

To Explore the Use of Artificial Intelligence in Employee Performance Evaluation and Talent Management

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Abstract

Artificial Intelligence has started changing the way organizations manage people, assess employee performance, identify talent gaps and plan future workforce requirements. In the field of Library Science, this discussion is equally important because modern libraries are no longer limited to collection management, circulation and reference services. Academic libraries, digital knowledge centres and information service institutions now depend on trained human resources who can manage digital repositories, research databases, e-resources, user analytics and technology-enabled services. This paper explores the use of Artificial Intelligence in employee performance evaluation and talent management, with special reference to its relevance for library and information science institutions. The paper discusses how AI can support data-based performance review, skill mapping, staff development, succession planning and employee engagement. At the same time, it also examines concerns related to algorithmic bias, privacy, lack of transparency and excessive dependence on technology. The paper is based on secondary data and conceptual analysis. It argues that AI should not replace human judgment in employee evaluation. Rather, it should be used as a supportive tool that helps library administrators and HR professionals take more informed, fair and timely decisions. The paper concludes that responsible AI adoption can improve talent management only when it is combined with ethical guidelines, human supervision, training and institutional accountability.

Keywords: *Artificial Intelligence, Employee Performance Evaluation, Talent Management, Library Science, Human Resource Management, People Analytics, Digital Libraries*

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1. Introduction

Human Resource Management has always been concerned with people, their performance, their growth and their contribution to institutional goals. In earlier times, employee evaluation was mainly based on supervisor observation, annual appraisal forms, attendance records and general feedback. These methods are still used, but they often fail to capture the complete picture of an employee's work. This is especially true in knowledge-based institutions such as libraries, where performance is not always visible in simple numbers. The role of librarians and library staff has changed considerably. A librarian today may manage digital databases, train research scholars, support plagiarism checking, organize institutional repositories, assist in bibliometric analysis and help users access online knowledge resources. These tasks require technical skills, service orientation and continuous learning.



Therefore, traditional performance evaluation methods may not be sufficient. Artificial Intelligence offers a new way of looking at employee performance. It can collect and analyse data related to work patterns, service delivery, training needs, user feedback and skill development. AI tools can help identify which employee needs digital training, who is suitable for a leadership role and which staff member is consistently contributing to user satisfaction. However, this does not mean that AI should become the final decision-maker. Human work is sensitive. Performance appraisal affects promotion, salary, recognition and morale. The use of AI in HRM has therefore created both hope and caution. Researchers have pointed out that AI can improve decision-making, but it can also reproduce bias if the data used by the system is

unfair or incomplete.¹ In Library Science, the matter becomes even more delicate because libraries are service-oriented institutions. A staff member's value cannot be measured only by speed or output. Patience, guidance, ethical handling of information and support to students are equally important.

2. Definitions of Key Terms

- ❖ **Artificial Intelligence:** Artificial Intelligence refers to the ability of computer systems to perform tasks that normally require human intelligence. These tasks may include learning, prediction, classification, decision support and pattern recognition.
- ❖ **Employee Performance Evaluation:** Employee performance evaluation is the process of assessing an employee's work, behaviour, contribution, skills and achievement of assigned responsibilities over a specific period.
- ❖ **Talent Management:** Talent management refers to the systematic process of attracting, developing, retaining and utilizing employees in a way that supports institutional growth and employee career development.
- ❖ **Algorithmic Bias:** Algorithmic bias occurs when an AI system produces unfair results because of biased data, wrong assumptions or poorly designed decision rules.

3. Review of Literature

3.1. Tambe, Cappelli and Yakubovich (2019) discussed the growing use of Artificial Intelligence in Human Resource Management and identified both opportunities and challenges. Their study argued that HR decisions are complex because employee data is often incomplete, sensitive and context-specific. They observed that AI can support recruitment, evaluation and workforce planning, but organizations must be careful about data quality and fairness. Their work is important because it does not treat AI as a magical solution. Instead, it shows that AI in HR requires careful design, human judgment and institutional responsibility.¹

3.2. Upadhyay and Khandelwal (2018) examined the implications of Artificial Intelligence for recruitment and HR practices. They noted that AI can reduce routine work, improve screening and support faster decision-making. However, their discussion also suggests that technological efficiency should not be confused with human suitability. In talent management, this point is relevant because employees are

not only bundles of skills. They also carry motivation, attitude, creativity and learning potential.²

