



Artificial Intelligence-Driven HRM and Women Employee Retention in the IT Industry: Emerging Opportunities and Strategic Challenges

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Abstract- The rapid adoption of Artificial Intelligence (AI) is transforming Human Resource Management (HRM) by changing how organisations recruit, develop, evaluate, engage and retain employees. The impact of these technologies is particularly significant in the Information Technology (IT) industry, where organisations operate in highly competitive and rapidly changing work environments. At the same time, retaining women employees remains an important organisational concern because career interruptions, limited advancement opportunities, work-life pressures, inadequate organisational support and changing workplace expectations can influence women's continuity in employment. AI-driven HRM may provide organisations with new mechanisms for personalised learning, career development, workforce analytics, employee engagement and early identification of turnover risks. This conceptual study examines the role of AI-driven HRM practices in supporting the retention of women employees in the IT industry. The study is based on a review and synthesis of secondary sources, including scholarly literature and reports concerning AI, HRM, employee retention, gender and digital transformation. The study concludes that responsible AI governance, human oversight, inclusive design, transparent decision-making and continuous employee development are essential for ensuring that AI-driven HRM contributes to sustainable and inclusive employee retention.

Keywords- Artificial Intelligence, Women Employees, Employee Retention, IT Industry, Digital HRM, AI-Driven HR Practices, Inclusive Workplace.

I. Introduction

The role of Human Resource Management has expanded considerably with the growing dependence of organisations on technology and workforce data. HR functions are no longer limited to administrative activities; they increasingly contribute to employee development, performance, workforce planning and organisational decision-making. Artificial Intelligence has become part of this transformation by supporting faster analysis and more structured HR processes.

Within HRM, AI is being used for activities such as identifying candidates, supporting recruitment decisions, guiding employee learning, reviewing performance patterns and analysing workforce trends. These tools can help organisations improve responsiveness and personalise employee-related services. However, their usefulness depends on appropriate data, clear accountability and careful oversight of how automated recommendations are generated and applied.



Employee continuity is another important concern, particularly in the IT industry where skills, roles and workplace expectations change rapidly. For women employees, decisions to remain with an organisation may be shaped by access to career growth, learning opportunities, flexible working arrangements, supportive policies and fair treatment.

AI may contribute to these areas by helping organisations provide more personalised development support, identify career opportunities and recognise emerging retention concerns. At the same time, poorly designed systems may create new problems involving privacy, unfair outcomes, limited transparency and excessive monitoring. For this reason, the contribution of AI to women employee retention should be understood through both its potential benefits and the quality of its implementation.

II. Review of Literature

Shareefa Bhanu (2026) examined the application of Artificial Intelligence in Human Resource Management across selected IT companies in Bengaluru. The study highlighted the growing use of AI in various HR functions and provides a useful basis for understanding the transformation of conventional HR practices through technology. Swapna Srikumar (2023) studied strategies for retaining women employees in selected service sectors and emphasized the importance of organisational support, career opportunities and employee-oriented retention practices. These factors are relevant in understanding the employment continuity of women employees.

Anandha Lakshmi (2019) examined work-life balance among women employees in the IT sector. The study highlighted work-life balance as an important factor influencing women's employment experience and their ability to continue in the organisation.

Singh (2023) examined HRM practices relating to recruitment and selection and their association with employee outcomes. Their study provides a broader understanding of how HR practices can influence employee-related outcomes.

Existing studies have therefore examined AI applications in HRM, women employee retention, work-life balance and employee outcomes. However, limited research has integrated these areas to understand how AI-enabled HR practices may influence the long-term retention of women employees. Further, issues such as fairness, transparency and human oversight require consideration when AI is applied to employee-related decisions.

Research Gap

First, research on AI-driven HRM has mainly concentrated on areas such as automation, recruitment, operational efficiency and technology-supported decision-making. While concerns relating to ethics and responsible AI have also been discussed, less attention has been given to how AI-enabled HR practices may influence the retention experiences of women employees.

Second, studies on women employee retention in the IT industry have consistently highlighted factors such as career growth, organisational support, flexible work



arrangements and work-life balance. However, these factors are commonly examined within conventional HR systems, with limited focus on how AI-enabled HR practices may change the way such support and opportunities are provided to employees.

