

Artificial Intelligence in the Path of Strategic Human Resources Planning

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ABSTRACT

Objective: This research aimed to identify the transformations arising from the emergence of artificial intelligence in organizations' strategic planning, the resulting challenges, and to provide scientific-practical suggestions for managing these challenges.

Methodology: This study is applied in purpose and descriptive-exploratory in method. Data were collected through theoretical foundations, literature review, in-depth semi-structured interviews, and thematic analysis in 2025. Fifteen experts in computer science, artificial intelligence, human resource management, psychology, and ethics were selected via snowball sampling. The interview process followed a zigzag movement between data collection and analysis until theoretical saturation. Cohen's kappa coefficient was 0.75, with a standard error of 0.22.

Findings: The findings indicated that artificial intelligence management requirements in human resource management include attention to changes in management style, human resources, organizational structure, human relations, organizational behavior, anticipation of possible challenges, and scientific-operational solutions. Five main themes were identified: benefits of strategic planning, implementation challenges, technology integration, key stakeholder participation, and employee skills development and leadership.

Conclusion: Strategic human resource planning in the AI era requires a comprehensive, human-centered, and adaptable approach. Artificial intelligence should be viewed as a complement and assistant to human resources, not a replacement. Adaptive policies—including cultural infrastructures, ethical frameworks, employee retraining, and balance between technology and human relations—are essential.

Keywords: Artificial Intelligence Management, Human Resource Management, Strategic Planning, Digital Age, Qualitative Research Method.

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1. Introduction

When it comes to planning for artificial intelligence in human resource management, AI technologies offer promising solutions, from automating repetitive tests to improving human resource processes with neutralized biases.

As artificial intelligence continues to change work environments, organizations are also planning to improve their human resource practices to achieve desired performance and survival in a competitive landscape. At this juncture, although we have theoretical familiarity with concepts such as artificial intelligence, automation, and robotics, research on how to strategically and operationally plan for the application of artificial intelligence in organizational management is scarce.

Strategic human resource planning is essential to empower companies to face the rapid changes caused by the evolution of artificial intelligence. Human resource management, as a profession, faces several disruptions in planning. Therefore, the need for direct, reverse, and multilateral engineering in organizational plans is felt more than ever. Organizational experts do not have a comprehensive plan for understanding and managing this intelligence (Amie-Ogan, 2025).

Considering the benefits of artificial intelligence and the effects of its use in human resource management at the organizational and employee levels is unparalleled, but in practice, the challenges of its application are undeniable.

Therefore, there is a need for strategic planning regarding the expected results of deploying artificial intelligence in human resource management and the relationship between these results (Akour et al., 2024).

The fundamental issues that form the basis of this research are rapid changes in skill requirements, the evolution of technology-based business models, and the demand for adaptable and innovative human resources. Although the existing literature has extensively addressed various aspects of developments arising from artificial intelligence and human resource planning, there is still a knowledge gap regarding the comprehensive integration of these two domains.

In relation to this research gap, this study will fill this gap by describing and aggregating the findings of key literature sources. Using an inductive approach, this research creates a deep understanding of the relationship between human resource planning and the evolution of artificial intelligence, and also highlights the opportunities and challenges that must be considered to increase the effectiveness of human resource management in this era of artificial intelligence. Therefore, this research plays an essential role in providing strategic guidance for organizations facing the dynamics of change in the evolving world of artificial intelligence, so that the necessary awareness can be achieved to prevent negative consequences and pursue positive outcomes in the field of human resource management. Looking to the future, this research identifies knowledge gaps in the literature and provides opportunities for further research. Focusing on innovative models of human resource planning and change management strategies in the midst of digital transformation can be key steps to fill this gap.

Therefore, the main objective of the present research has been to identify the developments arising from the presence and emergence of a new collaboration called artificial intelligence in the organizational planning process, the challenges arising from it, and to provide the necessary scientific-practical suggestions for productive management to prevent and treat these challenges; therefore, this research can be useful in providing a strategic roadmap for organizational managers.

2. Theoretical Foundations and Literature Review

2.1. Theoretical Foundations

The only constant in a world characterized by volatility, uncertainty, complexity, and ambiguity is change. Human resource management has transformed from performing ordinary tasks such as hiring and firing into serving as a strategic business partner. Similarly, the field of artificial intelligence (AI) has undergone a paradigm shift, evolving from a simple search tool into the conceptualization and construction of intelligent robotics (Awaludin, Yasin, & Risyda, 2024).

Artificial intelligence has become a set of powerful technologies that redefine multiple application domains, including human resource management. Planning for the implementation of artificial intelligence in human resource management is considered a positive development, as it must create optimal value at minimum cost (Avery, Leibbrandt, & Vecchi, 2024). Artificial intelligence focuses on developing tools with detection power and reasoning comparable to humans. The modernization of human resource management through the integration of digitalization into the laborious processes inherent in its operation has undergone a remarkable transformation.

Human resource management has created strategic plans to leverage technological advances such as the Internet and computers to enhance electronic productivity, cost efficiency, and market competition. The rapid development of human resource information systems was ignited by technological advances, which paved the way for the penetration of tactical practices into human resource operations with contemporary features such as artificial intelligence.

As it improves sustainable business models, the volume of organizational, employee-related, and task-oriented data for which human resources is fundamentally accountable has led to planning for the integration of artificial intelligence into several tactical human resource processes (Deep Smith, 2025).

However, this advancement and expansion of functions require an understanding of the current state of artificial intelligence in tactical human resource methods. This necessitates that human resource experts and researchers investigate existing sources that clarify the capabilities and domains of artificial intelligence-enhanced human resources for development in the human resource domain (Debrah, 2022).

