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An Examination and Evaluation of the Innovative Human Resources Model in Iraqi Higher Education Institutions

Thikra Jawad. Kadhim Alaaedi[1], Sayyed Hamidreza. Mirtavousi[2*], Latif Abdulridha. Atiyah[3], Sayyed Mohammad Reza. Davoodi[4]

[1] PhD Student, Department of Public Administration, Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, Iran
[2] Assistant Professor, Department of Public Administration, Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, Iran
[3] Assistant Professor, Department of Management, Economics and Business Administration Faculty, Al-Qadisiyah University, Iraq
[4] Associate Professor, Social and Cultural Researches Center, Dehaghan Branch, Islamic Azad University, Dehaghan, Iran

*** Corresponding author email address**: hamidreza.mirtavousi@yahoo.com

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A B S T R A C T

The objective of this study is to examine and evaluate an innovative human resources model tailored to the context of higher education institutions in Iraq, with the aim of enhancing organizational innovation, adaptability, and performance through strategic HR practices. This research adopts a mixed-method exploratory-applied design, combining qualitative and quantitative approaches. The qualitative phase involved thematic analysis of semi-structured interviews with 10 academic experts and senior managers in Iraq's higher education sector, selected through purposive sampling until theoretical saturation was achieved. The quantitative phase used a researcher-developed questionnaire distributed to 137 participants, including managers, deputies, and HR specialists from higher education institutions, identified using Cochran's formula. Structural equation modeling (SEM) was applied using Smart PLS to assess the relationships between the components and dimensions of the proposed model. Data were collected through both library and field methods. The results of the qualitative phase led to the identification of five primary dimensions: innovation strategy formulation, development of an innovation-based organizational structure, promotion of an innovative organizational culture, development of innovative systems and processes, and enhancement of human capabilities based on innovative behavior. Quantitative analysis confirmed the statistical significance of all relationships, with all t-values exceeding 1.96 and factor loadings above 0.94, indicating strong model validity. The overall model fit index (GoF) was calculated at 0.69, suggesting a robust model capable of explaining the interactions among variables influencing innovative HR practices in higher education. The study concludes that implementing an innovative human resources model significantly contributes to fostering creativity, collaboration, and strategic adaptability within higher education institutions. The integration of innovation-focused HR practices—such as training, empowerment, participatory decision-making, and performance incentives—creates a conducive environment for sustainable institutional

development. These findings offer actionable insights for academic administrators aiming to align HR strategies with organizational innovation goals.

Keywords: *Innovative human resource model; higher education institutions; organizational innovation*

1. Introduction

Today, due to intense competition among organizations to reduce costs and enhance efficiency and effectiveness, performance evaluation and reporting have become essential not only in the private sector but also in the public sector. It has turned into a major concern for managers across all sectors. Universities are no exception to this trend. Given the fierce competition among universities in securing resources and attracting students, these institutions in various countries no longer enjoy the stability of the past. Like other organizations in both the public and private sectors, they require performance evaluation and reporting to support their missions and facilitate knowledge transfer (Bahiroh & Imron, 2024; Balabonien & Vecerskiene, 2014). Moreover, they face intense national and international pressure to improve performance in order to utilize resources more efficiently, similar to private sector practices. They are also required to design mechanisms for accountability and control to ensure the quality of their operations and understand their position among competitors at various levels (Akhoundinia & Baharloo, 2023; Al-Hariri et al., 2023; Al Daboub et al., 2024).

Organizations foster innovation by aligning behaviors and achieving desirable outcomes for employees through innovative human resource management (HRM) practices. Although employees are widely recognized as valuable assets that help organizations develop core competencies to attain competitive advantage, limited information exists regarding how innovative HRM practices are linked to the service sector (Shipton et al., 2017). Human capital is the lifeblood of every organization and sustains its competitive standing. Human resource development is a central process that focuses on employee empowerment and delegation of authority. This domain has evolved to uncover and nurture latent talents. It leverages learning and growth to identify, assess, and develop key competencies. This process enables individuals to excel in their current roles and plan for future career advancement through personal planning and training (Crowther & Seifi, 2017).