Third, research linking AI with women's career development is still developing. Existing studies increasingly recognise the role of AI in skill development, career mobility and employee support, but there is limited understanding of whether these practices contribute to sustained career continuity and long-term retention.

Therefore, further conceptual understanding is required to explain how different AI-enabled HR practices may work together to influence women employee retention through employee experience and organisational support. The present study brings these elements together within a unified framework while also considering the role of fairness, transparency and human oversight.

Objectives of the Study

1. To understand the changing role of AI in modern HR functions.
2. To recognise AI-based HR practices that may strengthen employee retention.
3. To analyse key ethical, technical and organisational concerns linked to AI use in HR.
4. To formulate a conceptual model relating AI-enabled HR practices to the retention of women employees.
5. To recommend inclusive and responsible ways of applying AI in HR activities.

III. Research Methodology

The present study adopts a conceptual research design based on secondary sources. It synthesises relevant scholarly literature, institutional reports and published research related to Artificial Intelligence (AI), Human Resource Management (HRM), employee retention, women's employment and digital workplace transformation.

The major themes considered in the review include AI and HRM, AI-enabled recruitment, AI-supported learning and development, AI-enabled career development, AI-based performance management, workforce analytics, employee engagement, employee retention, women's participation in the technology workforce, algorithmic bias and gender, responsible AI and digital workplace transformation.

The reviewed literature was synthesised to identify the potential opportunities and challenges associated with AI-driven HRM and to develop a conceptual framework linking AI-enabled HR practices with employee experience, organisational support and women employee retention. The findings are presented as a theoretical and conceptual interpretation of the existing literature.

AI-Driven HRM Practices and Women Employee Retention

AI is increasingly being used not only for routine HR activities but also for talent acquisition, employee development, career planning, performance assessment, workforce analysis and employee support. These applications can provide HR



professionals with information that may assist them in identifying employee needs and designing more responsive HR interventions.

AI-Enabled Recruitment and Talent Acquisition

Recruitment is one of the areas in which AI can reduce the time and effort involved in processing large numbers of applications. AI-supported systems can assist in identifying candidates, comparing qualifications with job requirements and organising applications according to predetermined criteria. This can enable HR professionals to devote greater attention to activities that require human interaction and judgement.

Nevertheless, the use of AI in recruitment does not automatically ensure equal treatment. An algorithm learns from the information and criteria provided to it, and historical organisational records may contain patterns of gender inequality. If such patterns are incorporated into an automated system, the technology may continue reproducing them while appearing objective. This creates a particular concern for women seeking employment and career opportunities in technology-intensive organisations.

Selection criteria should be clearly defined, automated recommendations should remain subject to human assessment, and recruitment outcomes should be monitored for unintended differences between demographic groups. The effectiveness of AI-enabled recruitment should therefore be assessed not only in terms of efficiency but also in terms of fairness, transparency and inclusiveness. (Hunkenschroer & Luetge, 2022)

AI-Supported Learning and Development

The rapid pace of technological change makes continuous skill development an essential component of employment in the IT industry. Employees are required to update their technical and professional competencies as technologies, job roles and business requirements evolve. AI can support this process by analysing available information about employee skills and recommending learning activities that correspond with identified development needs.

For women employees, such access may contribute to sustained career participation by helping them maintain relevant competencies and identify opportunities for progression. When learning is effectively connected with career planning and internal mobility, it can strengthen employees' perception that the organisation is investing in their long-term development.

The possible relationship can be represented as:

Personalised AI-enabled learning → Skill enhancement → Greater career capability → Internal career opportunities → Potentially stronger retention

AI-based recommendations need to provide women with equitable access to technical, managerial and leadership-oriented learning opportunities. Human review is therefore important when interpreting recommendations and designing individual development plans.



AI-Enabled Career Development

Career advancement is closely associated with an employee's decision to continue with an organisation. In the competitive IT sector, employees may be more likely to remain when they can identify meaningful opportunities for professional growth within their current organisation.

AI-enabled talent-management systems can assist organisations in connecting employee competencies and experience with available internal positions or development pathways. They may also support activities such as identifying skill gaps, suggesting possible career directions, facilitating internal mobility, identifying potential successors and connecting employees with suitable mentoring or development opportunities.

For women employees, greater visibility of internal career opportunities may be particularly valuable where access to informal professional networks is uneven.

