Original Article

AI Strategy in Healthcare CHRM: Analyzing the Influence Organization Effective Performance Evidence from the Private Hospitals of Lahore Pakistan

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Conflict of Interest: None.

ABSTRACT

Background: The advent of Artificial Intelligence (AI) within organizational frameworks, particularly in the realm of Human Resource Management (HRM), has initiated a transformative shift in operational efficiencies and strategies across various sectors. This integration aims to leverage AI's capabilities to augment human decision-making, enhance operational efficiency, and foster a culture of innovation within organizations. Despite the potential benefits, the practical application and tangible impact of AI strategies on organizational effectiveness remain areas of significant academic and practical interest.

Objective: This study aimed to investigate the influence of AI strategies and creativity oriented HRM practices on organizational effective performance. It sought to explore the synergistic relationship between AI implementation and innovative HR practices, and their collective impact on enhancing organizational efficiency and performance metrics.

Methods: Employing a cross-sectional survey design, the study collected data from employees working in private hospitals in Lahore, Pakistan. A total of 144 valid responses were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the relationships between AI strategy implementation, creativity-oriented HRM practices, and organizational effective performance. Reliability and validity of the constructs were evaluated through Cronbach's alpha, composite reliability, and average variance extracted (AVE) measures.

Results: The findings revealed that AI strategy implementation (Cronbach's alpha = 0.942, AVE = 0.611) and creativity oriented HRM practices (Cronbach's alpha = 0.932, AVE = 0.585) were both significantly associated with enhanced organizational effective performance (Cronbach's alpha = 0.932, AVE = 0.533). The path analysis indicated strong positive relationships between AI strategies and creativity-oriented HRM practices ($\beta = 0.688$, $p < 0.001$), between AI strategies and organizational performance ($\beta = 0.228$, $p = 0.004$), and between creativity-oriented HRM practices and organizational performance ($\beta = 0.597$, $p < 0.001$). The model explained 59% of the variance in organizational effective performance.

Conclusion: The study concludes that the strategic integration of AI within HRM frameworks significantly contributes to organizational effectiveness. Emphasizing creativity-oriented HRM practices in conjunction with AI strategies can lead to substantial improvements in organizational performance. These findings underscore the importance of a strategic approach to AI integration in HRM, highlighting the need for organizations to foster environments that promote innovation and creativity.

Keywords: Artificial Intelligence, Human Resource Management, Organizational Performance, Creativity-oriented HRM Practices, Partial Least Squares Structural Equation Modeling.

INTRODUCTION

The integration of artificial intelligence (AI) within organizational strategies, particularly in the healthcare sector, signifies a pivotal shift towards enhancing operational efficiency and effectiveness (1, 2). Originating in the 1950s, the concept of AI has evolved significantly, gaining momentum with the advent of the big data era and the subsequent digital revolution. Despite its potential, the adoption of AI across various organizational functions has been gradual, with many institutions failing to fully leverage AI capabilities

in emulating human intelligence across diverse data inputs, such as text, numerical data, images, and sound, to facilitate decision-making processes (2-4). This limited application often restricts AI's integration to singular organizational functions, thereby underutilizing its potential to revolutionize business operations comprehensively (4-6).

In light of these challenges, our research delves into the realm of artificial intelligence strategy (AIS) within the healthcare sector, focusing on private hospitals in Lahore, Pakistan (7, 8). We adopt an interdisciplinary approach, amalgamating insights from existing literature on AIS implementation across various business functions, such as production, operations, supply chain management, and notably, human resources management (HRM) (9, 10). Our study emphasizes the collaborative synergy between human capabilities and AI technologies, highlighting the critical role of creativity-oriented HRM (CHRM) in fostering an environment conducive to employee creativity, innovation, and, ultimately, organizational effectiveness (6-9).

