Two Decades In: How AI is Impacting the Workplace

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Q: What initially inspired you to conduct a systematic review of the impact of AI on workplace outcomes?

A: I have published two fundamental papers on AI and it's impact on HR and the workplace recently. One, titled "A systematic literature review on the impact of artificial intelligence on workplace outcomes: A multi-process perspective" in the journal 'Human Resource Management Review'. Two, "Artificial intelligence, robotics, advanced technologies and human resource management: a systematic review" in the 'The International Journal of Human Resource Management'.

Our inspiration and motivation for the first article and study were as follows. We argue here that Artificial intelligence (AI) can bring opportunities and challenges to human resource management (HRM). While scholars have been examining the impact of AI on workplace outcomes more closely over the past two decades, the literature falls short of providing a holistic scholarly review of this body of research. We thus posit that such a review is needed to (a) guide future research on the effects of AI on the workplace and (b) help managers properly use AI technology to improve workplace and organizational outcomes.

For the second article above, our inspiration and motivation were as follows. In this study, we argue that although academic production in intelligent automation (e.g., artificial intelligence, robotics) has increased, we still lack a comprehensive understanding of the impacts of the utilization of these technologies in human resource management (HRM) at an organizational (firms) and individual (employees) level. Therefore, this study aims to systematize the academic inputs on intelligent automation and clarify its main contributions to and challenges for HRM.

Q: Can you elaborate on the specific gaps or challenges in the existing literature that led you to undertake this study?

A: For the first study above:

This is the first systematic review to explore the relationship between artificial intelligence and workplace outcomes. Through an exhaustive systematic review and analysis of existing literature, we ultimately examine and cross-relate 60 papers published in 30 leading international journals (AJG 3 and 4, the UK ranking of academic journals) for 25 years (1995–2020). Our review researches the AI-workplace outcomes nexus by drawing on the primary functions of human resource management and the process framework of 'antecedents, phenomenon, outcomes' at multiple levels

of analysis. We review the sampled articles based on years of publication, theories, methods, and critical themes across the 'antecedents, phenomenon, outcomes' framework. We provide helpful directions for future research by embedding our discussion within HR literature, while we recommend topics drawing on alternative units of analysis and theories that draw on the individual, team, and institutional levels.

For the second study:

This study aims to systematize the academic inputs on intelligent automation so far and clarify its main contributions to and challenges for HRM. In a systematic search of 13,136 potentially relevant studies published in the top global HRM, international business (IB), general management (GM) and information management (IM) journals, we found 45 articles studying artificial intelligence, robotics and other advanced technologies within HRM settings.

Results show that intelligent automation technologies constitute a new approach to managing employees and enhancing firm performance, thus offering several opportunities for HRM and considerable challenges at a technological and ethical level. The impact of these technologies has been identified to concentrate on HRM strategies, namely, job replacement, human-robot/AI collaboration, decision-making and learning opportunities, and HRM activities, namely, recruiting, training and job performance. This study discusses these shifts in detail, along with the main contributions to theory and practice and directions for future research.

Q: Based on your review, what are the most significant impacts of AI on workplace outcomes that you have identified?

A: AI could be viewed as computing technologies that simulate or imitate intelligent behaviours relevant to the ones of humans even though they act differently from them. Research areas around AI applications in the workplace are related, among others, to machine learning and deep learning, and they can be applied in industries across the globe. Regarding HRM, the domain of AI research encompasses AI in the context of job replacement, human-AI collaboration, training, decision-making, and recruiting.

One way to comprehend AI and its applications in HRM is to think of the services that AI will replace and how this will affect the world of work in general. One theory related to this asserts that job replacement by AI will happen first at a task level instead of a job level and for "lower" intelligence tasks, as AI is more straightforward and less complex to perform than human employees.

Progressively, however, AI, having the ability to perform human tasks and being able to think and feel like humans, will replace human labour entirely and thus, human interactions will fade. Consider, for example, the potential impact of virtual assistants like Siri. Dealing with queries and customer support internationally may enable organizations to operate 24 hours a day without engaging human employees as representatives at physical locations. We argue that due to the dramatic advances in AI, automation and digitalization, unskilled workers in advanced economies may become unemployed and unemployable as human tasks and jobs are either offshored, cease to exist altogether or decline.

Considering the above, we find that the progress of AI may change the fundamental nature of work and pose a severe threat to human employment. However, it can also create significant opportunities for human-machine collaboration and integration. Within this context, several authors support the view that AI can be of great value in facilitating service or sales and creating more favourable, customized and valued service interactions.

