

ALGORITHMIC MANAGEMENT IN HUMAN RESOURCE MANAGEMENT IN
UZBEKISTAN

Muxtorov Abdurahmon Shavkatovich

WIUT PhD Candidate

<https://doi.org/10.5281/zenodo.23185195>

Abstract. Algorithmic management is becoming an important dimension of contemporary human resource management because digital systems can process large volumes of workforce data, support managerial decisions and automate selected HR activities. This article examines the emerging role of algorithmic management in Uzbekistan, with particular attention to public-sector human resource management and the country's broader digital and artificial intelligence reforms. The study combines a review of academic literature on algorithmic HRM with analysis of Uzbekistan's civil-service reform agenda, the ARGOS digital HR ecosystem, the national Artificial Intelligence Development Strategy until 2030 and recent government initiatives. The analysis focuses on recruitment and selection, algorithmic assessment, learning and development, and performance management. The findings indicate that Uzbekistan has established important digital foundations for algorithmic HR management, including online recruitment, electronic personnel administration, digital assessment and professional-development platforms. At the same time, publicly available evidence does not justify describing the entire Uzbek HR system as fully algorithmically managed. Rather, the country is moving from digital HR administration towards more data-driven and AI-supported management. The article identifies opportunities in faster processing, evidence-based workforce planning, personalised learning and performance analytics, while highlighting risks related to bias, explainability, privacy, surveillance and over-reliance on automated recommendations. It recommends human oversight, stronger data governance, regular algorithmic audits and AI literacy for HR professionals.

Keywords: algorithmic management, algorithmic HRM, artificial intelligence, human resource management, digital HR, ARGOS, civil service, workforce analytics, Uzbekistan

1. INTRODUCTION

Human resource management is entering a period in which decisions about recruitment, performance, learning and workforce allocation can increasingly be supported by algorithms. Algorithmic management refers broadly to the use of digital data and software-based rules or models to augment or automate management decisions. In HRM, such systems may analyse candidate information, recommend employees for positions, identify training needs, monitor performance or support workforce planning [1; 2].

Uzbekistan provides a relevant case for examining this transition. Since the establishment of ARGOS in 2019 and the adoption of the Law on State Civil Service in 2022, the country has pursued a more merit-based and digitally supported civil service. The OECD identifies online recruitment, competency frameworks, performance management and data analytics as important components of this reform agenda [5]. Uzbekistan also approved the Strategy for the Development of Artificial Intelligence Technologies until 2030 in 2024 and has expanded practical AI initiatives in public administration [6].

The purpose of this article is to assess the current foundations, opportunities and governance challenges of algorithmic management in HR in Uzbekistan. The study examines four areas: recruitment and selection, assessment, learning and development, and performance management.

2. LITERATURE REVIEW

Algorithmic HRM has emerged as a distinct field within digital human resource management. Meijerink et al. define algorithmic HRM as the use of software algorithms operating on digital data to augment HR-related decisions and/or automate HRM activities [1]. This distinguishes algorithmic HRM from digital HR systems that merely store or transmit information.

Cameron, Herrmann and Nankervis provide a multidisciplinary synthesis of algorithmic HRM and distinguish between automated and augmented HR decision-making [2]. Their review identifies applications in workforce planning, recruitment, allocation and scheduling, and learning and development.

Research also emphasises the dual character of algorithmic management. Algorithms may reduce routine administrative work and support consistency, but they can also restrict employee autonomy and change organisational power relationships [7]. Research on responsible AI in HR highlights fairness, transparency, privacy, explainability and accountability as central concerns [8].

The literature therefore supports a socio-technical interpretation: algorithms influence HR decisions, but organisational rules, human judgement and institutional accountability continue to shape outcomes. This distinction is particularly important for Uzbekistan, where digital HR infrastructure is developing faster than evidence of fully autonomous algorithmic personnel management.

3. RESEARCH METHODOLOGY

The study uses qualitative documentary analysis supported by descriptive analysis of reported administrative indicators. The literature component reviews peer-reviewed research on algorithmic HRM and algorithmic management. The Uzbekistan component analyses official government materials, the national AI strategy, ARGOS information and the OECD Public Governance Review of Uzbekistan [5; 6].

A comparative institutional approach maps Uzbek digital HR functions against four stages of algorithmic HR management: recruitment and selection, assessment, learning and development, and performance management. The study does not assume that every digital platform is algorithmic; it distinguishes digitisation, algorithmic decision support and full automation.