The crux of our investigation centers on the transformative impact of AIS on healthcare HRM, exploring how AI-enhanced practices can bolster organizational performance. Recognizing the scarcity of empirical research on the direct correlation between AI implementation and organizational performance, our study seeks to bridge this gap (11, 12). We propose that AIS, particularly when integrated within HRM practices focused on creativity and innovation, can significantly contribute to enhancing organizational effectiveness. This assertion is supported by our examination of AI's role in facilitating knowledge sharing, a fundamental aspect of fostering an innovative organizational culture (13-15).

Our empirical findings suggest a positive relationship between the strategic implementation of AI and organizational performance within the healthcare sector. This relationship is mediated by the innovative HRM practices that promote creativity among employees. Specifically, our study demonstrates how AIS can enhance the quality of shared knowledge, streamline operational processes, and encourage a culture of continuous innovation and adaptability (16-18).

Furthermore, our research offers practical implications for AI-driven enterprises, particularly within the healthcare industry of
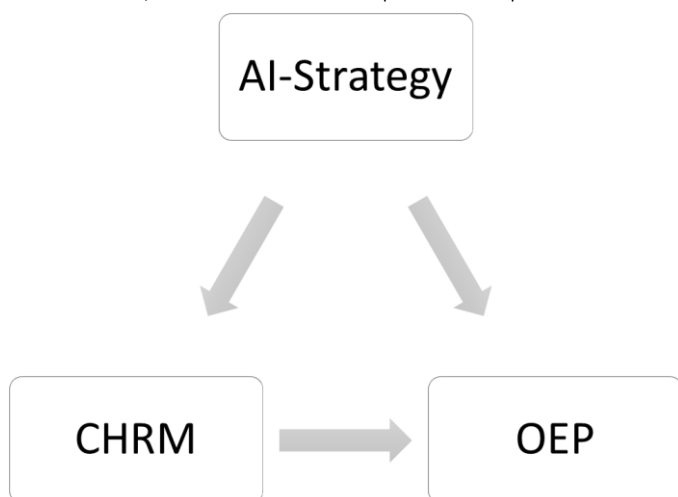

Figure 1 Model

emerging economies (10). It outlines strategies for the effective integration of AI within HRM practices, advocating for a balanced approach that leverages AI technologies while emphasizing the indispensable role of human creativity and innovation. This strategic alignment between AI and HRM not only enhances organizational performance but also fosters a culture of innovation, driving growth and adaptability in a rapidly evolving healthcare landscape (5, 14, 17, 19).

Our study contributes to the academic discourse on AIS, providing empirical evidence of its positive impact on organizational performance through the lens of HRM within the healthcare sector. By highlighting the synergistic relationship between AI and human creativity, we underscore the potential of AI strategies to revolutionize healthcare HRM, paving the way for a new era of operational excellence and innovation.

MATERIAL AND METHODS

In the pursuit of elucidating the impact of Artificial Intelligence Strategy (AIS) and Creative Human Resource Management (CHRM) on organizational effective performance (OEP) within the healthcare sector, our study embarked on a comprehensive data collection process involving employees from private hospitals located in Lahore, Pakistan. The initial step entailed engaging with Human Resource (HR) managers of these hospitals to facilitate the participation of their employees. During these interactions, the importance of the research was conveyed, with a strong emphasis on the confidentiality and exclusive research utilization of the responses collected. Following these discussions, questionnaires were distributed to employees as per the schedules provided by the HR managers. To enhance the efficiency of data submission, Google Forms was utilized as the primary tool for electronic dissemination of the questionnaires (4, 8-10).

The data collection yielded a total of 148 responses. However, after excluding four incomplete submissions, the final dataset comprised 144 valid responses. The evaluation framework for Artificial Intelligence Strategy (AIS) was based on a 12-item scale, adapted from the work of Duft et al. (2020) (20). Similarly, the assessment of Creative Human Resource Management (CHRM) was conducted using a 14-question scale derived from Song et al. (2019), and Organizational Effective Performance (OEP) was evaluated through a 14-item scale, sourced from Gold et al. (2001) (21, 22).

