

Comparative Study of Traditional HR Vs AI- Driven HR Systems

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Abstract:

This paper explores the movement from traditional HR to AI- driven HR. Human resource is one of the crucial aspects in every organization, which is considered as the backbone for managing the personnel in the concern. The traditional HR depends on the manual work from recruiting to the career development of the employees, whereas the AI-driven HR handles the entire systems of the human resource by the help of automated tools. The application of AI in hiring, automated selection, and predicting output success further improves employee growth and performance through on-going monitoring and tailored feedback. AI also improves the employee participation by giving insights from sentiment analysis and coming up with customized interaction. This extensive formation highlights the value of adapting to AI technologies by the organization to preparing the HR professionals as strategic mates in driving company's victory.

Keywords: Digital Transformation, AI-Driven HR, Human Resource Management, Strategic HRM, Traditional HR

Introduction:

The person who is responsible for managing the workforce of an organization is known as HR manger, and the division that is responsible for handling the entire employee lifespan is known as human resource management. Its main aim is to make sure that the organization maintains their work and activities according to the legal compliance and the workforce do their work effectively and efficiently that helps in enhancing their productivity and morale. With the rise of Industry 4.0, attention has shifted to its impact on the digital transformation of human resource processes within organizations (Strohmeier, 2014). HRM is the deliberate and coherent approach in which there is the effective and efficient governance of workforce in a company so that they help them to attain a competitive edge. It is also responsible for maximizing employee performance within the organization. The human relation movement is created by HR in which the researcher started documenting the ways of creating concern for value through the strategic arrangement of the personnel.

Review of Literature:

Khushk et al. (2026) studied the human resource management practices in the automobile industry in China have been transformed with the help of artificial intelligence. It focused on the three main aspects, such as AI acceptance by the employees, career growth and development, as well as the overall performance of the organization. The findings indicate that with the help of AI, work and activities of HR become easier and enhance the overall experience of the workers, and it also improves the performance of the company, which includes efficiency, productivity, and flexibility.

Barach, J. (2026): explored how cloud-based HR activities are now popular and they also face the variety of cybersecurity issues. Traditional methods are not enough because it involves regular services and privacy protection as well. This study introduces the new security framework called the moving target defense for HR. The system continuously replaces the parts of the system and runs on the various Kubernetes and also uses an anomaly detector to review the HR functions. It is considered as the ethical as well as the strategic aspect of the traditional HR systems.

Fradelos, G. (2026): investigated the Honey Badger Management Framework (HBMF), as introduced by Georgios Fradelos, PhD, in The Honey Badger Guide (Version 1.4, published 2024), represents a novel agile management framework grounded in systems thinking and decision-making under uncertainty, designed for organizations operating with a hybrid workforce of human professionals and general-purpose AI assistants and agents. HBMF integrates short,

cancellable sprint cycles, clearly defined leadership roles, knowledge-facilitated transparency and robust ESG compliance. Underpinned by mathematical models and supported by multiple theoretical constructs, HBMF addresses the limitations of traditional and agile methodologies via the treatment of AI assistants as team members, by harnessing structured knowledge transfer while being compatible with the high-level organizational skeleton of most structures. HBMF is fully compatible with the use of AI focused on specific classes of problems in parallel with the general-purpose AI assistants and agents. This paper offers an expanded, in-depth analysis of HBMF, situating it within the broader management literature, comparing it with established frameworks, elucidating its mathematical and theoretical foundations, and presenting practical scenarios in Appendix A. Additionally, the advantages, protective mechanisms, and potential challenges of HBMF are discussed, with directions for future research outlined.

Gao et al. (2026) studied the acquisition of channel state information plays an important role in enhancing the performance of sixth-generation (6G) wireless communication systems. CSI extrapolation offers an effective solution to these issues by leveraging limited or partial CSI measurements to reconstruct or predict the full CSI, thereby substantially lowering the required overhead without compromising accuracy. Artificial intelligence considered as a strong weapon to advance CSI extrapolation, enabling more accurate and efficient inference across diverse channel conditions. Although research in this area is expanding rapidly, the literature still lacks a thorough and unified survey that synthesizes the latest developments in AI-based CSI extrapolation methods. This paper aims to fulfill the gap which provides first comprehensive review of AI-driven CSI extrapolation techniques, covering their current state, key limitations, and promising research avenues. We begin by outlining the foundational aspects of AI-driven CSI extrapolation. Building on these basics, we systematically examine the major categories of extrapolation approaches, both traditional model-based and modern AI-enhanced ones, across the primary domains: time, frequency, antenna, and multi-domain scenarios.

