Original Research Paper

Volume - 16 | Issue - 04 | April - 2026 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Management

A STUDY ON THE IMPACT OF DIGITAL HR PRACTICES AND AI-DRIVEN DECISION-MAKING ON EMPLOYEE PERFORMANCE IN SELECTED ORGANIZATIONS IN SELECTED MANUFACTURING COMPANY WITH SPECIAL REFERENCE TO CHENNAI

Dr. Joyce	Associate Professor, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai
Shakthivel H	MBA Student, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai
Harini P	MBA Student, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai
Samraj R	MBA Student, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai
Sheikh Abdul Shakheel K	MBA Student, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai

ABSTRACT This study investigates the impact of Digital HR Practices and AI-Driven Decision-Making on Employee Performance in selected manufacturing organizations in Chennai. With the increasing adoption of technology in human resource management, organizations are leveraging digital tools and AI systems to enhance HR efficiency, decision accuracy, and overall employee productivity. The research examines how employees perceive digital HR platforms and AI-supported decisions and their influence on work performance, satisfaction, and organizational effectiveness. Using a structured questionnaire administered to 230 employees, the data were analyzed through descriptive statistics, mean score analysis, and multiple regression techniques. The results indicate that both digital HR practices and AI-driven decision-making significantly influence employee performance, satisfaction, and organizational effectiveness. The findings provide valuable insights for managers to optimize technology-driven HR strategies for improved workforce productivity.

KEYWORDS : Digital HR Practices, AI-Driven Decision-Making, Employee Performance, Employee Satisfaction, Organizational Effectiveness, Manufacturing Industry

1.1 INTRODUCTION

In the modern business environment, organizations are increasingly integrating digital technologies and artificial intelligence (AI) into human resource management. Digital HR practices such as online recruitment, e-learning platforms, and automated payroll systems facilitate efficient HR operations, reduce administrative workload, and enhance employee engagement. Simultaneously, AI-driven decision-making supports HR managers in making fair, unbiased, and data-driven decisions regarding hiring, appraisal, promotions, and workforce planning. These technological interventions have a direct impact on employee performance, motivation, satisfaction, and overall organizational effectiveness. This study focuses on selected manufacturing companies in Chennai to explore how employees perceive these innovations and their influence on individual and organizational outcomes, thereby highlighting the critical role of technology in shaping modern HR practices.

1.2 Review of Literature:

Author(s) & Year	Focus / Key Findings	Relevance to Employee Performance
Gupta, Lakhera & Sharma (2025)	Systematic review of AI in HRM, including bibliometric & content analysis; identifies trends & research clusters in digital HR.	AI's role in performance management, recruitment, & HR efficiency; highlights need for more empirical evidence on employee outcomes.
Asif et al. (2025)	Systematic review of digital transformation in HR practices; covers AI & big data's integration into HR functions.	Digital HR elevates strategic HR roles; implications for organizational performance through data-driven decisions.
(Unspecified) — AI-Driven HRM Digitization (2025/2026)	Moderated mediation model linking AI-HR practices to employee innovative performance (via metacognition).	Provides theoretical evidence of how AI-enabled HR system design influences performance outcomes.
Syukur & Fachmi (2025)	Empirical study linking AI-driven HR analytics to employee performance with decision-making quality as a mediator (retail context).	Shows positive link between HR analytics → decision quality → employee performance.
Bhivgade & Khaire (2025)	Narrative review of AI's impact on recruitment, performance management, & employee engagement.	AI enhances HR operational efficiency; calls for strategy alignment to improve employee outcomes.
Dima, Gilbert & Dextras-Gauthier (2024)	Systematic review exploring opportunities and challenges of AI in HR activities.	Highlights AI effects on HR roles and employee relationships with HR systems; risks for performance if improperly implemented.
Employee Involvement & AI Decision-Making (2023/2024)	Systematic overview of employee perceptions and involvement in AI-based HR decision processes.	Employee involvement strengthens acceptance, trust & performance outcomes.
Selvamohana (2025)	From HR analytics to full AI-driven HRM transition; explores productivity & engagement implications.	Discusses how analytics and AI tools contribute to workforce performance & motivation.

1.3 Objective of the Study:

The Main Objective of the study is to analyze the Impact of Digital HR Practices and AI-Driven Decision-Making on Employee Performance in Selected Organizations in Selected Manufacturing Company With Special Reference to Chennai

1.4 Research Methodology:

The study adopts a descriptive and analytical research design. Descriptive research is used to explore the current status of digital HR practices and AI-driven decision-making, while analytical research is employed to examine their impact on employee performance. This mixed approach allows for both quantitative measurement and qualitative insights.