To ensure the ethical integrity of our research, all procedures were meticulously designed to adhere to the principles outlined in the Declaration of Helsinki. Participants were informed about the purpose of the study, the confidentiality of their responses, and their right to withdraw at any time without any consequences. Informed consent was obtained from all participants prior to their inclusion in the study, ensuring that they were fully aware of their participation and the ethical considerations involved (11, 14). For the analysis of the collected data, the study employed Partial Least Squares Structural Equation Modeling (PLS SEM) to

RESULTS

The examination of the reliability and convergent validity of the constructs within our study reveals a significant foundation for the artificial intelligence strategy (AIS), creativity oriented HRM (CHRM), and organizational effective performance (OEP). The loadings for AIS ranged from 0.708 to 0.827, indicating strong item reliability and validity, which is critical for ensuring the integrity of the construct measurements (Table 1). Similarly, the CHRM construct demonstrated robust loadings between 0.501 and 0.854, although the lower end of this range suggests that certain items may have weaker associations with the underlying construct. The loadings for OEP also showed a consistent pattern of reliability, with values spanning from 0.641 to 0.786, underscoring the variable's capacity to capture the essence of organizational performance effectively.

Further analysis of the reliability characteristics of these constructs presents a compelling narrative of internal consistency and composite reliability (Table 2). The Cronbach's alpha values for AIS, CHRM, and OEP were reported at 0.942, 0.932, and 0.932, respectively, surpassing the commonly accepted threshold of 0.7 and indicating excellent internal consistency within the constructs. Composite reliability, measured by both rho_a and rho_c, further corroborated these findings, with all constructs demonstrating values above 0.93. These measures, alongside the average variance extracted (AVE) figures—which stood at 0.611 for AIS, 0.585 for CHRM, and 0.533 for OEP—solidify the constructs' reliability and the convergent validity of the measurement model.

The Heterotrait-Monotrait Ratio (HTMT) analysis provided insight into the discriminant validity between the constructs, showcasing the distinctiveness of each construct from the others (Table 3). The HTMT values between AIS and CHRM (0.728), AIS and OEP (0.674), and CHRM and OEP (0.812) were all below the conservative threshold of 0.85, suggesting adequate discriminant validity among the constructs. This indicates that each construct captures a unique aspect of the phenomena under study, essential for the structural model's integrity.

Path analysis results further enrich our understanding of the relationships among the constructs (Table 4). The hypothesis that AIS positively influences CHRM was strongly supported, with a beta coefficient of 0.688 and a highly significant p-value, indicating a robust impact of AIS on enhancing creativity-oriented HRM practices. The relationship between AIS and OEP also received empirical support, albeit with a lower beta value of 0.228, suggesting that while AIS contributes to organizational performance, its di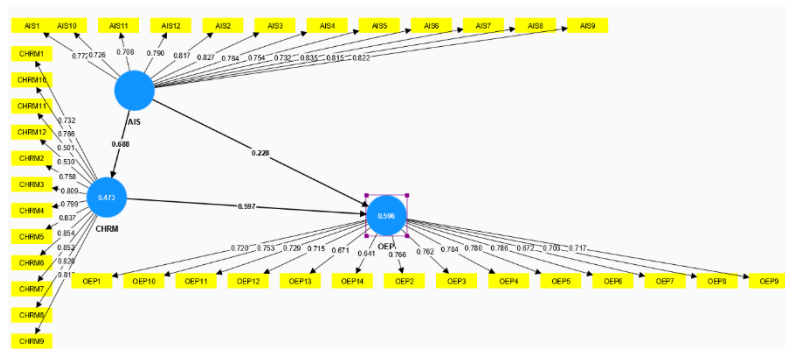rect impact is more moderate compared to its effect on CHRM. Moreover, the significant relationship between CHRM and OEP, indicated by a beta of 0.597, confirms the vital role of creativity-oriented HRM practices in driving organizational performance. These relationships highlight the interconnectedness of artificial intelligence strategies, human resource practices, and organizational effectiveness, underscoring the potential of integrating AIS within HRM to bolster organizational performance.