4. ANALYSIS AND RESULTS

4.1. From digital HR administration to algorithmic HR management

Uzbekistan has created several components that can serve as infrastructure for algorithmic HR management. The ARGOS ecosystem includes online recruitment, personnel administration, candidate assessment, the National Personnel Reserve, professional learning and performance-related tools [5]. These components generate and organise information about vacancies, applicants, competencies, training, performance and career development.

The transition to algorithmic management occurs when these data are processed systematically to support or automate decisions. A recruitment platform becomes more algorithmic when candidate data are used to rank profiles against competency requirements. An assessment system becomes more algorithmic when results are combined to generate structured recommendations. A learning platform can

support algorithmic management when employee data are used to recommend individual development pathways.

The available evidence supports the conclusion that Uzbekistan is developing these foundations rather than operating a completely autonomous algorithmic HR system. This distinction avoids overstating the present level of automation while recognising the potential of the existing infrastructure.

4.2. Algorithmic recruitment and selection

Recruitment is suitable for algorithmic support because it involves large quantities of structured information. Uzbekistan's unified vacancy portal centralises public-sector vacancies and allows applicants to follow open competitions online [9]. Such digitalisation reduces administrative friction and creates datasets that can support workforce analytics.

Potential applications include matching job requirements with candidate competencies, identifying missing qualifications and supporting interview preparation. However, automated ranking may reproduce historical bias, rely on problematic proxy variables or produce technically accurate but institutionally inappropriate recommendations. Algorithmic recruitment should therefore initially function as decision support, with human HR specialists retaining responsibility for competency criteria and consequential decisions.

4.3. Algorithmic assessment and competency management

Digital assessment is especially relevant because public-sector recruitment already uses structured testing and assessment. Earlier reform reporting indicated that digital solutions and artificial intelligence reduced average assessment time from approximately seven hours to around 80 minutes [10].

Algorithmic assessment can go beyond speed. When validated competency models are connected to assessment data, organisations can identify patterns across knowledge, behavioural competencies and job requirements. This information can support recruitment, training and career planning. However, predictive assessment requires high-quality data and regular validation. The OECD recommends stronger HR data analytics capacity and systematic analysis of recruitment outcomes in Uzbekistan [5].

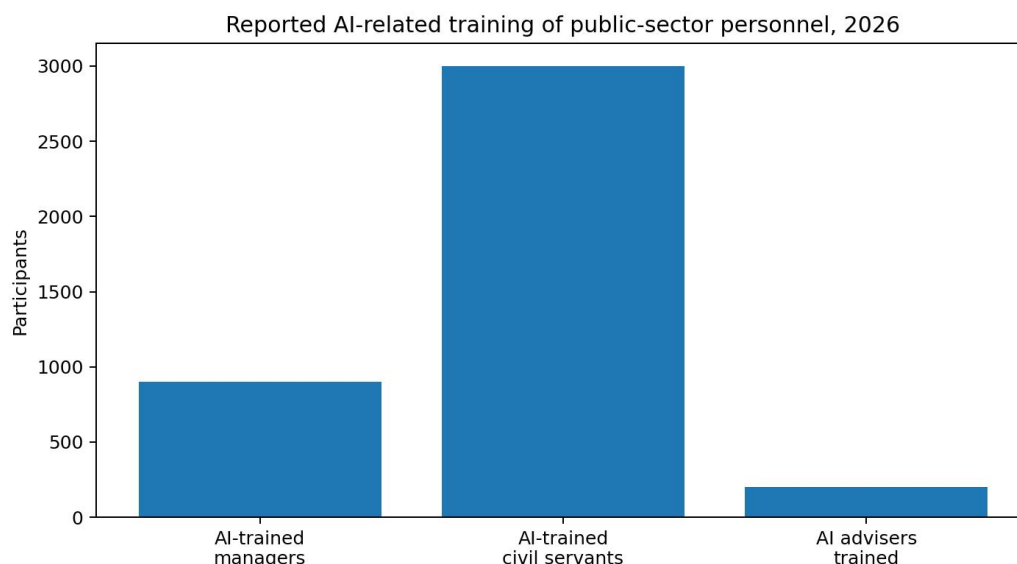


Figure 1. Reported AI-related training of public-sector personnel in Uzbekistan, 2026

Multidisciplinary research and Innovation (SICMRI 2026)

Source: Government of Uzbekistan. In August 2026, more than 900 managers, more than 3,000 civil servants and 200 AI advisers were reported to have completed specialised AI training [11].