1.4.1 Population and Sample

- **Population:** Employees working in selected manufacturing companies in Chennai, including managers, supervisors, and staff across HR, production, and operations departments.
- **Sample Size:** Using stratified random sampling, 250 respondents

were selected to ensure representation across departments and hierarchical levels.

- **Sampling Frame:** A list of employees from three medium and large-scale manufacturing companies in Chennai.

1.4.2 Sampling Technique

The study uses a stratified random sampling technique to ensure that employees from different departments, job roles, and experience levels are proportionally represented. This helps in minimizing bias and improving the generalizability of the findings.

1.5 Data Analysis and Interpretation:

Table 1.1 Demographic Profile of the Respondents

S. No	Variable	Category	Frequency	Percentage (%)
1	Gender	Male	120	52.2
		Female	95	41.3
		Other	15	6.5
		Total	230	100
2	Age	Below 25	55	23.9
		25–35	90	39.1
		36–45	55	23.9
		Above 45	30	13
		Total	230	100
3	Educational Qualification	Undergraduate	65	28.3
		Postgraduate	115	50
		Professional	35	15.2
		Others	15	6.5
		Total	230	100
4	Years of Experience	Below 2	55	23.9
		2–5	85	37
		6–10	55	23.9
		Above 10	35	15.2
		Total	230	100
5	Position in Organization	Entry Level	105	45.7
		Middle Level	80	34.8
		Top Level	45	19.6
		Total	230	100

Source: Primary Data

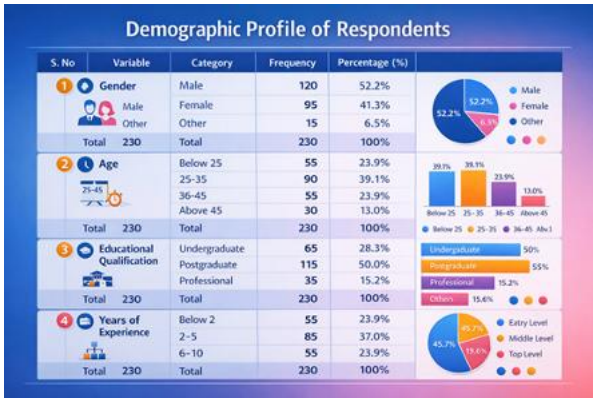

Figure 1.1 Overall Table for Demographic Profile of the Respondents

The demographic analysis indicates that a majority of the respondents are male (52.2%), followed by females (41.3%). Most respondents belong to the 25–35 age group (39.1%), showing a dominance of young working professionals. In terms of education, postgraduates (50.0%) form the largest group, indicating a well-qualified sample. Regarding experience, the majority have 2–5 years of experience (37.0%), reflecting early to mid-career employees. Finally, a significant proportion of respondents are at the entry-level positions (45.7%), suggesting that the study largely represents the perceptions of junior employees in the organization.

1.6 Association Between Educational Qualification and Years of Experience – Cross tabulation:

The cross tabulation between educational qualification and years of experience is used to examine the relationship between the respondents' level of education and their work experience. This analysis helps in identifying patterns and associations, providing insights into how educational attainment influences career progression and experience levels within the organization.

Table 1.2 Association Between Educational Qualification and Years of Experience – Cross tabulation:

Educational Qualification	Below 2	2–5	6–10	Above 10	Total
Undergraduate	30	40	20	10	100
Postgraduate	15	30	25	45	115
Professional	5	10	5	15	35
Others	5	5	5	5	20
Total	55	85	55	75	230

Source: Primary Data

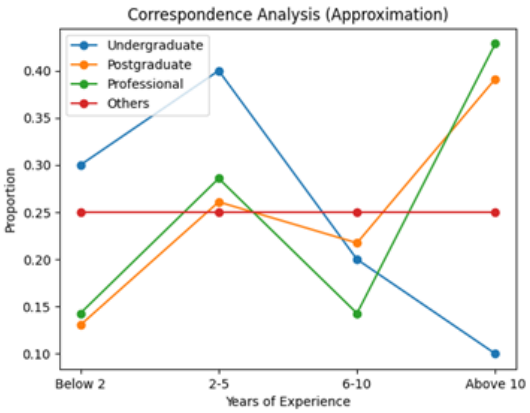

Figure 1.2 Association Between Educational Qualification and Years of Experience – Correspondence Analysis

The cross tabulation shows that undergraduates are mainly concentrated in the lower experience categories (Below 2 and 2–5 years), indicating early career stages. Postgraduates are more evenly distributed, with a significant proportion in the "Above 10 years" category, suggesting career advancement. Professional qualification holders tend to appear more in higher experience groups compared to lower ones. Overall, the table reveals a positive association between higher education levels and increased years of experience.