Figure 2 Measurement Model

Table 1 Reliability and Convergent Validity

Artificial Intelligence Strategy (AIS)											
Var	AIS1	AIS2	AIS3	AIS4	AIS5	AIS6	AIS7	AIS8	AIS9	AIS10	AIS11	AIS12
Loading	0.772	0.817	0.827	0.764	0.754	0.732	0.835	0.815	0.822	0.726	0.708	0.79
Creativity-oriented HRM (CHRM)											
Var	CHRM1	CHRM2	CHRM3	CHRM4	CHRM5	CHRM6	CHRM7	CHRM8	CHRM9	CHRM10	CHRM11	CHRM12

Artificial Intelligence Strategy (AIS)													
Loading	0.732	0.758	0.809	0.799	0.837	0.854	0.852	0.826	0.813	0.766	0.501	0.53	
Organizational Effective Performance (OEP)													
Var	OEP1	OEP2	OEP3	OEP4	OEP5	OEP6	OEP7	OEP8	OEP9	OEP10	OEP11	OEP 12	OEP 13	OEP 14
Loading	0.72	0.766	0.762	0.784	0.78	0.786	0.672	0.703	0.717	0.753	0.729	0.715	0.671	0.641

Table 2 Reliability Characteristics

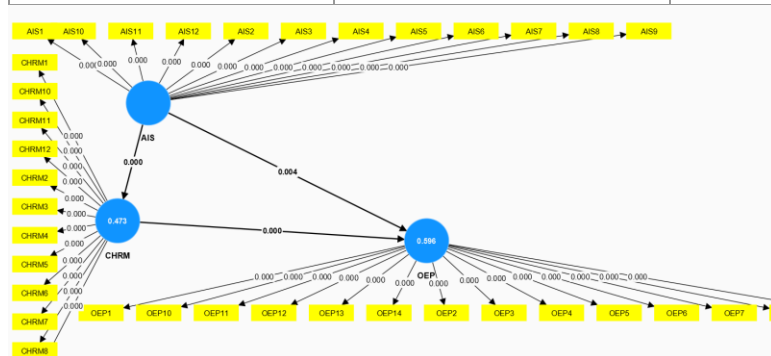| Reliability Characteristics	Artificial Intelligence Strategy (AIS)	Creativity-oriented HRM (CHRM)	Organizational Effective Performance (OEP)
Cronbach's Alpha	0.942	0.932	0.932
Composite Reliability (Rho_a)	0.944	0.935	0.933
Composite Reliability (Rho_c)	0.949	0.943	0.941
Average Variance Extracted (AVE)	0.611	0.585	0.533

Figure 3 Structural Model

Table 3 Heterotrait-Monotrait Ratio (HTMT)

	AIS	CHRM	OEP
AIS	-	0.728	0.674
CHRM	0.728	-	0.812
OEP	0.674	0.812	-

Table 4 Path Analysis Results

Hypothesis	Relation	Beta	SD	T value	P values	LL	UL	Decision
H1	AIS-> CHRM	0.688	0.047	14.704	0	0.588	0.775	Supported
H2	AIS-> OEP	0.228	0.079	2.874	0.004	0.067	0.375	Supported
H3	CHRM-> OEP	0.597	0.062	9.575	0	0.47	0.721	Supported

Table 5 R-square of Constructs

Construct	R^2	Effect
Organization Effective Performance (OEP)	0.590	Strong

Lastly, the R-square value for OEP stands at 0.590 (Table 5), indicating that 59% of the variance in organizational effective performance can be explained by the model. This strong effect size demonstrates the substantial impact of both AIS and CHRM on organizational performance, reinforcing the importance of strategic AI integration and creativity oriented HRM practices in achieving enhanced organizational outcomes.