4.4. Algorithmic learning and development

Learning and development represents a comparatively lower-risk area for algorithmic HRM because recommendations can usually be separated from final employment decisions. Algorithms can analyse competencies, previous training and job requirements and recommend courses or development activities.

Uzbekistan is expanding AI-related training for public-sector employees. Government programmes have provided practical training on using AI to improve productivity and resource management [12]. In 2026, national reporting indicated that specialised AI training had reached thousands of civil servants and managers [11].

Algorithmic learning should remain transparent. Employees should be able to understand why a particular development need has been identified, and managers should not treat an algorithmic recommendation as an objective judgement about an employee's potential. The preferred model is augmented decision-making in which algorithms identify options while people make contextual decisions.

4.5. Algorithmic performance management

Performance management is one of the most sensitive applications of algorithmic HRM because performance indicators can influence promotion, workload and career opportunities. Uzbekistan's civil-service reform agenda already emphasises measurable performance and stronger performance management [5]. Algorithmic tools could make these systems more continuous and data-driven.

Potential applications include identifying performance trends, comparing workloads, detecting bottlenecks, forecasting staffing needs and supporting development discussions. However, algorithmic scores can create misleading precision. Not every contribution is easily measurable, and employees may adapt behaviour to whatever the system rewards.

Algorithmic performance management should therefore combine quantitative indicators with human review, contextual information and periodic auditing. Its purpose should be to improve managerial understanding rather than to create an automated ranking of employees.

Conceptual pathway for algorithmic HR management

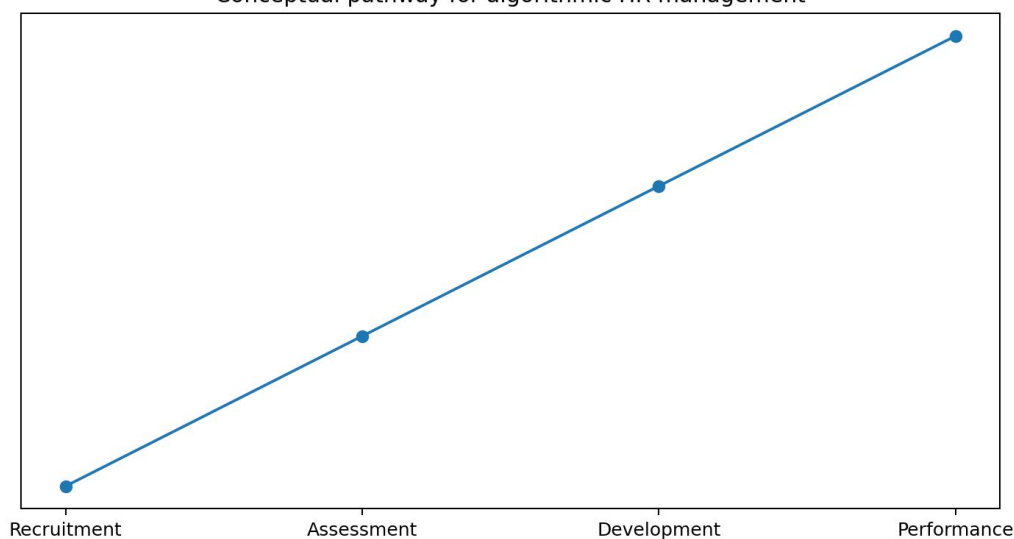


Figure 2. Conceptual pathway for algorithmic HR management

4.6. Governance risks: bias, privacy and explainability

The central challenge of algorithmic HR management is not whether algorithms can process data, but whether the resulting decisions are legitimate and trustworthy. If historical recruitment or promotion data contain systematic bias, predictive models may reproduce it.

Privacy is another major concern. HR systems can contain information about qualifications, performance, attendance and career history. Algorithmic management can increase the volume and granularity of employee monitoring, making data governance and access controls essential.

Explainability is equally important. Employees and candidates should not be disadvantaged by an opaque score that HR specialists cannot meaningfully interpret. International guidance on AI in government emphasises trustworthy AI, governance arrangements and safeguards alongside technological adoption [3; 4].

4.7. Institutional readiness in Uzbekistan

Uzbekistan's national AI policy creates a favourable environment for algorithmic HR development. The AI strategy until 2030 includes measures to expand digital data, strengthen AI infrastructure and develop knowledge and skills among the population and public administration employees [6]. By 2026, Uzbekistan reported substantial growth in AI readiness and set a goal of entering the global top 50 by 2030 [11].