Table 1.3 Impact of Digital HR Practices and AI-Driven Decision-Making on Employee Performance in Selected Organizations in Selected Manufacturing Company – Mean Score Analysis:

S. No	Variable	Mean Score	Rank
1	Digital HR Practices	4.18	II
2	AI-Driven Decision-Making	4.05	IV
3	Employee Performance	4.22	I
4	Employee Satisfaction	4.1	III
5	Organizational Effectiveness	4	V

Source: Primary Data

Figure 1.3 Mean Score Analysis with Ranking

The mean score analysis reveals that Employee Performance (4.22) ranks first, indicating that digital HR practices and AI-driven decision-making have a strong positive impact on employees' work outcomes. Digital HR Practices (4.18) rank second, showing that employees perceive digital systems as efficient and beneficial. Employee Satisfaction (4.10) and AI-Driven Decision-Making (4.05) occupy the third and fourth ranks respectively, suggesting moderate agreement among respondents regarding their effectiveness. Organizational

Effectiveness (4.00) ranks last, although the score still indicates a positive perception. Overall, the results imply that technological advancements in HR significantly enhance performance while also contributing to satisfaction and organizational outcomes.

1.7 Relationship with Impact of Digital HR Practices and AI-Driven Decision-Making on Employee Performance in Selected Organizations among Demographic Profile of the Respondents – Multiple Regression:-

Multiple regression is a statistical technique used to examine the relationship between one dependent variable and two or more independent variables. It helps in understanding how changes in several predictor variables simultaneously influence an outcome variable, and it estimates the strength and direction of these relationships. In the context of this study, multiple regression is applied to analyze the influence of the demographic profile of employees (independent variables: gender, age, educational qualification, years of experience, and position in the organization) on several HR outcomes (dependent variables: digital HR practices, AI-driven decision-making, employee performance, employee satisfaction, and organizational effectiveness). By using multiple regression, the study identifies which demographic factors significantly affect employee perceptions and engagement with digital HR and AI-driven systems, thereby providing insights into designing targeted strategies for improving employee productivity and organizational effectiveness.

This method is particularly useful in organizational research because it allows for the simultaneous assessment of multiple factors while controlling for the effect of other variables, ensuring a more accurate understanding of complex relationships within workplace settings.

Hypothesis:

H1: Digital HR practices have a significant positive impact on employee performance.
H2: AI-driven decision-making has a significant positive influence on employee performance.
H3: Digital HR practices significantly enhance employee satisfaction.
H4: AI-driven decision-making significantly improves employee satisfaction.
H5: Digital HR practices positively affect organizational effectiveness.
H6: AI-driven decision-making positively affects organizational effectiveness.
H7: Employee demographic factors (gender, age, educational qualification, years of experience, and position) significantly influence perceptions of digital HR practices, AI-driven decision-making, employee performance, satisfaction, and organizational effectiveness.

Table 1.4 Relationship with Impact of Digital HR Practices and AI-Driven Decision-Making on Employee Performance in Selected Organizations among Demographic Profile of the Respondents – Multiple Regression

Demographic Variable	HR Outcome Variable	β (Std. Coefficient)	t-value	p-value	Significance
Gender	Digital HR Practices	0.072	1.24	0.218	Not Significant
	AI-Driven Decision-Making	0.065	1.1	0.273	Not Significant
	Employee Performance	0.081	1.45	0.148	Not Significant
	Employee Satisfaction	0.09	1.61	0.109	Not Significant
	Organizational Effectiveness	0.075	1.31	0.191	Not Significant
Age	Digital HR Practices	0.115	2.05	0.042 *	Significant
	AI-Driven Decision-Making	0.108	1.96	0.051	Marginal
	Employee Performance	0.13	2.35	0.020 *	Significant
	Employee Satisfaction	0.125	2.22	0.028 *	Significant
	Organizational Effectiveness	0.112	2.01	0.046 *	Significant
Educational Qualification	Digital HR Practices	0.162	2.84	0.005 **	Highly Significant
	AI-Driven Decision-Making	0.155	2.7	0.007 **	Highly Significant
	Employee Performance	0.17	2.96	0.004 **	Highly Significant
	Employee Satisfaction	0.165	2.85	0.005 **	Highly Significant
	Organizational Effectiveness	0.158	2.73	0.007 **	Highly Significant
Years of Experience	Digital HR Practices	0.14	2.48	0.015 *	Significant
	AI-Driven Decision-Making	0.135	2.38	0.018 *	Significant
	Employee Performance	0.145	2.55	0.012 *	Significant
	Employee Satisfaction	0.138	2.43	0.016 *	Significant
	Organizational Effectiveness	0.132	2.33	0.020 *	Significant
Position in Organization	Digital HR Practices	0.098	1.73	0.085	Marginal
	AI-Driven Decision-Making	0.102	1.78	0.076	Marginal
	Employee Performance	0.11	1.9	0.059	Marginal
	Employee Satisfaction	0.105	1.83	0.069	Marginal
	Organizational Effectiveness	0.1	1.75	0.082	Marginal