In today's dynamic and rapidly changing world, increasing knowledge and improving both individual and organizational skills are inevitable. Organizations that fail to plan for the enhancement of their employees' knowledge and skills are likely to face difficulties (Zarif et al., 2023). Innovative strategies are emerging as viable approaches for addressing the complex challenges facing higher education institutions. The obligation of academic institutions to adhere to global academic standards necessitates a reassessment and transformation of managerial approaches. This involves implementing forward-looking and innovative strategies that address the multifaceted issues inherent in the educational landscape. As institutions strive to produce graduates equipped with the skills and knowledge needed in an evolving global environment, adopting innovative strategies becomes essential to strengthen a dynamic and responsive higher education system capable of meeting the diverse needs of students and society at large (Esmaeil Kamali Rad et al., 2024; Garg et al., 2022; Shaddiq et al., 2023).

The importance of human resource development in higher education cannot be overstated. Numerous instances exist where implementing a simple creative idea—often with minimal cost—has resulted in significant profits for organizations. However, innovation does not occur automatically; it is realized through an organization's human resources. Therefore, human resources are the key to innovation. In this context, the role of managers is crucial. Through well-informed decision-making, they can steer their human resources toward innovation. Since innovation does not originate from external sources but emerges from within the human capital due to often unknown causes, it is imperative for decision-making managers to create motivational conditions and provide a conducive environment for innovation (Akhoundinia & Baharloo, 2023).

It is necessary for faculty members, administrative staff, and institutional leaders to possess the skills, knowledge, and attitudes aligned with the mission of the institution to achieve superior academic standards. Equally important is the vital role of communication—both internal and external—as a decisive factor in fostering an environment conducive to institutional growth and development. Beyond acquiring individual competencies, collaborative and effective exchange of ideas, information, and feedback becomes central within the academic community (Karim et al., 2024). Internally, transparent communication channels facilitate coordination, cooperation, and a shared sense of

purpose among diverse stakeholders. Externally, effective communication is essential for building partnerships, engaging with the broader community, and enhancing the institution's reputation. Thus, holistic human resource development, coupled with strategic communication practices, lays the foundation for sustainable success and evolution of higher education institutions in a shifting educational landscape (Zaakiyyah, 2024).

Higher education plays a critical role in cultivating high-quality and highly competitive human resources. In the current era, the dynamics of the higher education environment have become increasingly complex, necessitating innovative managerial strategies to confront challenges and ensure the continuous improvement of quality.

Accordingly, this study seeks to answer the following research question: What is the status of the innovative human resources model in Iraqi higher education institutions?

2. Methods and Materials

Given that the aim of this study is to examine and evaluate the innovative human resources model in higher education institutions in Iraq, the research methodology is classified as exploratory-applied based on its objective, mixed-method (qualitative-quantitative) based on the type of data, cross-sectional based on the timing of data collection, inductive-deductive in terms of philosophical orientation, and descriptive-survey in terms of the method of data collection and research nature.

The first part of the study employed a qualitative approach to identify, classify, and extract concepts based on the perspectives of relevant experts and specialists. The qualitative method used in this section was based on thematic analysis. The second part of the study adopted a quantitative approach, using feedback from the research population to examine the relationships among research dimensions and to test the components and dimensions of the study. In this phase, thematic analysis was also used to analyze interviews with 10 relevant experts.

In the second (quantitative) phase of the study, structural equation modeling was applied to analyze the relationships between the dimensions and components of the model. Data for this phase were collected using a researcher-made questionnaire. Accordingly, the data collection methods for this research included both library and field methods.

Participants in the qualitative phase, including academic experts and managers of higher education institutions in Iraq, were selected using purposive non-probability sampling. Interviews continued until theoretical saturation was reached. In the quantitative phase, the population consisted of managers, deputies, and specialists in Iraq's higher education sector. The sample was selected using Cochran's formula. The quantitative population was 214, and the sample size, based on Cochran's formula, was determined to be 137. Additionally, a separate sample involving managers and employees of governmental organizations in the city of Karbala was considered. Since the population was considered unlimited, Cochran's formula yielded a sample size of 384.

Data collection in the qualitative phase was conducted through semi-structured interviews. In qualitative research, the researcher must align with the type of information being sought. Experts have proposed three main strategies for qualitative data collection: in-depth interviews, observation, and sampling/counting, which researchers may use in their studies. Document analysis, including review of records and physical artifacts (e.g., wall writings, stable and unstable documents), can also be considered. In this study, exploratory interviews were used as the qualitative data collection method. This technique was selected due to its flexibility and its ability to be applied in various settings while generating deep insights. Moreover, it provides a comfortable environment for participants compared to other qualitative methods such as participatory observation, thereby holding a more favorable position in qualitative research.

