






Artificial Intelligence in Human Resource Management: Strategic Reconsideration of Employer Branding through Intelligent Avatars (Case Study: Iran's Power Industry)

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Abstract

In response to the growing digital disruption in human resource management (HRM), this study examines the transformative role of intelligent AI-driven avatars in enhancing employer branding within Iran's power industry—a sector traditionally resistant to high-tech HR innovations. Utilizing an exploratory sequential mixed-methods design, this research integrates thematic analysis of expert interviews with quantitative structural equation modeling (SEM) based on data from 384 industry employees. Findings reveal that AI avatars significantly improve employee experience, organizational interaction, and perceived fairness in evaluation processes, which collectively strengthen employer brand equity and job satisfaction. However, implementation challenges—including ethical concerns, data privacy, and cultural misalignment—highlight the necessity for transparent and context-aware AI strategies. This study proposes a novel conceptual framework that bridges technological, psychological, and socio-cultural variables, advancing scholarly discourse on human-centered AI integration in HRM and offering practical pathways for digital transformation in traditional industries.

Keywords: Artificial Intelligence Avatars – Employer Branding – Employee Experience – Algorithmic Trust – HR Digitalization.

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Introduction

The convergence of artificial intelligence (AI), digital avatars, and human resource management is redefining employer-employee relationships. While AI's presence in HRM is expanding globally, empirical exploration of its impact on employer branding remains limited—especially in complex, infrastructure-based sectors such as energy and power. As new workforce generations (e.g., Gen Z) prioritize personalized, tech-savvy, and ethical workplace experiences, organizations are challenged to reconfigure their branding strategies accordingly. This study addresses a critical research gap by investigating how intelligent avatars—AI-powered digital agents with conversational and advisory capabilities—can serve as strategic tools to enhance employer branding, employee experience (EX), and job satisfaction in non-technological industries. Moreover, the study engages with emerging debates surrounding trust in AI, explainable AI (XAI), employee-avatar identification, and cultural acceptance of machine-human interactions. It argues that AI integration is not merely technological but deeply ethical, psychological, and symbolic, especially when the organizational brand is at stake.

Methodology

A two-phase exploratory sequential mixed-methods design was employed.

Qualitative Phase:

Twenty semi-structured interviews were conducted with HR and IT professionals in Iran's power sector, selected via purposive sampling based on expertise and role. Thematic analysis (supported by NVivo) identified four major themes: (1) HR process optimization, (2) personalized employee experience, (3) transparency in performance evaluation, and (4) ethical and legal concerns.

Quantitative Phase:

Using insights from the qualitative phase, a structured questionnaire was distributed to 384 employees. The constructs measured included AI avatar interaction, employer branding perception, algorithmic transparency, cultural acceptance, and job satisfaction. Structural equation modeling (PLS-SEM) tested the hypotheses and validated the model. Reliability (Cronbach's alpha > 0.8) and construct validity (factor loadings > 0.7) were confirmed.

Findings

The research presents several significant outcomes:

- **AI Avatars enhance employer branding** through personalization, constant availability, and organizational alignment.
- **Employee experience mediates the relationship** between AI integration and job satisfaction, confirming that digital interaction quality directly influences brand perception and retention.
- **Transparency in AI-led evaluations** improves perceived fairness, strengthening organizational trust.
- **Cultural and ethical barriers**—such as data misuse, algorithmic bias, and depersonalization—emerge as key adoption obstacles.

Statistical modeling showed strong path coefficients: AI → Employer Brand ($\beta = 0.85$), AI → Job Satisfaction ($\beta = 0.82$), Satisfaction → Retention ($\beta = 0.79$), with model fit indices confirming robustness (CFI = 0.92, RMSEA = 0.06). The proposed model demonstrates both explanatory and predictive power in illustrating the interplay between AI avatars and employer branding.



Conclusion

This study pioneers a multidimensional framework for understanding the strategic application of AI avatars in employer branding. It demonstrates that AI avatars, when deployed responsibly, act as digital brand ambassadors—augmenting employee interaction, organizational transparency, and employer value proposition. However, technological integration must be approached with attention to ethical AI design, cultural resonance, and employee trust. The findings contribute to the growing body of research on AI-HRM synergy and support the notion that ethical, employee-centered digitalization can transform traditionally static sectors like energy into agile, attractive workplaces. Practically, the study offers actionable insights for HR leaders, policymakers, and technology designers aiming to align AI initiatives with organizational branding strategies and employee well-being.

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