However, career progression cannot be reduced to a collection of measurable employee characteristics. AI should therefore provide information to support career decisions rather than independently determine promotions or leadership appointments. Human evaluation remains essential when decisions have significant consequences for an employee's career.

AI-Supported Performance Management

Artificial Intelligence can provide HR managers with analytical support in evaluating performance-related information. Depending on the system and organisational context, this may include analysis of project outcomes, performance indicators, employee feedback and progress against development objectives.

The availability of such information may help managers identify patterns that require attention and support more systematic performance discussions. However, a major concern arises when organisations treat algorithm-generated scores as complete representations of employee performance. Many contributions made by employees—such as collaboration, mentoring, problem-solving, creativity and support provided to colleagues—may not be adequately captured by automated measures.

For this reason, performance management should integrate three sources of assessment: AI-based analysis + managerial evaluation + employee perspective

Transparent evaluation procedures and opportunities for employees to discuss or challenge assessments can further strengthen perceptions of fairness and trust, which are important conditions for employee retention. (Tambe et al., 2019)

AI-Based Workforce Analytics and Retention

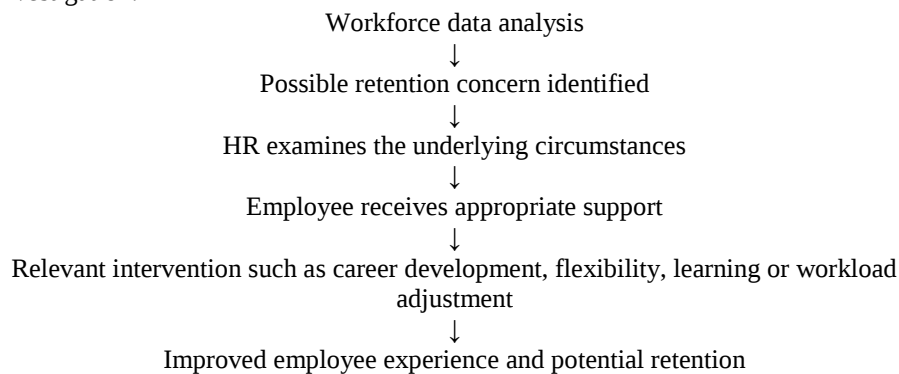
Workforce analytics provides an important area through which AI may directly support employee-retention strategies. By examining patterns across different workforce indicators, AI systems can help HR professionals identify circumstances that may be associated with employee dissatisfaction or potential turnover.



Relevant information may include employees' length of service, career movement, workload, participation in development activities, engagement indicators, absenteeism and feedback.

However, predictive analytics should not be interpreted as a definitive statement about an individual's future behaviour. For example, an AI system may identify an employee as having characteristics statistically associated with higher turnover. This does not establish that the employee has decided to leave. Treating a prediction as a fact could itself damage employee trust.

A more appropriate approach is to use the analytical result as a starting point for human investigation:



This approach changes the purpose of predictive analytics from monitoring employees to understanding workforce needs and enabling timely HR intervention.

AI-Supported Employee Engagement and HR Services

AI can additionally contribute to employee engagement by providing accessible HR information, supporting routine employee queries, analysing employee feedback and facilitating personalised communication. AI-enabled HR support systems may allow employees to obtain information more quickly while helping HR departments identify recurring concerns within the workforce.

For women employees, however, technology-based support should form part of a broader organisational support system. Its value is greater when digital HR services are combined with meaningful opportunities for development, flexible work, recognition and career progression.

Overall, AI-driven HRM can influence women employee retention through several interconnected HR mechanisms rather than through a single technological application. Recruitment, learning, career development, performance management, workforce analytics and employee support can collectively shape employees' experiences within the organisation. The potential retention benefits of these technologies are therefore more likely to emerge when AI is implemented alongside fair HR practices, employee development, organisational support, human oversight and inclusive workplace policies.



Strategic Challenges of AI-Driven HRM

Although AI can improve several HR functions, its integration into workforce management also creates challenges related to fairness, trust, privacy and employee retention. These concerns become particularly important when AI is used in recruitment, performance evaluation, career progression and employee monitoring.