3.3.Nosratabadi et al. (2022) conducted a systematic review on AI models and employee lifecycle management. Their review found that AI models are being used in different stages of the employee lifecycle, including recruitment, onboarding, retention and separation. The study also noted that machine learning techniques such as decision trees, random forest and neural networks are increasingly used for workforce predictions.³

3.4.Kalff and Simbeck (2025) studied how HR managers interpret AI-based recruiting recommender systems. Their work showed that explainable AI can improve the perceived usefulness of HR dashboards, but it does not always improve actual understanding. This is an important warning. A dashboard may look clear, but the user may still misunderstand the logic behind the recommendation. In employee performance evaluation, such misunderstanding can create serious consequences. Therefore, AI literacy among HR managers, library administrators and decision-makers becomes essential.⁵

4. Problem Statement

Organizations are increasingly adopting Artificial Intelligence for employee evaluation and talent management. However, many institutions still lack a clear understanding of how AI should be used, what limits should be maintained and how fairness can be protected. In libraries and information centres, performance is often a mixture of measurable and non-measurable contributions. For example, circulation speed can be counted, but research guidance, user support and professional attitude are harder to measure. The main problem is that AI-based evaluation may become too mechanical if it is used without human supervision. There is also a risk that employees may feel watched, judged or reduced to data points. At the same time, avoiding AI completely may prevent institutions from improving their HR systems.

5. Objective of the Paper

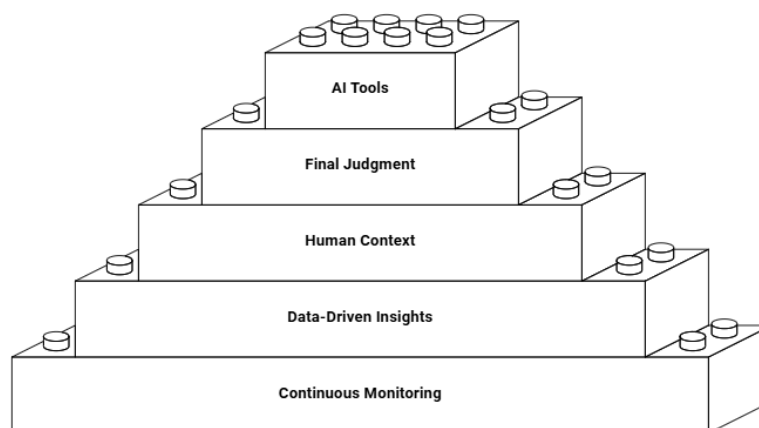
The objective of the paper is to explore the use of Artificial Intelligence in employee performance evaluation and talent management, with special reference to its relevance in Library Science and information service institutions. The paper also aims to understand the

opportunities, risks and ethical concerns linked with AI-based HR practices and to suggest responsible approaches for its adoption.

6. Artificial Intelligence in Employee Performance Evaluation

AI can make performance evaluation more continuous and evidence-based. Instead of depending only on annual appraisal forms, institutions can use AI-supported tools to observe patterns over time. For example, in a library, AI may help analyse user feedback, response time, database handling, participation in training, digital service delivery and contribution to institutional work. This can be useful because human supervisors sometimes evaluate employees based on recent events or personal impressions. AI can reduce such limitations by presenting data across a longer period. It may also help identify hidden contributions. A staff member who quietly supports students, solves technical access problems or regularly updates digital resources may receive better recognition when data is properly captured. Still, performance evaluation should not become a fully automated process. AI can show trends, but it may not understand the complete human context. An employee may show lower output during a period due to additional administrative responsibility, illness or a temporary change in library workload. A machine may miss these details. A human evaluator should therefore review AI-generated insights before making any final judgment.

AI in Performance Evaluation



AI-based performance evaluation may include automated feedback analysis, productivity dashboards, goal tracking, skill assessment and personalized performance suggestions. In libraries, this can be linked with staff training, digital literacy, user service quality and research support services.

7. Role of AI in Talent Management

Talent management is not only about identifying the best employees. It is also about developing employees who can take future responsibilities. In library institutions, talent management is important because the profession is changing rapidly. Staff members now need knowledge of digital cataloguing, institutional repositories, open access platforms, metadata standards, digital preservation, research metrics and AI-based search systems. AI can support talent management by mapping employee skills and comparing them with future institutional requirements. For example, if a university library plans to strengthen research data management services, AI can help identify which employees already have related skills and who needs training. This makes staff development more focused. AI can also support succession planning. Many libraries depend on a few experienced individuals for technical and administrative tasks. When such employees retire or leave, the institution faces difficulty.