Bindra et al. (2025) investigated the new technologies and the digital transformation in HR practices due to the covid-19 pandemic because this is the reason of happening changes in the organizations for staying competitive. The companies who gain the competitive edge are adopting the digital technologies and also identifies the uncertainty with the help of technology that how the organizations are affected by it. It reveals that before 2018, there had simply automation in HR and after 2018, it focuses on the adoption of the advanced technologies. There is still gap between the organization and the technology.

Objectives of the study:

1. To compare traditional and AI-driven HR systems and analyse the importance of artificial intelligence in transforming contemporary HR practices.
2. To examine the strategic and ethical implications of AI-based Human Resource Management and provide theoretical grounding for effective AI–HR integration.

Research Methodology:

The study is theoretical and descriptive in manner, that is depend upon secondary data which is gathered from academic journals, books, industry reports, and credible online sources. Content analysis and comparative analysis methods are used

Traditional Human Resource Management:

In Traditional Human Resource Management, the workforce is controlled in a thorough and arranged manner following the various rules and regulations very strictly. The HR policies are consistent, fixed and structured that are followed by all whatever be the situation of both the business as well as the employees. It includes the process that is reactive in nature that means the HR unit responds to a change in the environment; sometimes it loses on time, which affects the competitive edge of the organization may result in losses. Strategies are basically relying on the strict management principles for managing people and the HR department. HR strategies do not integrate with the other departmental goals of the organization. It follows a partial approach. The department has to work in the area of various

employment laws, labour laws, factory act, etc. It is obligatory to maintain the industrial relations to ensure tranquility and viability. Traditional HRM policies are stiff, organized, fragmented and do not flourish when there is modification in the business surroundings over the extended period. Business goals and outcomes are supported by only the short-term policies and practices. The role of change follower that includes the transactional leadership is played by the HR manager, i.e. he/she responds to change. Traditional human resource has the important and primary element known as capital and products. Salary, wages, incentives, training, facilities, perks, etc. are considered as an expense in traditional HRM known as cost centric HRM. It believes that HR specializing in a specific task, skill remaining the same for a lifetime, and Individuals are given ambition that they have to achieve effectively and efficiently. The work is divided and designed according to the specialization of the workforce. Common activities involve manual record-keeping, strict policy enforcement, and handling conflicts when they arise.

Evolution of Artificial intelligence in HR systems:

The branch of computer science that deals with the intelligence of machines, where an intellectual agent is a system that takes actions which maximize its chances of accomplishment is known as artificial intelligence. It is a field of research that has the ability to perform the tasks such as learning, reasoning, problem-solving, perception and decision making. It is a science and engineering of making wise machines, especially intelligent computer programs to automate tasks. The realm of Human Resources (HR) has seen a significant conversion in recent years, largely due to the arrival of Artificial Intelligence (AI) technologies. Traditionally, HR units focused on handle employee records, directing recruitment processes, and assure compliance with labor laws. However, the preface of AI has started to revise this landscape in intense ways. AI innovations in HR are not just about robotizing day to day tasks; they represent a reposition towards more efficient, fact-based decision-making. This technology is promoting HR professionals to modernize their workflows, lessen biases in appointing and performance appraisal, and boost their overall strategic planning. From arranging through resumes to tailoring employee training programs, AI is making its mark.

Early adoption and integration of AI in HR

In the early phase, the role of AI in HR was completely major. It started with digitalizing basic activities like sorting through applications and directing jobholder records. This initial stage was more about testing the waters – go through how AI could handle basic, monotonous tasks that were time-taken for individuals. For many in HR, this was their first familiarity with AI, and it was a learning curve. They had to search out how to merge these new tools and techniques into their current systems and workflows. Contrarily, these early steps were just the tip of the iceberg. When the professionals got more comfortable with AI, they started to see its capacity for more perplexing tasks. This led to a slow movement to AI – not just as a device for automation, but as a companion in forming smarter, data-driven judgements. For example, AI started to represent an act in searching patterns in employee manners or forecasting staffing necessity based on company trends and patterns. But this amalgamation was not without its hurdles. There was responsibility for the precision of AI decisions, concerned about job security, and questions about how to maintain AI efficiency with the requirement for human judgment. Regardless of these barriers, the early acceptance of AI in HR laid the groundwork for more elite applications and set the path for the revolutionary changes that were eventually to come. This stage was crucial in making the base for the refined AI-HR relationship we see this day.