Algorithmic Bias and Gender Inequality

AI systems learn from organisational data, which may contain historical inequalities. If past recruitment, promotion or leadership decisions have favoured particular groups, AI-based recommendations may unintentionally reproduce these patterns. This is especially relevant to women employees, where historical differences in career progression and representation may influence algorithmic outcomes. Organisations should therefore regularly evaluate AI-generated decisions across gender groups and treat fairness as an ongoing organisational responsibility.

Transparency and Explainability

Employees may distrust HR decisions when they do not understand how AI has contributed to them. This concern is significant in areas such as recruitment, performance assessment, promotion and access to development opportunities. Organisations should clearly communicate when AI is being used, the broad factors considered and the possibility of human review. Such transparency can strengthen perceptions of procedural fairness and employee trust.

Employee Data Privacy and Responsible Data Use

AI-enabled HRM often involves the collection and analysis of extensive employee information, including performance records, skills, attendance and career history. While such data can improve HR decision-making, inappropriate collection or use may create privacy concerns. Organisations should establish clear rules regarding data collection, access, storage, purpose and retention, while informing employees about significant uses of their personal information. Responsible data governance is therefore essential for maintaining employee confidence.

Excessive Workplace Surveillance

AI can enable organisations to monitor employee activities more extensively. Although monitoring may serve legitimate operational purposes, excessive surveillance can create perceptions of distrust and negatively influence employee well-being and organisational commitment. From a retention perspective, employees may be less inclined to remain where technology is perceived primarily as a mechanism of control. AI-based monitoring should therefore be proportionate, purposeful and responsibly implemented.

Overdependence on Automated Decisions

Employment decisions often involve factors that cannot be fully captured through numerical data, such as career aspirations, personal circumstances, leadership potential and perceptions of fairness. Excessive reliance on automated recommendations may overlook such contextual factors. AI should therefore support HR professionals rather than replace human judgement, particularly in decisions with significant consequences for employees.



AI Capability and Digital Skill Gaps

Successful AI adoption also requires HR professionals to understand how AI systems operate and how their outputs should be interpreted. Insufficient AI literacy may result either in underutilisation of technology or excessive dependence on algorithmic recommendations. Organisations should therefore strengthen HR professionals' AI literacy, analytical skills and ethical awareness to ensure that AI is implemented effectively and responsibly.

Conceptual Framework

This study examines how the use of AI in human resource practices may influence the retention of women employees. The framework assumes that AI does not improve retention on its own. Its impact is expected to occur through the way employees experience HR processes and the extent to which they feel supported by the organisation.

The framework focuses on six areas where AI is increasingly used in HR: recruitment, learning and development, career development, performance management, workforce analytics, and employee engagement and HR services.

When AI is used effectively in these areas, it may improve employees' access to career opportunities, learning support, workplace flexibility, organisational support and fair treatment. These experiences can influence whether women employees choose to continue their careers within the same organisation and remain committed to it.

Proposed Conceptual Framework

AI-Driven HR Practices

AI-enabled recruitment

AI-supported learning and development

AI-enabled career development

AI-supported performance management & employee engagement and HR services

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AI-based workforce analytics and retention

Your list should become:

- AI-enabled recruitment
- AI-supported learning and development
- AI-enabled career development
- AI-supported performance management
- AI-based workforce analytics and retention
- AI-supported employee engagement and HR services

Employee Experience and Organisational Support

Career opportunities

Learning and development

Organisational support

Employee engagement

Perceived fairness

Work flexibility



Women Employee Retention

Intention to remain

Career continuity

Organisational commitment

Reduced turnover intention

Issues such as fairness in AI-based decisions, employee data privacy, human involvement, organisational culture, digital readiness and leadership support may affect how employees respond to AI-enabled HR practices.

Overall, the framework suggests that AI can contribute to women employee retention when it helps organisations provide better HR support and a more positive employee experience. The outcome therefore depends not only on the technology being used, but also on how responsibly and inclusively it is implemented.

Strategic Recommendations

Integrate AI with Human-Centred HRM

Organisations should position AI as a support mechanism for HR professionals rather than as a replacement for human decision-making. Technology can identify patterns and provide analytical insights, while HR professionals can interpret those insights in light of employee circumstances and organisational context.

Establish Gender-Fairness Monitoring

AI systems used in recruitment, performance assessment, promotion and development should be periodically evaluated for gender-related disparities. Organisations should compare outcomes across relevant employee groups and investigate unexplained differences.

