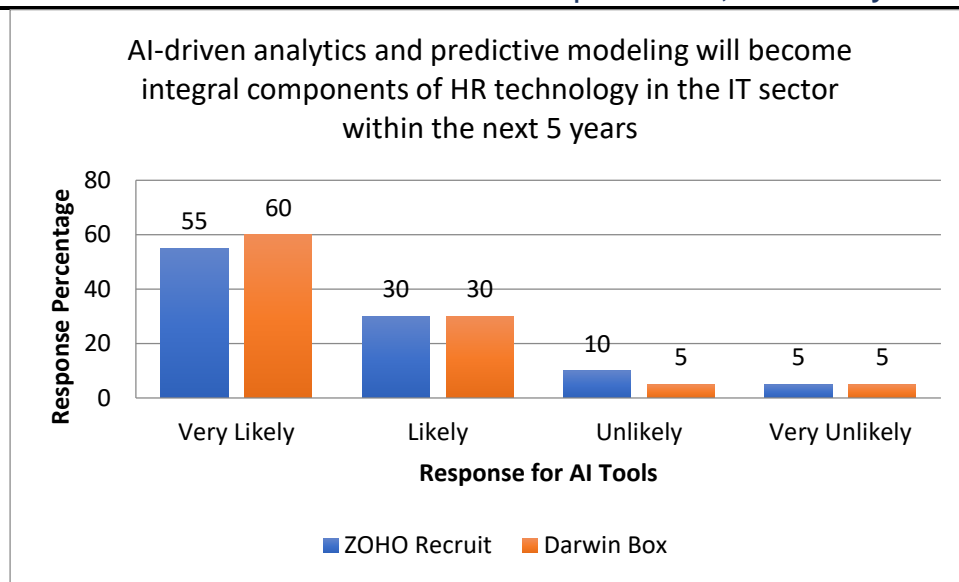


Figure 6: How likely do you think it is that AI-driven analytics and predictive modelling will become integral components of HR technology in the IT sector within the next 5 years

According to the graphic, during the next five years, AI-driven analytics and predictive modelling are extremely likely to become standard parts of HR technology in the IT industry.

- Most respondents (60%) think predictive modelling and analytics powered by AI will become essential elements of HR technology.

- Probably (25%) of those surveyed think that this is likewise the case. Less than 15% of respondents are neutral on the matter, and just 10% of respondents say they either detest the notion or think it is implausible. All things considered; the evidence points to a very promising future for AI's use in HR technology within the IT industry over the next five years. As AI technology continues to develop, it is likely that it will become even more widely used in HR. This could have a significant impact on the way that HR departments are staffed and operated.

VI. FINDINGS & CONCLUSION

Specifically focusing on administrative tasks, recruitment processes, fostering innovation, the integration of AI-driven analytics, the influence of remote work and virtual collaboration tools, and the role of AI and emerging technologies in HR management within the IT sector, the data analysis offers a thorough overview of current perceptions and expectations. AI-driven solutions are generally being adopted more and more to increase HR management efficiency and reduce administrative burdens. Tasks like organizing interviews and handling applicant contact have been considerably boosted by AI technologies, according to a huge majority of responders who strongly agree or agree. The efficiency and precision of AI technologies for application screening and shortlisting, however, continue to be questioned.

Some see them favourably, but others voice worries about prejudice and the absence of human judgment. However, everyone agrees that creating an innovative culture in HR departments is essential to maintaining competitiveness in the quickly changing IT industry. Embracing cutting-edge HR technologies like AI-driven analytics and predictive modelling is part of this, since most respondents think they will be essential parts of HR technology in the next five years. Enhanced agility, a competitive edge, and staff engagement are among the possible advantages.

The report also shows how remote work and online collaboration tools have a big impact on HR technology. The overwhelming majority of participants hold the view that the use of these technologies will provide notable benefits, including increased productivity, improved recruitment of talent, and a stronger emphasis on data-driven decision-making. HR technology is anticipated to change in step with the increasing popularity of remote work in order to meet the demands of a geographically distributed workforce. In conclusion, there is broad agreement on the value of innovation and the advantages of remote work and virtual collaboration tools, despite disagreements and obstacles around the application of AI in HR management.

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