8. Statistical Insights and Ethical Concerns in AI-Based HR Decisions

The use of AI in employee evaluation raises serious ethical questions. The first concern is bias. If past HR data reflects unfair practices, AI may learn from that data and continue the same unfairness. For example, if certain employees were historically underrated due to gender, age, language or department-based bias, the AI system may repeat these patterns. Research on algorithmic decision-making in HR has shown that fairness and discrimination remain important concerns.⁴ The second concern is privacy. AI systems often require employee data. In libraries, this may include attendance, work records, online activity, user feedback and communication patterns. If such data is collected without clear rules, employees may feel that they are under constant surveillance. The third concern is transparency. Employees should know how their performance is being evaluated. If an AI system gives a low score but cannot explain why, the system will create mistrust. This is why explainable AI and human review are necessary. The fourth concern is over-dependence. AI can assist decision-making, but it should not replace professional judgment. In employee appraisal, context matters. A good HR or library administrator must listen, discuss and understand before making a final decision. The wider research environment also indicates that AI adoption is moving into many fields and workplaces, which makes institutional preparedness important for libraries and HR departments.⁶

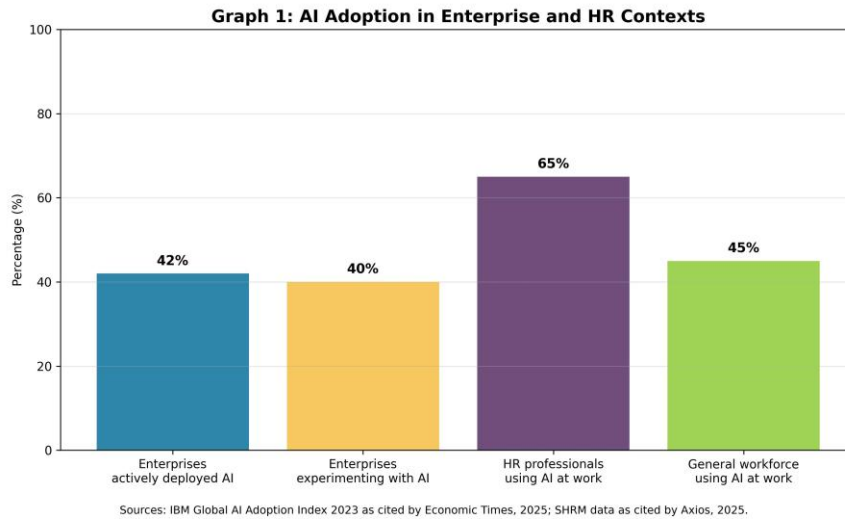
Table 1: Selected Statistical Indicators on AI Adoption and Workforce Readiness

| Sr. No. | Indicator | Year | Reported Figure | Relevance to the Paper |
|---------|--|------|-----------------|--|
| 1 | Enterprises that actively deployed AI | 2023 | 42% | Shows organizational movement towards AI-based systems |
| 2 | Enterprises experimenting with AI | 2023 | 40% | Indicates that AI adoption is still developing |
| 3 | HR professionals using AI at work | 2025 | 65% | Shows direct relevance of AI in HR functions |
| 4 | Workers using AI at work | 2025 | 74% | Indicates wider workplace acceptance of AI tools |
| 5 | Workers receiving formal AI training | 2025 | 33% | Shows a gap between AI use and AI preparedness |
| 6 | Employees who feel their roles may change significantly | 2024 | 51% | Reflects concern about future work transformation |
| 7 | Employees who feel employers provide sufficient upskilling | 2024 | 46% | Shows need for stronger learning and development efforts |

Source: Workplace use and formal training figures are based on a Clutch survey as reported in 2025.⁹