AI-Driven Innovations in HR practices

Human Resource Management is modified by AI by automating day to day activities, enhancing decision-making, and improving employee experience. Machine learning, natural language processing (NLP), chatbots, and predictive analytics to make HR more efficient, strategic, and data-driven such kinds of technologies are adapted by HR.

- **AI-Based Recruitment & Talent Acquisition:** AI tools screen resumes, match candidate skills with job requirements, and reduce time-to-hire. Chatbots handle initial candidate queries and scheduling interviews.
- **Intelligent Candidate Sourcing:** AI scans job portals, social media (like LinkedIn), and internal databases to identify passive and active candidates, improving talent reach and quality.
- **Bias Reduction in Hiring:** AI helps minimize human bias by focusing on skills, experience, and

performance data rather than personal attributes like gender, age, or background.

- **Automated Onboarding:** AI chatbots guide new hires through documentation, policies, and training modules, ensuring a smooth and consistent onboarding experience.
- **Performance Management & Analytics:** AI analyses employee performance data, provides real-time feedback, predicts future performance, and supports data-driven appraisal decisions.
- **Predictive Workforce Analytics:** AI predicts employee turnover, absenteeism, and workforce demand, helping HR plan retention strategies and manpower requirements proactively.

AI's Impact on strategic HR decision-making:

Strategic human resource management is a proactive process of managing employees in an organization, that includes standard human resource components such as attracting, developing, rewarding, and retaining employees and brings them one step further by taking in consideration the goals and needs of other departments within the organization, and the organization itself.

It's important to analyze organization-wide goals and needs, including all departments, and create a strategy for managing employees that is aligned with the overall vision, mission and values of the particular organization. The end-goal of the strategic human resource management is ensuring an improved business performance and organization's success. AI's introduction into HR has not just changed daily tasks; it's also reshaped strategic decision-making. With AI, HR professionals can now analyze vast amounts of data to make informed decisions about the workforce. This includes understanding employee needs, predicting future staffing requirements, and even identifying potential leaders within the organization. One key area where AI aids strategic decision-making is in workforce planning. Gartner predicts that by 2024, 52% of large enterprises will use AI in HR for talent management. AI algorithms can predict staffing needs based on company growth, employee turnover rates, and market trends. This helps HR departments prepare better for future hiring, ensuring they have the right people with the right skills at the right time. AI also plays a crucial role in enhancing employee engagement strategies. By analyzing employee feedback and performance data, AI can identify what motivates employees, what training they need, and how to improve their job satisfaction. This leads to more effective employee engagement programs that are tailored to individual needs and preferences. These successes demonstrate AI's potential to transform HR into a more data-driven and strategic function, crucial for the overall success of an organization.

Ethical considerations and challenges:

As AI is most usual in HR activities, ethical problems become very crucial. Its major concern is it is biased. The system used by AI has large amounts of data, and if that data contains bias, the AI makes unfair hiring or promotional decisions. To protect this, HR departments should regularly check, regulate and audit their systems. A study by McKinsey & Company found that 58% of HR executives believe that AI would help in reducing the biasness, but still proper monitoring is required. Another important aspect is the data security. Sensitive employee information like personal details and performance records are secured by the data security. HR teams must work with IT experts to protect this data from cyberattacks and follow privacy laws and policies. AI cannot replace human qualities like empathy, emotional understanding, and conflict handling. Therefore, HR professionals must balance AI technology with human judgment to create a respectful and supportive workplace. In short, AI in HR is helpful, but it must be used carefully, ethically, and with proper human involvement.

Theoretical perspectives:

It focuses on transforming traditional HR into a strategic, data-driven function, blending technological efficiency with human-centred approaches. It involves the key theories such as;

Technology Acceptance Model:

TAM defines how HR experts and employees accept the AI based on usefulness and perceived ease of use.

AI-driven HR tools are more likely to be adopted when users believe they improve efficiency (e.g., faster recruitment) and are easy to operate.

Unified Theory of Acceptance and Use of Technology:

It is the extension over TAM by including factors such as performance appraisal, effort expectancy, societal influence, and fulfilling conditions.

This theory helps explain why AI adoption in HR depends on organizational support, peer influence, and infrastructure readiness.