Institutional readiness should nevertheless be assessed not only through AI rankings or training numbers. Algorithmic HR requires reliable workforce data, clearly defined competencies, interoperable information systems, technically competent HR professionals and governance mechanisms for high-impact decisions. The OECD specifically recommends stronger HR data analytics capabilities and systematic analysis of recruitment outcomes [5].

5. CONCLUSION AND RECOMMENDATIONS

The analysis indicates that algorithmic management in HR is an emerging rather than fully established feature of Uzbekistan's human resource system. The country has developed important prerequisites: online recruitment, electronic personnel administration, digital assessment, professional-development platforms, performance-management mechanisms and an expanding AI ecosystem.

The main opportunity lies in integrating these data and systems around the employee lifecycle. Recruitment information can inform competency development; assessment results can inform personalised learning; learning outcomes can support career planning; and performance information can improve workforce planning. Yet integration also increases the consequences of poor data quality, biased models or weak governance.

Six recommendations follow. First, Uzbekistan should establish a governance framework for algorithmic HR applications, including responsibility for model design, deployment and monitoring. Second, high-impact HR processes should initially use algorithms mainly for decision support, with meaningful human oversight retained for recruitment, promotion and disciplinary decisions. Third, HR data quality and interoperability should be strengthened before expanding predictive applications. Fourth, algorithmic tools should undergo regular bias, accuracy, security and explainability audits. Fifth, employees and candidates should have accessible channels for clarification or challenge where algorithm-assisted decisions materially affect them. Sixth, HR professionals should receive specialised training in AI literacy, data interpretation and responsible technology governance.

Algorithmic management should therefore be understood as a new stage of HR digitalisation rather than the replacement of human management. For Uzbekistan, the strategic objective should be an augmented HR model in which algorithms provide timely evidence and recommendations while people retain responsibility for judgement, fairness and accountability.

REFERENCES

1. Meijerink, J., Boons, M., Keegan, A., & Marler, J. (2021). Algorithmic human resource management: Synthesizing developments and cross-disciplinary insights on digital HRM. *The International Journal of Human Resource Management*, 32(12), 2545–2562. <https://doi.org/10.1080/09585192.2021.1925326>.
2. Cameron, R., Herrmann, H., & Nankervis, A. (2024). Mapping the evolution of algorithmic HRM (AHRM): A multidisciplinary synthesis. *Humanities and Social Sciences Communications*, 11, 303. <https://doi.org/10.1057/s41599-024-02786-z>.
3. OECD. (2025). *Governing with Artificial Intelligence: The State of Play and Way Forward in Core Government Functions*. OECD Publishing. <https://doi.org/10.1787/795de142-en>.
4. OECD. (2026). *Digital Government Outlook 2026: From Foundations to Transformational Impact*. OECD Publishing. <https://doi.org/10.1787/0496b2bc-en>.
5. OECD. (2024). *OECD Public Governance Reviews: Uzbekistan: Towards a More Modern, Effective and Strategic Public Administration*. OECD Publishing. <https://doi.org/10.1787/2f36d8ec-en>.
6. President of the Republic of Uzbekistan. (2024). Resolution No. PP-358 of 14 October 2024: On approval of the Strategy for the Development of Artificial Intelligence Technologies until 2030.
7. Noponen, N., Feshchenko, P., Auvinen, T., Luoma-aho, V., & Abrahamsson, P. (2024). Taylorism on steroids or enabling autonomy? A systematic review of algorithmic management. *Management Review Quarterly*, 74, 1695–1721. <https://doi.org/10.1007/s11301-023-00345-5>.
8. Bujold, A., Roberge-Maltais, I., Parent-Rochelleau, X., et al. (2024). Responsible artificial intelligence in human resources management: A review of the empirical literature. *AI and Ethics*, 4, 1185–1200. <https://doi.org/10.1007/s43681-023-00325-1>.
9. Agency for the Development of Public Service (ARGOS). (2026). Unified Open Portal of Vacant Positions of State Civil Servants.
10. Agency for the Development of Public Service (ARGOS). (2024). Press conference on civil service development results 2024.
11. Government of the Republic of Uzbekistan. (2026, August 7). Priority tasks defined for the development of the artificial intelligence ecosystem.
12. Ministry of Digital Technologies of the Republic of Uzbekistan. (2025, July 17). Training Seminar Held on Use of Artificial Intelligence in Public Administration.
13. Note: The article distinguishes established digital HR infrastructure from algorithmic or AI-supported management and does not assume that all HR decisions in Uzbekistan are already automated.