

Strategic Talent Analytics: Leveraging AI for Employee Performance And Retention

Vidushi Verma

Student

Galgotias University, Greater Noida, Uttar Pradesh, India
vidushiverma5100@gmail.com

Abstract: *The modern workplace faces significant challenges in managing talent effectively, with traditional human resource practices proving inadequate for addressing complex workforce dynamics. This research investigates the application of artificial intelligence in strategic talent analytics, focusing on employee performance evaluation and retention prediction across technology, healthcare, and finance sectors. Using a quantitative cross-sectional survey design, data was collected from 186 working professionals through structured questionnaires measuring AI acceptance, performance management effectiveness, and retention factors. Statistical analysis employed multiple techniques including correlation analysis, regression modeling, and factor analysis using Microsoft Excel and IBM SPSS Statistics.*

The study reveals that AI-driven performance management systems significantly enhance evaluation accuracy and employee development processes. Organizations implementing integrated AI frameworks demonstrate superior retention outcomes compared to traditional approaches, with performance management serving as the strongest predictor of employee retention intent. Technology sector employees show markedly higher AI acceptance levels compared to healthcare and finance professionals, indicating industry-specific implementation considerations. The research establishes strong positive correlations between AI trust and retention intent, while younger employees demonstrate greater openness to AI-powered HR systems.

Predictive analytics models achieved 80.1% accuracy in identifying employees at risk of leaving, enabling proactive intervention strategies. Key findings indicate that employees with high AI trust are nearly twice as likely to remain with their organizations long-term. However, ethical considerations including algorithmic bias, privacy concerns, and transparency requirements necessitate careful implementation frameworks with human oversight and regular bias auditing.

The study contributes to human resource management theory by validating AI effectiveness in talent analytics while providing practical frameworks for implementation. Organizations benefit from understanding that successful AI adoption requires transparent systems, employee training, and ethical governance structures. Future research should examine longitudinal impacts and cross-cultural validation of AI-driven talent management systems..

Keywords: artificial intelligence, talent analytics, employee retention, performance evaluation, human resource management, predictive analytics, workforce planning, organisational behaviour, technology acceptance, strategic HR.