Resource-Based View (RBV):

This perspective emphasizes investment in employee skills and knowledge. AI-based learning platforms and talent analytics enhance human capital by identifying skill gaps and delivering personalized training.

Innovation Diffusion Theory (Rogers):

This theory explains how AI innovations spread across organizations through the various stages. AI-HR gain efficiency and employer branding advantages over late adopters.

Socio-Technical Systems Theory:

AI-HR systems are seen as an interaction between technology (AI tools) and social systems (employees, culture, leadership).

Successful AI adoption in HR requires balancing automation with human judgment and ethical considerations.

Institutional Theory:

Organizations adopt AI in HR to gain legitimacy, comply with industry norms, or follow competitors. AI adoption may be influenced by regulatory pressure, professional standards, or market expectations rather than efficiency alone.

Dynamic Capabilities Theory:

It enhances the organization's capacity to seize, and transform HR processes which response to changing environments. This is especially relevant in volatile labor markets and digital transformation contexts.

Most importantly, the findings indicate that the shift from traditional HR to AI-driven that is not a technological upgrade but a strategic transformation of the HR function itself. AI empowers HR professionals to assume a more strategic role by providing actionable insights that support evidence-based decision-making. When combined with human judgment, ethical oversight, and organizational values, AI enhances rather than replaces the human element in HR. This balanced integration ensures fairness, transparency, and accountability in HR practices while preserving empathy and trust within the workplace.

The comparative analysis presented in this paper demonstrates that AI-driven HR systems enhance decision-making quality, operational efficiency, and workforce agility of technologies such as machine learning, predictive analytics, natural language processing, and automation. These systems allow organizations to proactively manage talent acquisition, workforce planning, performance management, and employee engagement. Unlike traditional HR, which primarily supports short-term organizational needs, AI-enabled strengthening organizational competitiveness and sustainability.

Implications of the Study:

Managerial Implications: Managers are enabling to make more informed and strategic decisions by relying on data-driven insights rather than intuition alone by the acquiring of AI in HR. the tools of AI support the strategic HR decision-making by improving talent acquisition, performance evaluation, and retention strategies. Upgrade workforce arrangement becomes possible with the help of predictive analytics, whereas personalized employee engagement initiatives boost the organizational commitment. Additionally, transparency, fairness, and accountability in HR processes are encouraged by the integration of ethical AI frameworks. For HR professionals, the increasing use of AI

necessitates continuous upskilling in data analytics, AI tools, and digital HR platforms. Their role is gradually shifting from administrative and transactional activities to more strategic and consultative responsibilities. HR professionals also carry an ethical responsibility so that AI applications are unbiased, inclusive, and placed by organizational system, thereby safeguarding employee trust and organizational integrity.

Organizational Implications: At this level, AI-driven HR systems remarkably increase efficiency and productivity by automating routine and time-consuming HR activities. This automation reduces operational costs and minimizes human errors, allowing organizations to allocate resources more effectively. Improved HR responsiveness and accuracy contribute to better employee experiences, leading to enhance employee satisfaction, motivation, and performance of the organizations.

Academic Implications: From an academic perspective, the integration of AI in HR provides a strong conceptual base for further research and theory development. It enables the blending of traditional HR theories with modern AI applications, offering new dimensions to human resource management studies. Furthermore, examining AI's impact on HR roles in the Indian context opens avenues for context-specific research, contributing valuable insights into workforce transformation in emerging economies.

Conclusion:

Organizations that effectively combine AI capabilities with human expertise will be better positioned to enhance employee experience, improve organizational performance, and respond proactively to changing business demands. The study reinforces that AI-driven HR systems, when implemented responsibly, can transform HR into a partner that give the success directly. As organizations continue to navigate digital transformation, the future of HR lies in harmonizing innovation by human-centred approach to achieve sustainable and long-term value creation. This study critically examined the conversion from conventional Human Resource Management to AI-driven HR systems, highlighting a significant paradigm shift from organizations control its people in the era of digital transformation. Traditional HR systems have historically played an essential role in ensuring administrative efficiency, regulatory compliance, and workforce stability. However, their dependence on manual processes, rigid policies, and reactive decision-making has increasingly limited their effectiveness in responding to dynamic business environments. In contrast, AI-driven HR systems represent a strategic evolution that enables organizations to move beyond transactional HR functions toward a more integrated, data-driven, and future-oriented approach to human resource management.

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