In the quantitative method, a researcher-made questionnaire was developed based on the model derived from the qualitative phase and administered to the selected sample.

In the quantitative phase, data analysis was performed using structural equation modeling via the SmartPLS software.

3. Findings and Results

An analysis of the average age of the interviewed experts revealed that university professors and academic experts had the highest average age at 45.20 years, while organizational managers had the lowest average age at 43.19 years. Regarding work experience, university professors and experts had the highest average experience at 45.20 years, while organizational managers had a lower average at 15.63

years. Among the participants in the qualitative phase, six held a PhD and four held a Master's degree.

By analyzing the identified (open) codes derived from the interviews, themes were ultimately defined and labeled in the final stage. The analysis revealed five main dimensions that are crucial for designing an innovative human resources model in higher education institutions in Iraq. These five dimensions include: defining innovation strategies, developing an innovation-based organizational structure, creating an innovative organizational culture, developing innovative systems and processes, and enhancing organizational human capabilities based on innovative behavior. Each of these main dimensions consists of subcomponents.

Table 1

Main Dimensions Derived from Secondary Codes Based on Primary and Open Codes

Row	Extracted Secondary Codes
1	Defining Innovation Strategies
– Attracting and retaining innovative talent	
– Promoting collaboration and knowledge sharing	
– Managing innovative performance	
– Encouraging ideation	
– Stimulating creative thinking	
– Professional growth and continuous training	
2	Developing an Innovation-Based Organizational Structure
– Providing a flexible organizational structure	
– Forming multidisciplinary teams	
– Technology-driven organizational agility	
– Creating internal and external communication networks	
– Facilitating participatory environments	
– Enhancing access to educational resources	
3	Innovative Organizational Culture
– Creating a safe space for idea expression	
– Trusting and accepting employee errors	
– Sharing knowledge and experience	
– Embracing change and innovation	
– Developing creative thinking and rationality	
4	Developing Innovative Systems and Processes
– Establishing transformational leadership systems	
– Creating mechanisms for attracting and selecting innovators	
– Developing systems for rewarding innovation	
– Project management processes for innovative initiatives	
– Innovation performance evaluation systems	
– Expanding the use of artificial intelligence in the organization	
5	Enhancing Organizational Human Capabilities Based on Innovative Behavior
– Planning training and creativity development in the organization	
– Developing innovative skills among organizational members	
– Continuous evaluation of innovative performance	
– Developing leadership skills and competencies in innovation	
– Providing constructive feedback on innovative behaviors	
– Leveraging opportunities for collaboration with international organizations	

In the quantitative phase of the study, the sample consisted of 137 participants, of whom 67.15% were male (n = 92) and 32.85% were female (n = 45). Regarding age distribution, 27.01% were between 25 and 35 years old, 38.69% were between 35 and 45 years old, 21.17% were aged 45 to 50, and 13.14% were above 50 years. In terms of educational attainment, 23.36% held a bachelor's degree, 55.47% held a master's degree, and 21.17% held a PhD.

Concerning work experience, 13.87% had 5 years or less, 22.63% had 6 to 10 years, 42.34% had 11 to 15 years, and 21.17% had more than 15 years of professional experience.

After examining the fit of the measurement models, structural model, and overall model—according to the data analysis algorithm in the PLS method—the researcher is permitted to investigate and test the relationships among the study variables. In this section, standardized path coefficients corresponding to the hypotheses and their associated t-values are examined. To confirm or reject hypotheses, the t-value must be greater than 1.96 or less than -1.96. Values between these two thresholds indicate that there is no statistically significant difference between the calculated regression weight and zero at the 95% confidence level.

