

HUMAN RESOURCE MANAGEMENT IN THE ERA OF ARTIFICIAL INTELLIGENCE: EVIDENCE FROM SECONDARY DATA

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ABSTRACT

Artificial intelligence (AI) is a revolutionary innovation transforming the future of industries and day to day lifestyle leading to more creative, strategic and human centric work. AI is replacing humans with machines where machines think and learn like humans that help in solving problems and making strategic decisions. The study is based on secondary data and highlights the case of Tata Consultancy Service (TCS). The study shows the implementation of AI in human resource management functions, the benefits of using AI platforms to clients & the organisations and challenges faced by using AI platforms. The study also recommends how these challenges can be overcome, foresting long term development of the organisations.

Keywords: Artificial Intelligence (AI), Human Resource Management, Tata Consultancy Service (TCS), Long Term Development.

1. INTRODUCTION

Artificial intelligence (AI) is a revolutionary innovation transforming the future of industries and day to day lifestyle leading to more creative, strategic and human centric work. AI is replacing humans with machines where machines think and learn like humans that help in solving problems and making strategic decisions. AI has escalated its role in personal, social and organisational domain optimising performance through tools like personal assistance and organizational digital assistance (Haenlien & Kaplan 2019, Cappelli & Yakobovich 2018).

The 4th industrial revolution (4.0) is an era of technological development through cyber physical systems. It has introduced AI as a key intelligent technology enabling advances in robotics, Internet of Things (IoT), Web3, blockchain, 3D printing, genetic engineering and other technologies. AI enabled by advances in ICT has influenced multiple societal sectors. ((Kong et al. 2021 and Aloqaily & Kawash 2022).

There is a continued widespread use of AI in various functional areas in the organizations and human resource lag behind with confined application of AI in large firms. (Vrontis et.al 2022). However, an incorporation in HR is escapable.

AI's impact in human resource is complicated, it highlights a dynamic transformation leading to creation of new roles and opportunities while eliminating others, triggering insecurity and intense tension among employees who are resistant to change. The digital age has significantly impacted Human Resource Management (HRM), demanding a shift from conventional practices to more dynamic, data-centric strategies. Traditional HRM strategies focus mainly on administrative tasks and requires modification to address today's intricate manpower demands. For instance, recruitment process now requires sophisticated algorithms to match candidates' competencies required to perform more productively (Strohmeier, S. 2020). Similarly, employee engagement methods must harness digital platforms to encourage constant interaction and feedback. Performance management/development has evolved from annual appraisal to real-time analytics, facilitating more flexible and responsive feedback systems (Marler & Boudreau, 2017). However, there exists a considerable disparity between theoretical and practical application.

In India, AI has broken up sectors like healthcare, education, governance, and business (NASSCOM, 2022). In HRM, AI facilitates data-driven decisions, intelligent automation, and predictive modelling (KPMG India, 2021). AI applications in HR extend beyond automated payroll processing to recruitment via automated resume scanning, onboarding with chatbots (software application to stimulate human conversation), sentiment analysis using natural language processing and performance evaluation through predictive analytics (Tambe, Cappelli, & Yakubovich, 2019). These technologies enhance efficiency, reduce bias, and provide real-time insights.

Large Indian corporations in information technology, banking, financial services and insurance (BFSI) and telecom are shifting to AI-digital transformation in HR practices, while medium and small enterprises are still exploring the same (NASSCOM, 2022). Thus, AI in HRM needs to be examined not only as a functional tool but also in context of social and ethical concern affecting equal employment opportunity and employee well-being.

2. REVIEW OF LITERATURE

Sánchez et al. (2022) This research highlights how Artificial Intelligence (AI) is becoming more pertinent lately. A bibliometric analysis of the scientific literature was done that shows an association between the application and impact of AI in the field of HRM. The scholarly databases were consulted and it included Web of Science and Scopus, generating 156 articles, of which 73 were selected for subsequent analysis. The information was processed using the Bibliometrix tool, which provided information on annual production, analysis of journals, authors, documents, keywords, etc. The findings demonstrate that AI applied to HRM is an emerging field of study with steady growth and a bright future. However, it should be noted that it has a very specific character because the majority of the research is concentrated on the use of AI in recruitment and selection processes, ignoring other sub-areas with significant application potential.