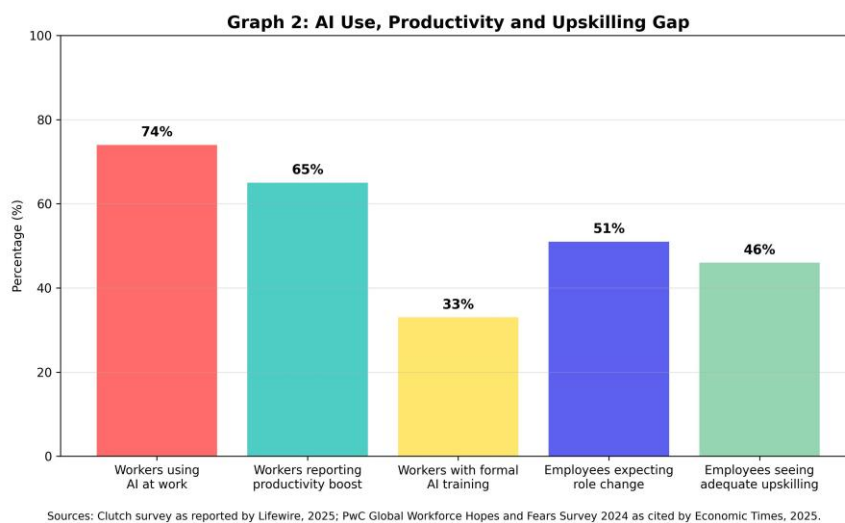
The data shows a clear pattern. AI is no longer an experimental topic only for technology companies. It is entering workplaces, including HR departments. At the same time, the low percentage of formal AI training shows that employees and managers may be using AI without sufficient understanding. This has direct implications for libraries. Before using AI for performance evaluation, library institutions must train administrators and staff on AI literacy, data ethics and interpretation of AI outputs.

Graph 1: AI Adoption in Enterprise and HR Contexts



Source: Prepared by researcher from the statistical indicators presented in Table 1.

Graph 2: AI Use, Productivity and Upskilling Gap



Source: Prepared by researcher from the statistical indicators presented in Table 1.

9. Research Methodology

9.1 Type of Data

The present paper totally relies on secondary data. The data has been collected from research papers, review articles, reports, professional discussions and published sources related to Artificial Intelligence, Human Resource Management, performance evaluation, talent management and Library Science.

9.2 Type of Research

The research type for the present paper is descriptive and conceptual.

9.3 Period of Research

The period of study is from 2014 to 2025.

9.4 Research Gap

Previous studies have discussed AI in recruitment, HR analytics and employee lifecycle management. However, limited attention has been given to the use of AI in employee performance evaluation and talent management from the perspective of Library Science. Libraries are knowledge institutions with unique human resource requirements. Staff performance includes both technical and service-oriented dimensions. Therefore, there is a need to connect AI-based HR practices with the changing role of library professionals.

10. Recommendations

- It is recommended that libraries and information centres should use AI as a decision-support tool, not as a final authority in employee performance evaluation.
- It is recommended that AI-based appraisal systems should include human review, employee feedback and contextual explanation before any decision related to promotion, salary or disciplinary action is taken.
- It is recommended that library staff should be trained in AI literacy, data privacy and digital HR systems so that they understand both the benefits and limitations of AI.
- It is recommended that institutions should develop clear policies regarding what employee data will be collected, how it will be used and who will have access to it.
- It is recommended that AI tools used for performance evaluation should be regularly audited to check whether they are producing biased or unfair outcomes.
- It is recommended that talent management in libraries should focus on future skills such as digital archiving, metadata management, research support, open access services and user analytics.

11. Conclusion

Artificial Intelligence has created new possibilities for employee performance evaluation and talent management. It can help organizations move beyond traditional appraisal systems and

develop a more continuous, data-informed and skill-oriented approach. In the context of Library Science, this is highly relevant because libraries are undergoing major transformation. Digital resources, online databases, institutional repositories, research support tools and user-centred services have changed the nature of library work. AI can help library administrators understand staff performance in a deeper way. It can identify training needs, highlight skill gaps, support succession planning and improve the use of available human talent. It can also make employee development more personalized. These are valuable benefits.

But there is another side. AI-based HR decisions can become unfair if the system is built on biased data or if administrators depend on it blindly. Employee performance is not only a matter of numbers. It includes attitude, cooperation, service quality, ethical conduct and the ability to support users with patience. These qualities require human understanding. Therefore, the future of AI in employee performance evaluation should be balanced. AI should assist, not dominate. It should inform, not replace. The best approach is one where technology and human judgment work together. For libraries and information institutions, this means adopting AI carefully, training staff properly and building transparent systems. If used responsibly, AI can strengthen talent management and help libraries prepare their workforce for the changing knowledge environment. If used carelessly, it may create mistrust and reduce the human spirit of the institution.

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