Figure 1

Research Model with Standardized Coefficients

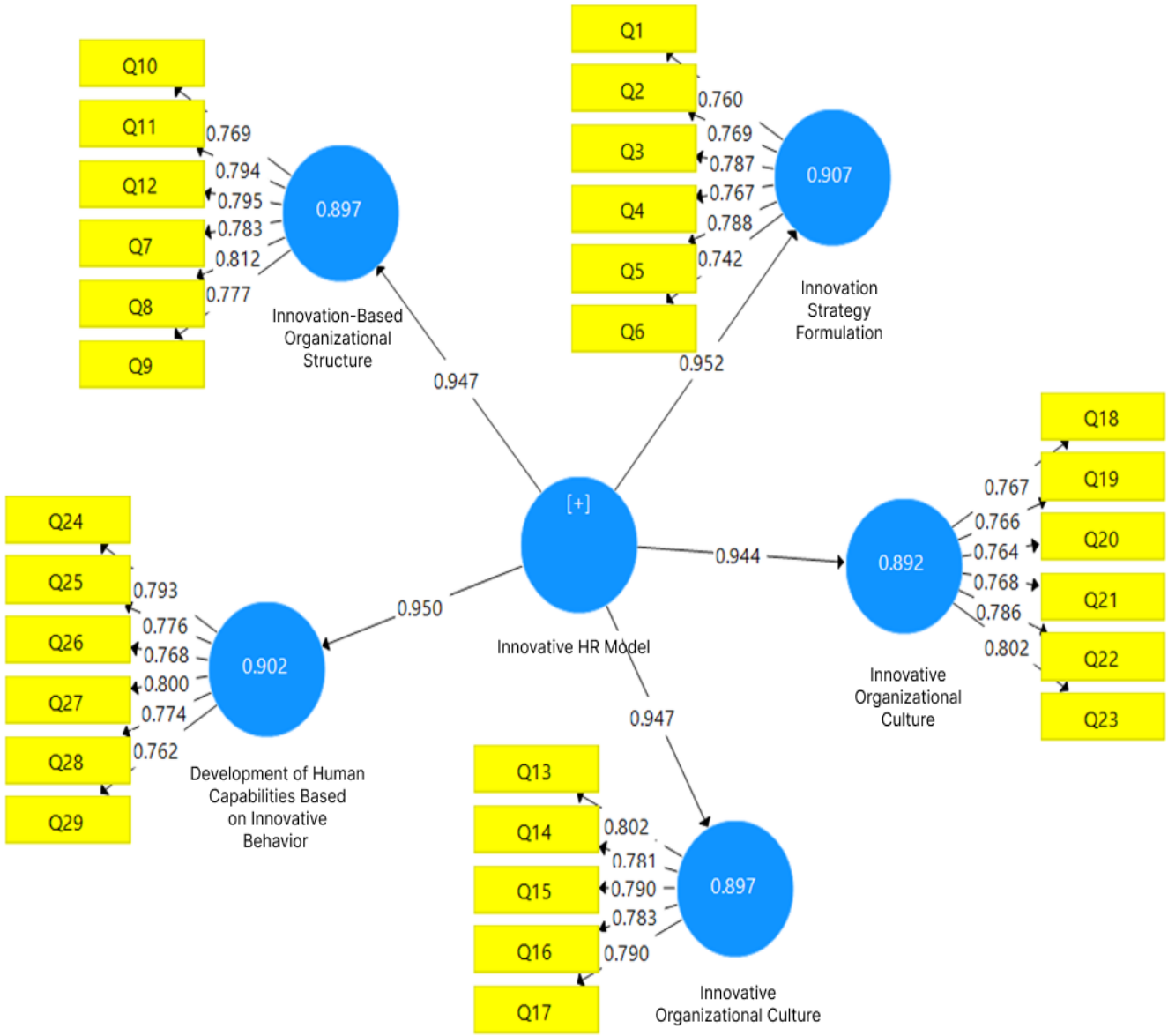

Figure 2

Research Model with t-values

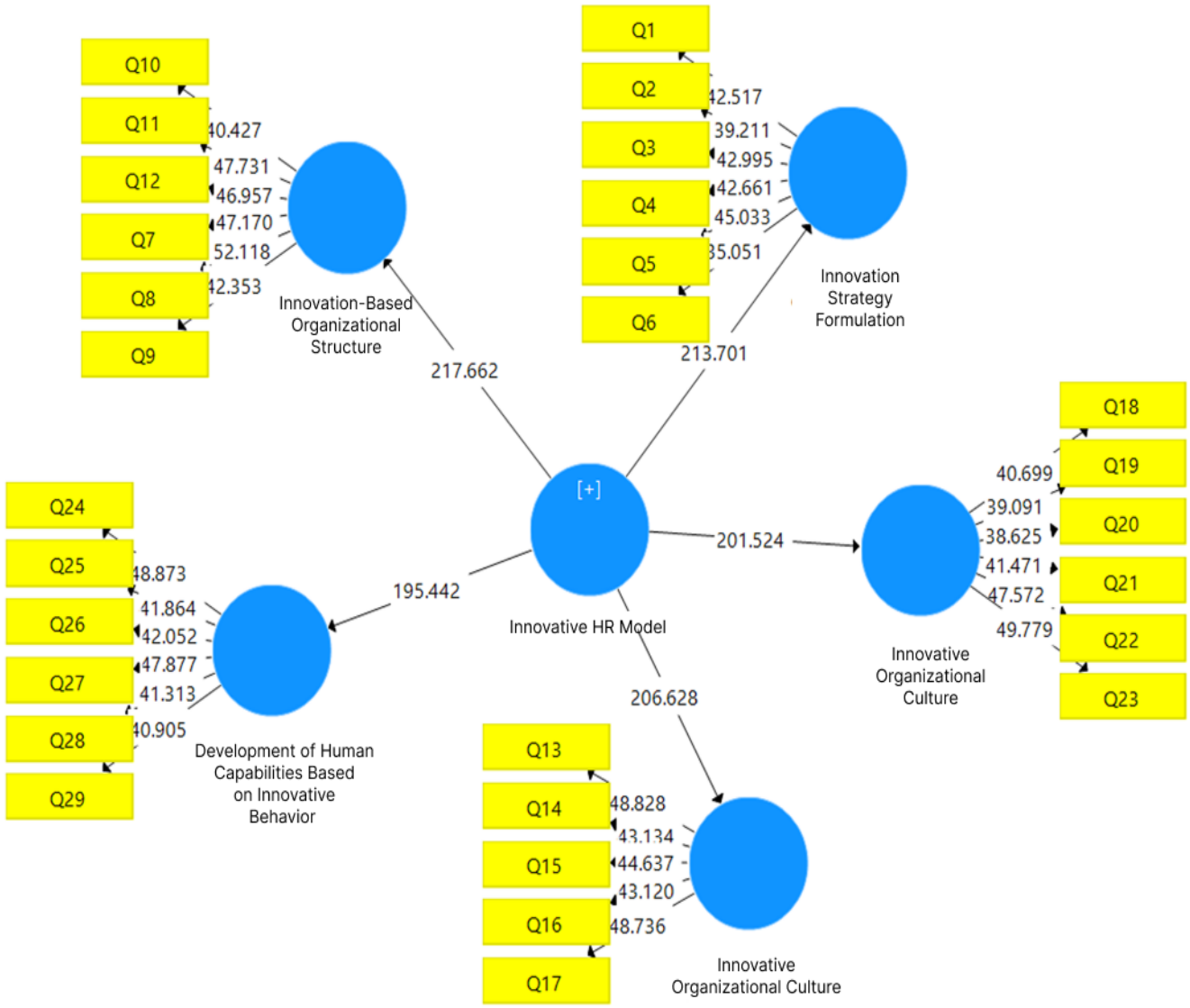

Table 2

Description of Research Constructs

Path	Factor Loading	*T*-Value	*P*-Value	Status
Innovative HR Model → Innovation Strategy Formulation	0.952	213.701	0.000	Confirmed
Innovative HR Model → Development of Human Capabilities Based on Innovative Behavior	0.950	195.442	0.000	Confirmed
Innovative HR Model → Innovation-Based Organizational Structure	0.947	217.662	0.000	Confirmed
Innovative HR Model → Development of Innovative Systems and Processes	0.944	201.524	0.000	Confirmed
Innovative HR Model → Innovative Organizational Culture	0.947	206.628	0.000	Confirmed

To evaluate the fit of the overall model—which incorporates both the measurement and structural components—the GoF (Goodness of Fit) index is used. GoF is calculated using the following formula:

(1) GOF = √(average communalities × average R^2)

The following table presents the average communalities and average R^2 values. Based on these values, the GoF was calculated to be 0.69, which indicates a strong overall model fit.

Table 3

Average Communalities and Average R^2 Values

Component	R^2	Communality	Average Communality	Average R^2
Innovation Strategy Formulation	0.907	0.556	0.491	0.899
Development of Human Capabilities Based on Innovative Behavior	0.902	0.484	—	—
Innovation-Based Organizational Structure	0.897	0.563	—	—
Development of Innovative Systems and Processes	0.892	0.597	—	—
Innovative Organizational Culture	0.897	0.473	—	—
Innovative HR Model	—	0.491	—	—

The relationship between the Innovative Human Resources Model and Innovation Strategy Formulation was found to be significant with a t-value of 213.701 (t > 1.96); thus, the relationship is statistically significant. The second-order factor loading was calculated as 0.95.