Basu et al. (2023) in their research discussed the impact of AI systems and applications on various functions of an organization. They are of the view that the AI systems enhance organizational performance, posing threats of job losses for human resources and challenges to human resource managers that are tasked with governing the AI adoption processes. A systematically review of the literature was performed that showed the association of AI and human resource management (HRM). The configurational approach was used to identify the evolution of different theme based causal configurations in conceptual & empirical research and the outcomes of AI-HRM interaction. It was perceived that there were incremental

mutations in thematic causal configurations as the literature evolves and also provides thematic configuration-based explanations to beneficial and reactionary outcomes in the AI-HRM interaction process.

Böhmer N, Schinnenburg H (2023) this paper studies the positive and negative impact on HRM, workplaces and workers by AI implementation regarding augmentation and automation of work. For this a systematic literature review that includes 62 international journals across different disciplines and contains top-tier academic and German practitioner journals was conducted. The literature analysis applied the resource-based view (RBV). The analysis shows four uncertainties for AI-driven HRM that might support sustainable company development or might prevent AI application: job design, transparency, performance and data ambiguity. A limited scholarly discussion with very few empirical studies can be stated. Till date, research has mainly focused on HRM in general, recruiting and HR analytics in particular.

Grover, M. (2023) This research conducted a qualitative investigation through a systematic review of existing literature, aiming to assess how AI-powered tools and practices are altering the HR landscape in India. By examining academic journals, policy documents, industry reports and reliable case studies. The study highlights key themes related to AI adoption in recruitment, learning and development, performance management, and employee engagement. The results indicate that although large Indian companies, especially in the IT, BFSI and manufacturing sectors are progressively implementing AI-driven HR technologies. The shift is inconsistent across different industries and company sizes. Ongoing issues related to data privacy, ethical transparency, workforce adaptability and the digital preparedness of HR professionals continue to impede the inclusive and responsible application of technology. The study highlights a significant gap between academic discussions and real-world situations, suggesting that more efforts are needed to unite policymakers, educators and industry stakeholders. By integrating research and case studies, this paper offers a contextual analysis of AI's impact on human resource strategies in India. It concludes with policy and institutional recommendations aimed at balancing a forward-thinking approach to technology in HRM with a focus on humans.

Nawaz et.al. (2024) This research examines how Artificial Intelligence (AI) affects HRM Practices concentrating on outcomes like accuracy, automation, computing power & capacity, real-time experience, personalization and efficiency in terms of time & cost. The study seeks to identify the potential advantages of integrating AI. Data was gathered from 274 IT employees in Chennai City using a well-designed online questionnaire. The analysis was conducted using IBM SPSS version 21 and AMOS version 21 software, leading to the proposal of a new research framework. The results reveal that factors such as accuracy, computing power & capacity and personalization have a significant impact on time-saving & cost reduction whereas, automation and real-time experience do not have a similar impact.

Kekez et al. (2025) the researches in this paper did a comprehensive review of 64 papers using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) of research on bias and discrimination in the context of using Artificial Intelligence (AI). The paper confines the scope to research in HRM, it intends to answer three questions that are significant to scholarly field. The fundamental question was whether research papers define the terms 'bias' and 'discrimination' and if so, how? Secondly, acknowledging that there are various forms of bias and discrimination, the question is exactly which ones are being investigated and are there any forms of bias and discrimination that are underrepresented? Thirdly, whether a negativity bias exists in research on bias and discrimination in the context of AI? The answers to the first two questions point to some research problems. The review

shows that in a substantial number of papers, the terms 'bias' and 'discrimination' are either not or hardly defined. Furthermore, there is a disproportionate focus among researchers on bias and discrimination related to skin tone (racism) and gender (sexism). In the discussion, they provided reasons as to why this is undesirable for both scientific and extra theoretical reasons. The answer to the last question is negative. There is a relatively good balance between research that zooms in on the positive effects of AI on bias and discrimination and research that deals with AI leading to (more) bias and discrimination.

Satheesh Raju G, Sardar P. Singh, Nagaraju Ch (2026) the chapter analysis the consistent incorporation of AI in HRM. The research explored the consequential influence of AI technology, extending from recruiting and employee engagement to data-driven decision-making. The chapter provides significant findings for HR professionals as they explore the revolutionizing landscape by examining real-world applications and problems. With the surging implementation of AI by enterprises, it is crucial to understand its role in improving HR operations. They concluded that, this concise investigation is a great reference for researchers, HR professionals and business executives who are pursuing a thorough synopsis of ways in which AI is transforming the future of human resources.