Q: How do the impacts of AI vary across different HR functions such as recruitment, training, and employee retention?

A: Both our studies suggest the following: The inability to properly manage talent, the ineffectiveness in identifying suitable successors for leadership positions, the lack of staffing plans, and task assignment inefficiencies are significant problems that fall under the umbrella of human resource planning and are essential for organizational survival. These issues could ideally serve as drivers for the exploration of the way AI could be applicable in formulating more effective talent management strategies, succession plans, staffing plans, and organizing employee tasks more effectively across the organization. For instance, evolutionary computation and data mining can be employed to explore large databases or social media where potentially talented individuals can be found.

The 'health, safety, and well-being' function is increasingly concerned with employee well-being at work, which is mainly linked to the psychology of employees at work and their attempts to establish a proper work-life balance. At the same time, there is an ever-increasing consideration of the protection of the health of employees amid worsening global health conditions linked to the COVID-19 pandemic. These drivers call for considering using artificial intelligence to provide effective solutions. For instance, machine learning is good for automating repetitive tasks within organizations. By avoiding 'grunt' work, employees can pursue more enjoyable and meaningful functions within organizations, which will positively improve their well-being at work. Additionally, fuzzy systems and models

drawing on genetic algorithms can set a path for future work looking into optimising safety at work. Such AI techniques can help predict workers' behaviours when in the presence of risks and assign high-risk tasks to employees more likely to be cautious in hazardous conditions.

AI could address major contemporary issues concerning performance management, including the need to link individual performance management within organizations with cognitive and emotional aspects of the individual at work, such as creativity and perceived well-being. AI, in the form of deep learning systems, if properly fed with behavioural and performance data on employees at work, can help managers better judge how performance management can be linked with individual psychological dimensions at work. Another hot issue is problems associated with the delay, ineffectiveness, and transparency of appraisal systems within organizations, which can be solved using artificial intelligent techniques such as fuzzy set logic and machine learning. AI can progressively allow a shift to efficient automated appraisal systems with high analytical and predictive abilities, which can enable the completion of appraisals promptly and with high transparency.

Hot topics in recruitment and selection are compelling candidates seeking and selecting high-performing and productive individuals. AI, in the form of big data algorithms, can be instrumental in allowing organizations to expand their search processes. Big data algorithms can also be important in the selection process since they can go beyond the searching of documents supplied by candidates to examine their social media and other online profiles to help management make judgments of a candidate's fit with organizational culture and teamwork practices. However, it remains to be seen how AI can lead to more effective recruitment and selection programmes within organizations. Additionally, the topic of robot diffusion and use within organizations, linking this practice with selecting employees with the characteristics and demographics to achieve it, is also fascinating.

Compensation and rewards are contemporary issues that this function currently deals with, such as the lack of fair payment systems and the inability to link rewards with performance effectively. Through evolutionary programming, neural networks, and other optimisation models, AI can effectively create metrics and models that can enable organizations to reward employee efforts more effectively and fairly.

Q: Are there any specific strategies or tools that you recommend for effectively integrating AI into workplace learning and development programs?

A: HRM's 'training and development' function faces complexities regarding the approach to training organizational personnel. This is a facet of this HR function

which has not been reflected in the sampled articles of the present review. Frequently, organizations opt for the less costly delivery of a single standardized training program or the services of external organizations to deliver training. Customizing training to fit the needs of diverse people within a range of functions is often the least desired option since it takes longer to implement and is more costly than the other options. At the same time, training programs delivered within organizations are not adequately followed up and evaluated.

These are essential drivers that can trigger research on integrating AI technologies in making physical and online training more effective through proper customization to fit the needs of a diverse workforce and through proper evaluation that allows impact measurement. For instance, machine learning can effectively customise training within organizations based on each employee's profile, historical performance, appraisal data, and skill gaps. An additional area of future work under 'training and development' involves using machine learning and big data algorithms to identify the optimal bundle of skills, which can be capitalized on to facilitate the development of individuals, teams, and the organization.

Q: Based on your findings, what advice would you give to HR managers and Learning teams looking to implement AI in their organizations?

A. Apart from the advice I have provided above, classical issues such as employee voice and participation are diachronically essential concerns of employee and labour relations. More modern issues involve the rise of remote work, which makes face-to-face contact between managers and employees increasingly scarce in some workplaces. By eliminating exhaustive repetitive tasks through machine learning, deep learning, and other AI techniques, organizations can give space to employees to voice their ideas and participate in critical practices such as creating new products within organizations. In this way, AI can lead to more fulfilling employee experiences at work and can bring employees and managers closer to one another.

