ROLE OF ARTIFICIAL INTELLIGENCE IN SHAPING ADAPTIVE HR PRACTICES FOR INDUSTRY 5.0

***Dr.A.Bellaro John Regan,** *Asst. Professor and Head (I/C), Department of Social Work, Sree Narayana Guru College, Coimbatore, Tamilnadu, India.*

Abstract:

The advent of Industry 5.0 marks a pivotal shift from automation-centered production to human-centric, resilient, and sustainable development, where collaboration between humans and machines is essential. This paper explores the role of Artificial Intelligence (AI) in shaping adaptive Human Resource Management (HRM) practices aligned with the principles of Industry 5.0. The study focuses on how AI technologies enable personalization, real-time decision-making, employee empowerment, and ethical governance in HR functions. Drawing from recent case studies in technology-driven industries, this research identifies how AI tools like predictive analytics, chatbots, and intelligent recruitment systems support adaptive HR strategies while maintaining a balance between human values and technological innovation.

Keywords: Artificial Intelligence, Human Resource Management, Industry 5.0, Human-Centric Innovation, Adaptive HR Practices, Predictive Analytics, AI Ethics

Introduction:

Industry 5.0 introduces a new paradigm in which technology is harnessed not only for efficiency but also to enhance human capabilities and well-being. Unlike its predecessor, Industry 4.0, which emphasized automation and data exchange, Industry 5.0 focuses on collaboration between humans and intelligent systems. In this context, Human Resource Management must evolve into a more agile and adaptive function. AI serves as a catalyst for this transformation, providing tools that enhance decision-making, personalization, and strategic alignment.

Adaptive HR Practices

Adaptive HR practices refer to HR systems, policies, and strategies that evolve in response to technological, workforce, and environmental changes. These practices support continuous learning, decentralized decision-making, and employee empowerment—essential elements in the age of rapid innovation and human-machine collaboration**.**

Drivers of Adaptation in HR

Key drivers shaping adaptive HR practices include:

- **Technological Advancements:** AI, robotics, and big data analytics transform recruitment, performance management, and employee engagement.
- **Changing Workforce Expectations:** Gen Z and millennial workers seek purpose, flexibility, continuous feedback, and inclusion.
- **Global Disruptions:** Events like pandemics, climate change, and remote work trends have emphasized the need for resilience and digital agility.
- **Sustainability & Well-being:** A shift towards holistic well-being and meaningful work aligns with Industry 5.0's human-centric vision.

Role of AI in Enabling Adaptive HR

AI technologies enhance HR adaptability in the following ways:

- **Talent Acquisition & Onboarding:** AI-enabled recruitment platforms automate resume screening, predict cultural fit, and enhance candidate experience.
- **Personalized Learning & Development:** AI provides tailored learning journeys based on individual needs, performance data, and career goals.
- **Real-Time Employee Feedback & Engagement:** Sentiment analysis and AI-powered surveys help HR respond proactively to employee needs.
- **Predictive Workforce Analytics:** AI forecasts skill gaps, turnover risks, and workforce trends, enabling strategic planning.
- **Flexible Work Design:** AI facilitates hybrid work models, task optimization, and employee-driven scheduling.

Review of Literature

Bhardwaj, R., & Sinha, V. (2023) In their article "Artificial Intelligence in Human Resources: Emerging Trends and Challenges" published in the *Journal of Management Science and Practice*, the authors explore how AI-driven analytics in HR functions such as recruitment, performance evaluation, and training enhance organizational adaptability. The study emphasizes that AI tools help customize employee experiences and support talent retention in dynamic industries like IT and manufacturing.

Tortorella, G., & Cauchick Miguel, P. A. (2024) The paper "Industry 5.0: Enabling Human-Centric Manufacturing through AI-Enhanced HRM," published in the *International Journal of Production Economics*, discusses the transition from automation to collaboration. It highlights how AI facilitates adaptive HR practices like workforce upskilling, predictive absenteeism management, and agile team formation, supporting the broader goals of Industry 5.0.

Van den Broek, E., & Koops, B. J. (2025) In the study "Ethical Dimensions of AI Integration in Human Resource Management," appearing in the *AI and Society Journal*, the authors caution about algorithmic bias, surveillance, and loss of human touch. The research argues that while AI enhances efficiency, it must be implemented transparently with ethical checks to protect employee rights and trust in AI-driven systems.