The relationship between the Innovative Human Resources Model and the Development of Human Capabilities Based on Innovative Behavior was also significant with a t-value of 195.442 (t > 1.96); hence, this relationship is confirmed. The second-order factor loading was 0.95.

The relationship between the Innovative Human Resources Model and Innovation-Based Organizational Structure was significant with a t-value of 217.662 (t > 1.96), confirming the relationship. The second-order factor loading was 0.94.

The relationship between the Innovative Human Resources Model and the Development of Innovative Systems and Processes was significant with a t-value of 201.524 (t > 1.96), which supports the significance of this relationship. The second-order factor loading was 0.94.

The relationship between the Innovative Human Resources Model and Innovative Organizational Culture was confirmed with a t-value of 206.628 (t > 1.96), indicating a statistically significant relationship. The second-order factor loading was 0.94.

Since all t-values were greater than 1.96, all relationships are statistically significant and thus supported.

4. Discussion and Conclusion

The managerial component in the field of human resources has a significant relationship with innovation strategy formulation. This relationship is attributed to several factors: Talent development—innovative human resources support the identification and recruitment of creative and talented individuals within the organization. These individuals can contribute new and innovative ideas to improve processes and products. The innovative HR model fosters a culture that supports innovation by creating an environment in which employees feel free to offer suggestions and express creativity. This culture facilitates the more effective implementation of innovation strategies. The model also emphasizes continuous training and development. Enhancing employees' skills and knowledge enables them to participate in innovation processes and identify new solutions. In this model, performance evaluation is designed to encourage innovation and creativity. This approach increases employee motivation to engage in innovative transformations. These findings align with the study by Bahiroh and Imron et al. (2024) on innovative human resource management strategies in the digital transformation era (Bahiroh & Imron, 2024). The present study explains that the innovative HR model focuses on identifying and attracting individuals with creative and innovative traits. These capabilities cultivate innovative behavior in employees. The model prioritizes continuous learning and development. By providing training programs and learning opportunities, employees acquire the skills necessary for creative thinking and innovation, thereby enhancing their capabilities. The innovative HR model promotes an organizational culture that supports creativity and innovation. It provides employees with opportunities to participate in decision-making and innovation processes, leading to a stronger sense of ownership over projects and innovative ideas. Performance evaluation and reward systems in the innovative HR model are designed based on innovative behaviors, which further motivate employees to develop and improve innovative ideas. These results are consistent with the study by Chen et al. (2024) on diverse human resource slack and corporate innovation: evidence from policy-related firms (Chen et al., 2024). They also align with the study by Al Daboub et al. (2024) (Al Daboub et al., 2024).

Innovative human resources promote a culture of innovation within organizations. This culture enables

employees to present new ideas and develop processes that facilitate innovation. Innovative systems require employees equipped with up-to-date skills and knowledge. Innovative HR contributes to the development of training and empowerment programs that prepare employees to create and implement innovative processes. Innovative systems typically demand open and collaborative processes where ideas are collected from all organizational levels. Innovative HR, by creating structures that enable such participation, helps organizations quickly identify and operationalize new ideas. These findings are in line with a study on the impact of innovations in HR practices, innovation capabilities, and competitive advantage on the performance of small and medium-sized enterprises in Thailand (Wongsansukcharoen & Thaweepaiboonwong, 2023).

Based on the research findings, the following recommendations are proposed:

Design and implement regular training programs focused on enhancing creativity, problem-solving, and innovation skills. These programs may include creativity workshops, idea exchange sessions, and training on emerging technologies. Through these initiatives, employees can continuously acquire new knowledge and skills and actively contribute to an innovative organizational culture.

Create environments and platforms that foster collaboration and employee participation. These may include creative meeting rooms, open spaces for team interaction, and digital tools for collaboration. Encouraging teamwork can facilitate innovative ideas and strengthen a culture of participation.

Establish systematic processes for evaluating innovative projects and providing feedback to teams. This ensures that innovation remains a progressive learning process. These evaluations may involve assessing the performance and impact of ideas and projects and sharing learnings and best practices across the organization.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were considered.

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