Moreover, we call for future work on communication within organizations under fuzzy circumstances. Computational intelligence and soft computing techniques can be further researched for their applicability in evaluating value activities within organizations and in optimizing value-driven communication between employees across departments.

Q: How can organizations balance the benefits of AI with the potential risks it poses to workforce dynamics?

A: Our work can provide valuable implications for practitioners within the HRM function, such as HR managers and people in charge of diverse HR activities such as recruitment, compensation, well-being, labour relations, planning, training, and performance management. For instance, HR professionals in charge of recruitment and selection could consider using data mining techniques to become more thorough in their quest to identify suitable candidates and assess candidate profiles to ensure a perfect match between the candidate and the organization. Additionally, HR experts in the compensation field could draw on algorithms to find the most effective payment formula that optimizes the balance between individual performance and compensation. At the same time, managers in charge of training and development could draw on machine learning and deep learning to establish bespoke approaches to the training of their employees. Our work presents additional practical implications falling under diverse HRM functions.

Our studies and work provide a comprehensive outlook and a critical analysis of the state-of-the-art research on AI and employee outcomes by considering the HR functions within which AI is utilized. Our critical analysis and synthesis have enabled us to a) provide an integrative, multi-dimensional framework that encapsulates and provides a better understanding of current literature and b) identify several research streams of how future research could further enhance the conceptual basis of this research domain, by suggesting and stimulating theoretical and conceptual inputs from various fields. Our critical analysis and synthesis have also enabled us to fill in gaps in existing literature through empirical research that draws on various scientific domains and contexts. We hope these comprehensive and timely reviews will provide the basis for new and exciting research in this research domain, likely to interest a wide range of scholars and practitioners alike.

Q: What are your personal views on the use of AI in the workplace?

A: Our analysis reveals that most studies have been drawn at the organizational level to examine AI phenomena linked to the workplace. I believe there is a need to undertake future research that draws on the individual, the team, the institution, and even the inter-organizational level of analysis. At the same time, future studies can benefit from considering multiple levels of analysis, given that AI, when applied within the workplace, can influence not only outcomes at the level of the organization but can also lead to changes at the individual and the team levels. Our first paper provides several topics that can help future studies delve beyond the organizational level when examining the nexus of workplace outcomes.

For instance, at the individual level, future studies could consider phenomena such as how AI, through machine learning and deep learning, can help customize individual employee training or how genetic algorithms can help managers optimize individual employee compensations and bonuses matching individual employee performance. Further, at the team level, future work could look into how AI, through data mining and machine learning, can automatically search and form teams on an ad hoc basis within larger organizations based on the project that is pursued. Another example is using AI, such as machine learning and deep learning, in virtual team environments and how this technology can help replicate social environments that fulfil the needs of interacting team members. Finally, at the institutional level, future research could focus on how AI can assist organizations in searching and sourcing local talent through evolutionary computation and data mining or in pursuing strategies that match the needs and peculiarities of the external entrepreneurial ecosystem. We also suggest workplace outcomes at multiple levels, which have not been sufficiently examined at the AI-workplace outcomes nexus and could set the basis for future research work.

Q: If you could go back in time, and give career advice to your younger self, what would you say?

A: First and foremost, I would understand and then accept the irreversible phenomena here. Artificial intelligence (AI) is an evolving technology that has become a predominant force influencing us globally. Whether this is a marketing ploy or an actual operational mandate, the impact of AI on organizations is increasing rapidly and irreversibly again. However, despite the significant advantages that AI might experience, several factors appear problematic if inappropriately channelled in the workplace.

These include, among others, the fear of AI replacing the human workforce, its impact on diminishing human components of empathy and critical and reflective thinking, and the diminishing of human interaction in our global environment. Now, the question is, is this true? I would say YES and NO. It is, in fact, an opportunity for all of us, across stakeholders, to make the best use of this evolving disruptive technology, provided we have a strategy for it.

Thus, from an organisational perspective, I would propose a strategy to choose suitable employees and train them based on the assessment for a smooth job transition. I would present a case of employing empathy and reflective thinking with artificial technologies, which is vital for AI workforce implications. Empathy and reflective thinking facilitate cultural sensitivity in managing employees in cross-cultural settings and across different generations and demographics. Employers must invest in understanding local laws and policies with an open mind. These new aspects of assisting employees can strengthen the use of artificial intelligence technologies regarding global implication.

Reference

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