AI Strategy in Healthcare: Performance in Lahore's Private Hospitals
Ghaffar A., et al. (2024). 4(1): DOI: https://doi.org/10.61919/jhrr.v4i1.339

Journal of Health
and Rehabilitation
Research 2791-156X

JHRR

In summary, the statistical analyses and model testing conducted in this study present compelling evidence of the positive relationships between artificial intelligence strategy, creativity-oriented human resource management, and organizational effective performance. The reliability and validity of the constructs, alongside the significant path coefficients and effect sizes, provide a robust framework for understanding how strategic AI integration within HRM practices can drive organizational success.

DISCUSSION

The integration of Artificial Intelligence (AI) within organizational frameworks, particularly in the realm of Human Resource Management (HRM), has marked a transformative era in operational methodologies across various sectors. This study delved into the intricacies of AI strategies and their symbiotic relationship with creative HR practices, aiming to unravel their collective impact on enhancing organizational effectiveness. Reflecting on the extensive body of literature, it became evident that the implementation of AI strategies harbors the potential to significantly elevate operational efficiency, streamline decision-making processes, and foster an environment conducive to innovation (23, 24). Despite the promising prospects, the journey towards the seamless incorporation of AI into organizational ecosystems is fraught with challenges, primarily revolving around the effective deployment of AI technologies and the adaptation of the workforce to this digital transformation (25).

Drawing from the empirical evidence gathered, the study substantiated the hypothesis that an organization's adoption of AI strategies positively correlates with its operational success. The findings align with previous research, highlighting AI's capacity to augment decision-making accuracy and operational efficiency (26, 27). However, it also brought to light the critical role of human judgment and collaboration in optimizing the outcomes of AI implementation, underscoring the complementary nature of human and machine intelligence (27).

The exploration of Creative Human Resource Practices (CHRPs) and their influence on organizational performance unearthed a significant association, suggesting that innovation within HR practices is a key driver of organizational success. This revelation is supported by scholarly discourse that emphasizes the importance of nurturing a culture of creativity and innovation within organizations (28, 29). The empirical findings of this study corroborate the notion that CHRPs can significantly enhance employee morale, productivity, and problem-solving capabilities, thereby contributing to improved organizational performance metrics.

Moreover, the study ventured into examining the impact of AI on the implementation of CHRPs, revealing a positive influence. This aspect of the research echoed the potential of AI to revolutionize HR functions by automating routine tasks, thereby allowing HR professionals to concentrate on strategic initiatives aimed at fostering a creative and innovative work environment (30, 31).

From a practical standpoint, the insights derived from this study offer valuable guidance for organizations aspiring to harness the power of AI within their HR frameworks. The emphasis on strategic integration of AI and the promotion of CHRPs underscores the necessity for a holistic approach that blends technological advancements with human creativity and innovation. The study advocates for continuous investment in AI-focused training and development programs, ensuring that HR professionals are well-equipped to leverage AI tools effectively.

The theoretical contributions of this research enrich the existing literature by providing a nuanced understanding of the dynamic interplay between AI strategies, CHRPs, and organizational effectiveness. It challenges conventional HRM theories to evolve and accommodate the transformative potential of AI, thereby broadening the theoretical horizons to encompass the strategic integration of technology within human-centric practices.

Acknowledging the limitations of this study, including its cross-sectional nature and reliance on self-reported data, future research is encouraged to adopt longitudinal designs and explore diverse industry contexts. This would enhance the generalizability of the findings and offer deeper insights into the long-term impacts of AI on organizational performance. Additionally, investigating the moderating effects of contextual factors on the efficacy of AI and CHRPs could further elucidate the complexities surrounding their implementation.

CONCLUSION

In conclusion, while the advent of AI in organizational strategies and HRM presents unparalleled opportunities for enhancing operational efficiency and fostering innovation, its successful integration requires a nuanced understanding of the intricate balance between technology and human ingenuity. This study contributes to the burgeoning field of research at the intersection of AI and HRM, paving the way for future explorations that could further demystify the potential of AI in transforming organizational landscapes.

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