Ensure Meaningful Human Oversight

Decisions with significant consequences for employees should not be based exclusively on automated recommendations. Human review should be incorporated into recruitment, promotion, performance assessment and retention interventions, with appropriate mechanisms for employees to raise concerns.

Use AI to Strengthen Women's Career Development

AI-enabled talent systems should be designed to increase access to skill development, mentoring, internal mobility and leadership opportunities. Organisations should ensure that women employees are not unintentionally channelled towards limited career paths because of historical workforce patterns.

Strengthen AI Competencies among HR Professionals

HR professionals should develop capabilities in AI literacy, data interpretation, algorithmic fairness, privacy protection and ethical decision-making. Such competencies will enable HR teams to question inappropriate outputs rather than accepting algorithmic recommendations without evaluation.

Implications: The study offers practical relevance for IT firms, HR practitioners, organisational decision-makers and women professionals.



For IT organisations, the adoption of AI in HR should be viewed not only as a means of improving efficiency but also as a tool that can shape employee development, workplace experience, perceived fairness and retention outcomes.

For HR professionals, the increasing use of AI creates a greater need for skills in data interpretation, technology-assisted decision-making and responsible judgement. Effective HR practice therefore requires a balance between analytical tools and human understanding.

At the leadership level, organisations need suitable policies and governance mechanisms to ensure that AI adoption supports inclusion, employee interests and long-term career development rather than focusing only on technological performance.

For women employees, responsibly designed AI-enabled HR systems may create better access to learning opportunities, career progression, internal mobility and flexible work-related support. The value of these systems, however, depends on fair implementation, clear communication and continued human involvement in important employment decisions.

Future Research Directions

Future empirical research may examine how AI-enabled HR practices influence the retention of women employees in the IT sector. Particular attention may be given to recruitment, learning and development, career support, performance management, workforce analytics and employee assistance systems.

Researchers can also investigate the role of employee-related factors such as engagement, job satisfaction, organisational support and commitment in shaping retention outcomes. At the same time, the effectiveness of AI-driven HR practices may vary depending on conditions such as perceived fairness, transparency, organisational culture, digital readiness and the extent of human involvement in HR decisions.

Further studies may compare organisations with different levels of AI adoption, organisational size or geographical presence and Another useful direction would be to study women at different stages of their careers. The experiences of early-career employees, mid-career professionals and women in leadership roles may differ considerably, and future research can examine whether AI creates different opportunities or concerns for these groups.

Overall, future research should give greater attention to the quality and context of AI implementation, rather than focusing only on whether an organisation has adopted AI. This can provide a clearer understanding of when and how AI-driven HRM contributes to sustainable women employee retention.

Limitations of the Study

First, it is conceptual and relies exclusively on secondary sources rather than primary empirical data. Therefore, the proposed relationships between AI-driven HR practices and women employee retention have not been statistically validated.



Second, the study focuses specifically on women employees in the IT industry. Consequently, the conceptual observations may not be directly generalisable to other industries with different workforce characteristics and organisational contexts.

Third, Artificial Intelligence is developing rapidly, and AI applications used in HRM may change considerably over time. Some of the opportunities and challenges discussed in the study may therefore evolve with technological and regulatory developments.

Finally, employee retention is influenced by a combination of individual, organisational and external factors.

IV. Conclusion

Artificial Intelligence is gradually changing the way organisations manage employees across different stages of the employment lifecycle. In the IT industry, AI-enabled recruitment, learning and development, career management, performance assessment, workforce analytics and employee-support systems can create new opportunities to strengthen employee experience and retention.

For women employees, the value of AI-driven HRM lies in its potential to improve access to learning, career opportunities, internal mobility, organisational support and timely HR intervention. However, the use of AI does not automatically lead to better retention outcomes. Concerns relating to algorithmic bias, lack of transparency, employee privacy, excessive monitoring and overdependence on automated decisions can reduce employee trust and weaken the intended benefits of technology.

The study therefore suggests that AI should be used as a supportive tool within a broader human-centred HR system. Meaningful human involvement, responsible data practices, fairness and inclusive organisational policies remain essential when AI is applied to employment-related decisions.

Overall, AI-driven HRM can contribute to sustainable women employee retention when technological capabilities are combined with supportive organisational practices and responsible implementation. The proposed framework provides a basis for future empirical research to examine how these relationships operate across different organisational and career contexts.

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