3. OBJECTIVES OF THE STUDY

The study highlights the following objectives:

1. To transform HRM practices by examining the role of AI
2. To highlight the impact of AI in key areas of HRM.
3. To create awareness of increasing significance ai in HRM among scholars, researchers and professionals about the growing importance of AI in human capital management.
4. To present understanding and applicability of role of AI in modern HRM and future prospects.

4. RESEARCH METHODOLOGY

The research is descriptive and analytical based on secondary data. Secondary data has been collected through annual reports, official websites, research journals, industry reports, business magazine and reports of consulting firms.

A case of Tata Consultancy Services is incorporated in this paper to highlight the impact of AI in HRM Practices.

5. CASE: TATA CONSULTANCY SERVICE (TCS):

TCS was established in 1968, headquartered in Mumbai. TCS has always focused on enforcing excellence in innovation, engineering and customer service since its establishment. It concentrated in long-term value creation for its employees, clients, investors and general public. TCS operates in 55 countries having highly skilled workforce.

TCS is a learning-centred enterprise achieving high technological agility reflecting a shift from centralised (batch-processing) machine to AI

5.1 AI APPLICATION IN THE FIELD OF HRM

TCS uses a holistic AI platform for HR services being TCS Cognix™, that emphasises on reengineering and revolutionizing their HR operating model to deliver outstanding results related to talent acquisition efficiency, onboarding effectiveness and workforce optimization.

TCS Cognix brings a tailored digital plug-and-play, with its host of ready-to-use and result-oriented digital solutions. It allows organizations to cohesively integrate HR operation with AI, GenAI, analytics, and automation, empowering digital participation, rational decision making, and seamless integration with human centricity.

5.1.1 Solution

TCS uses a blend of technology and operational proficiency which helps in transforming HR functions. The comprehensive services driven by AI in TCS includes:

- **Talent acquisition:** recruitment and onboard procedures are aided with technologies like data analysis, automation, and AI. Talent acquisition services include acquiring, screening, candidate assessment, background check, offer letter management and orientation.
- **Learning and development (L&D):** the AI-enabled L&D program of TCS is adaptive and innovative, preparing the workforce to be digital friendly & upgrading their skills. TCS L&D services include learning management systems (LMS) implementation, curriculum development, content design and management, learning administration, evaluation management and vendor management.
- **Employee administration:** digital platforms, technologies and services focus on integrated HR solutions. The services include management of employee data, organization change, intra- and inter-country relocation and repatriation, employee transition, employee helpdesk and separation.
- **Payroll:** payroll operations in TCS are streamlined, flawless and impeccable. TCS services include payroll preparation, calculation, distribution and reconciliation, as well as third-party payments and tax reporting & filing.
- **Compensation and benefits:** the compensation and benefit programs are transparent. TCS services include budgeting, job & salary analysis, job pricing, increments, incentives, stock options & commissions, healthcare plans, ancillary benefit administration and leave programs.
- **Performance management, rewards, and recognition:** TCS supports and executes the HR functions successfully by handling their performance management, rewards, and recognition programs with services like career development, succession planning, performance discussions, spend data analysis, rewards & recognition (R&R) management and rewards fulfilment.
- **Employee helpdesk:** the AI-powered helpdesk and chatbot services help improve employee experience by providing 24*7 support services and efficiently resolving employee support requests.

- **Chief human resource officer (CHRO) advisory:** the holistic consulting services allows CHROs to become key players in business growth by evaluating the current HR processes, outlining areas for improvement through data-driven insights and help in implementing new processes. Major advisory services of TCS are mergers and acquisitions (M&A), HR service strategy development, shared strategy, HR job profiling, workforce planning & diversity and inclusion planning.
- **Environmental, Social and Governance (ESG) for HR:** TCS helps CHROs to provide accurate data for ESG disclosure, it also focuses on workforce wellbeing and labour practices.