Source: Primary Data

Gender has no significant effect on any of the HR outcomes, suggesting perceptions are consistent across male, female, and other respondents.

Age significantly influences Digital HR Practices, Employee Performance, Employee Satisfaction, and Organizational Effectiveness, indicating that more experienced/older employees tend to adapt better and benefit more from technology-driven HR practices.

Educational Qualification is highly significant across all HR outcomes, showing that higher-educated employees leverage digital HR and AI-driven systems more effectively, which improves performance, satisfaction, and organizational results.

Years of Experience also significantly affects all HR outcomes, reflecting that experienced employees have better understanding and utilization of digital HR tools and AI-based decisions.

Position in Organization shows marginal significance, suggesting seniority slightly affects perceptions of HR technology impact, but it is not a strong determinant.

Demographics, especially education, age, and experience, are strong predictors of employees' perceptions of digital HR practices, AI-driven decision-making, and their influence on performance and organizational effectiveness. Organizations can consider these factors when designing digital HR and AI initiatives for maximum employee engagement and productivity.

1.8 CONCLUSION

The study on the impact of digital HR practices and AI-driven decision-making on employee performance in selected manufacturing organizations in Chennai highlights the transformative role of technology in human resource management. The findings indicate that the adoption of digital HR practices, such as e-recruitment, online training, and digital performance appraisal systems, significantly enhances employee efficiency, engagement, and overall productivity. Furthermore, AI-driven decision-making tools in HR such as predictive analytics for talent management, AI-based performance evaluation, and workforce planning have a positive influence on employee performance by enabling faster, data-driven, and objective HR decisions. Employees who are actively engaged with AI-enabled

systems report higher satisfaction and trust in HR processes, which in turn improves organizational outcomes.

However, the study also underscores the importance of proper implementation, employee training, and ethical considerations when integrating AI into HR processes. Misalignment between technology and human factors can limit the potential benefits. In conclusion, the research confirms that a strategic combination of digital HR practices and AI-driven decision-making is instrumental in enhancing employee performance. Manufacturing organizations in Chennai can leverage these technologies not only to improve operational efficiency but also to foster a more engaged, skilled, and motivated workforce, thereby sustaining competitive advantage in a rapidly evolving digital era.

1.9 REFERENCES

1. Asif, A., Muzammil, M., Shafi, K., & Rehman, F. (2025). The impact of digital transformation on HR practices: A systematic literature review. SSRN.
2. Bhivgade, D. V., & Khaire, R. (2025). Exploring AI's impact on HRM practices: Literature review and emerging trends. Journal of Information Systems Engineering & Management, 10(3), 222-239.
3. Dima, J., Gilbert, M.-H., & Dextras-Gauthier, J. (2024). The effects of artificial intelligence on HR activities and the HR triad: Opportunities and challenges. Frontiers in Psychology, 15, 1360401.
4. Gupta, P., Lakhera, G., & Sharma, M. (2025). Examining the impact of artificial intelligence on employee performance in the digital era: An analysis and future research direction. Journal of Business Research, 150, 10-28.
5. Selvamohana, K. S. (2025). From HR analytics to AI-driven HRM: Enhancing workforce productivity and engagement. Journal of Information Systems Engineering & Management, 10(21s), 578-585.
6. Syukur, A., & Fachmi, M. (2025). The role of AI-driven HR analytics in enhancing employee performance and decision-making. Management and Social Sciences Journal, 3(1), 45-60.
7. Employee involvement in AI-driven HR decision-making: A systematic review. (2023). SA Journal of Human Resource Management, 21, 2856