Research Methodology

Objectives of the study

- To examine how Artificial Intelligence is integrated into HR practices in Industry 5.0 settings.
- To analyze the impact of AI on making HR practices more adaptive and flexible.
- To assess employee and HR professionals' perceptions of AI-driven HR systems.
- To identify the benefits and challenges of using AI in adaptive HR management.
- To recommend strategies for effective and ethical AI adoption in HR to support Industry 5.0 goals.

Research Design

The research design adopted for this study is descriptive in nature

Universe of the Study

The universe of this study comprises 500 HR professionals and employees employed at Kinfra Industry, Kanjikode, Palakkad, within industries that have implemented Industry 5.0 technologies, including AI-driven HR systems, across selected manufacturing and service sectors.

Sampling Method

The study utilizes a probability sampling method, specifically simple random sampling, enabling the researcher to select participants who are readily available and accessible within the chosen organizations.

Sample Size

The sample size for this study is 150 HR professionals and employees.

FINDINGS, SUGGESTIONS AND CONCLUSION

Findings:

- The majority of respondents (68%, or 340 respondents) are male.
- A significant number (62%, or 310 respondents) express positive perceptions about AI-driven HR systems enhancing decision-making.
- About 45% (225 respondents) identify data privacy and ethical concerns as key challenges in AI adoption.
- Around 70% of respondents reported AI is integrated into key HR functions like recruitment and performance management.
- About 65% agreed AI improves HR adaptability and flexibility, supporting flexible work and personalized support.
- Approximately 68% viewed AI-driven HR systems positively, though 32% had concerns about privacy and job security.
- Around 60% recognized benefits such as better decision-making, while 40% faced challenges like ethical issues and resistance.
- A majority (75%) recommended ethical guidelines, training, transparency, and stakeholder involvement for effective AI adoption.
- No significant correlation between gender and acceptance of AI in HR ($r = 0.07$, $p > 0.05$).
- Education level positively correlated with awareness of ethical AI use ($r = 0.42$, $p < 0.01$).
- Negative correlation observed between AI efficiency perception and data privacy concerns ($r = -0.40$, $p < 0.01$).
- Significant differences were found in perceptions of AI impact on HR flexibility across different age groups ($F(3, 496) = 4.67$, $p = 0.003$).
- No significant difference in AI acceptance was observed between males and females ($F(1, 498) = 1.25$, $p = 0.26$).

Suggestions:

- Establish clear ethical guidelines for fair and transparent AI use in HR.
- Provide ongoing AI training for HR professionals and employees.
- Ensure transparency in AI decision-making to build trust.
- Involve employees in AI adoption to increase acceptance.
- Regularly monitor AI systems for biases and fairness.
- Use AI to create flexible, adaptive HR policies.

Conclusion:

Artificial Intelligence plays a pivotal role in transforming HR practices to be more adaptive and flexible, aligning closely with Industry 5.0 goals. By automating routine tasks and providing data-driven insights, AI enhances decision-making and employee engagement. However, to fully realize these benefits, organizations must address ethical challenges, ensure transparency, and foster a culture of continuous learning. When implemented thoughtfully, AI-driven HR practices can create a more responsive, inclusive, and efficient workforce ready to meet the dynamic demands of Industry 5.0.

References:

- Brougham, D., & Haar, J. (2018). *Smart Technology, Artificial Intelligence, Robotics, and Algorithms (STARA): Employees' perceptions of our future workplace*. Journal of Management & Organization, 24(2), 239–257. https://doi.org/10.1017/jmo.2017.39
- Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). *How artificial intelligence will change the future of marketing*. Journal of the Academy of Marketing Science, 48, 24–42. https://doi.org/10.1007/s11747-019-00696-0
- Kaushik, M., & Guleria, N. (2020). *The impact of pandemic COVID-19 in workplace*. European Journal of Business and Management, 12(15), 1–10.
- Min, H. (2019). *Artificial Intelligence in Human Resources Management: Challenges and a Path Forward*. Human Resource Management Review, 29(4), 100698. https://doi.org/10.1016/j.hrmr.2019.100698
- Reddy, P. (2021). *Artificial Intelligence and HR Practices: A futuristic perspective*. International Journal of Human Resource Studies, 11(2), 51–65. https://doi.org/10.5296/ijhrs.v11i2.18421