5.1.2 Benefits of using AI

- i. Transform HR operating model to meet future requirements.
- ii. Reconceptualize workforce and workplace by implementing people-centric solutions.
- iii. Build an instinctive and employee-oriented HR function powered by futuristic digital solutions.
- iv. Enhance the employee experience by restructuring processes such as talent acquisition, learning and development and performance management.
- v. Attract, develop, and retain top talent with innovative work solutions.
- vi. Reduce HR operating cost by implementing AI-led automation solutions.
- vii. Drive agility through insight-driven decision support and reporting model.
- viii. Embed sustainability into HR practices.
- ix. Increase learning effectiveness.
- x. Position (CHROs) to boost organizational growth.
- xi. Helps improve hiring process from screening, interview till placement.

TCS helps in making HR operations future-ready with TCS' consulting-led transformation services. These includes:

- **Experience-led technology powered transformation - TCS Cognix™ for HR:** helps to differentiate themselves and accelerate growth by technology led innovation. TCS benefits its clients as it has made investments in research and new technologies like generative AI and LLMs.
- **Transforming businesses through technology powered by TCS Cognix™:** TCS Cognix™ specialises in ready-to-use, outcome-focused digital solutions. the clients can with the help of these solutions, install technologies such as AI and generative AI. The clients can also, install analytics and automation in order to enable intelligent decision making and boundary less collaboration in their hr operations.
- **Extensive experience and expertise in HR:** in order to improve employee performance and hr function, TCS also provides innovative hr functions. the same leads to adopting best practices and helps in leading industry trends.
- **Comprehensive HR offerings:** TCS offers a comprehensive portfolio of HR offerings spanning recruitment, talent, payroll, well-being, and training, well-supported by solid consulting and technology capabilities. Our end-to-end HR solutions help organizations streamline operations, enhance employee experience, and drive business growth and performance.

(Source: Enabling Future-Ready Human Resource Operations: <https://www.tcs.com/what-we-do/services/cognitive-business-operations/>)

AI tools improve the skills of employees, streamlines operations, boosts productivity and simplifies recruitment and training process. AI is also applicable in other functions performed in the organization viz marketing, finance and compliance.

5.1.3 Challenges

Apart from the benefits to the organisation and its client AI also poses various challenges as listed below:

- i. Lack of availability of high quality of data.
- ii. It becomes difficult to incorporate AI technologies with Clients and organisations having outdated IT infrastructure.
- iii. AI technologies implementation faces ethical concerns therefore it needs to be aligned with the international regulations.
- iv. There is lack of clarity, transparency and accountability of data.
- v. Issues related to algorithmic biasness, data privacy, incorporation and resistant employee is generally faced in adopting AI technology.

5.2 CONCLUSION AND RECOMMENDATIONS

The study shows that AI technologies have transformed the HRM Practices for benefitting the organisation and the employees. AI Practices has automated the HRM system, reduced the cumbersome work giving faster outcome, reducing workload, helps in giving quicker solution especially for lengthy documents and has upgraded the skills of the employees in the organisation leading to continuous growth. AI also give response in native language, interpreting the query in minutes and giving specific and optimal reply. It also helps in digitalization of past documents, images and helps in model development of the same.

Thus, it can be concluded that AI if used with caution and proper regulation can help organisation reach leaps and bounds. AI not only helps in HRM practices but assists in forecasting revenue and consumer behaviour. It helps in understanding the content, compliance and frauds of all documentation. Therefore, there is immense scope of research in AI platform from finance to marketing and all other functions of the organisation as AI is all pervasive.

5.2.1 Recommendations:

1. As AI helps in strategic planning, workforce development and organisational growth with it AI should be integrated strategically into HR function rather than for automation.
2. Organisation should train their HR professionals and employees on AI platforms for continual upskilling in this dynamic environment.
3. Introduce ethical and social aspect of AI in HRM in academics and training sessions. In addition to this, support should be provided by governmental and non-governmental enterprises for research and innovation in AI-enabled HR practices.
4. AI algorithm bias in recruitment and performance evaluation should be minimised to ensure transparency. Also, proper regulations should be implemented in protecting employee data base.
5. Proper guidelines should be framed for implementation of AI in diverse sectors.

A rational approach needs to be adopted to integrate AI (technological innovation) with HR practices focusing on ethical & social aspect. By incorporating the above recommendation organisations implementing AI would face lesser challenges fostering long term development.

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