Artificial intelligence can create real-time decision-making by using pre-installed algorithms and developed computational technologies through data analysis. These components learn independently and adapt to provide more complex responses to conditions.

Human resource management, which includes the use of artificial intelligence applications and the human element, has the potential to plan for enhanced employee experience within an organization. Obviously, potential outcomes such as accuracy, automation, computational power and capacity, real-time experience, and personalization directly or indirectly lead to the fundamental outcome of using artificial intelligence in human resource management, which is saving time and reducing costs. At this juncture, it is important to note that AI-based recruitment tools can accurately match candidates' skills and qualifications with job conditions. Human resource planning with artificial intelligence capability can process large volumes of data accurately and provide valuable insights for better decision-making (Deep Smith, 2025; B. Jovari, 2024; B. Jovari, 2025).

Strategic human resource planning is an approach that aligns human resource management with the overall strategy and goals of the company. This process involves developing a comprehensive plan in which human resource demands, strategies, and actions are outlined to achieve the company's goals (Amadinna & Borle, 2025).

In the era of artificial intelligence, strategic human resource planning plays a vital role in ensuring that organizations adapt to the changing landscape and leverage technology to advance growth and innovation (Alimjanova, 2025). Strategic planning for the application of artificial intelligence in the human resource management process optimizes various human resource functions, leading to time and cost savings while improving overall efficiency and employee satisfaction. AI-based planning can simplify repetitive tasks that would otherwise require human intervention (Suganthi, Praba, Thilaga, Kumar, & Deepa, 2025).

These tasks can be performed more effectively and continuously by artificial intelligence systems, leading to cost reduction and faster processing time. With high computational power, artificial intelligence tasks can be executed much faster and enable faster results. The increased computational power of artificial intelligence and cloud computing platforms provides on-demand access to extensive resources and allows organizations to use artificial intelligence capabilities without the need for huge investments in expensive hardware (Deep Smith, 2025).

Artificial intelligence activates real-time information for decision-making, feedback, and redirecting actions based on progress and responses, enabling companies to save time and cost. The real-time features of artificial intelligence can improve efficiency, reduce operational costs, and increase overall productivity. By using artificial intelligence personalization in human resource management, organizations can create a more committed and satisfied workforce, leading to improved productivity, reduced turnover, and ultimately saving cost and time (Djatkiko, Sinaga, & Pawirosumarto, 2025).

2.2. Background

Research conducted in the field of artificial intelligence also narrates diverse and numerous challenges; challenges such as the possibility of errors and mistakes (Giudici, Centurelli, & Turchetta, 2023), shortage of professionals (Neri & Cozman, 2020), the need for high investment (Akour et al., 2024), lack of trust and credibility (Laux, Wachter, & Mittelstadt, 2024), the existence of bias (Grzybowski, Jin, & Wu, 2024), mismatch of businesses (Rudko,

2021), legal issues (Walters & Novak, 2021), social manipulation through algorithms (Oladoyinbo et al., 2024), and social monitoring with artificial intelligence (Habbal, 2024) are emphasized; on the other hand, challenges such as users' distrust regarding the preservation of users' privacy, non-integration of technical systems and repeated occurrence of tasks, ever-increasing technological changes, insufficient participation of users and officials in sharing information data, insufficient guidance and facilitative counseling, users' lack of enthusiasm in deciding to use electronic government systems, insufficient awareness and electronic literacy of users, and in a word, insufficient regulatory policies were factors that have overshadowed the quantity and quality of electronic government procurement provision (Ahmed, 2025; Aish & Noor, 2025; Al-Hawamleh, 2024; Ali, Akter, Islam, & Mridha, 2025; Amie-Ogan, 2025; Ghosh, Saini, & Barad, 2025; Behnoush Jovari, 2025).

3. Methodology

In the first stage of this study, 15 participants were selected using the snowball sampling method for a group interview session. These individuals were experts in the fields of computer science, artificial intelligence, human resource management, psychology, and ethics.

The interview session was conducted in a group format based on brainstorming. The session had a facilitator who managed the time and order of the session. The researcher, as the session manager, was also responsible for asking questions and summarizing the material.

The researcher first surveyed the session members regarding the codes he had extracted based on the study of recent research, then summarized the responses and again put them to the members' consultation.

With the permission of the interview facilitator, each person was allowed to provide explanations regarding the criticisms raised about their responses at the appropriate time, or even to revise their ideas.

Each conversation generated subsequent questions and ideas until the researcher eventually witnessed repetitive discussions and, in fact, reached theoretical saturation among the experts.

Thus, the researcher continued his interview until the members did not add a new indicator to their own or others' previous indicators. At the end, a warm-up session was held so that the researcher could provide a brief report of his findings to the members.

In the second part of the study, by summarizing the findings, general questions were redesigned in written form in the form of a questionnaire and again provided to them so that this time each person could individually provide their opinions in writing. This was done so that possible errors in the group interview (such as the halo effect, recency effect, others' judgment error, anchoring error, etc.) would not have a negative impact on the validity and reliability of the researcher's findings. The research process proceeded based on a zigzag movement between data collection and analysis until the theoretical saturation stage.

Subsequently, the agreement coefficient of the experts' responses was calculated based on the criteria of overlap and homogeneity of the responses. Considering that the mentioned coefficients were obtained above 0.7, this was regarded as a confirmation of the reliability and validity of the findings. Figure 1 presents the stages of the research process.

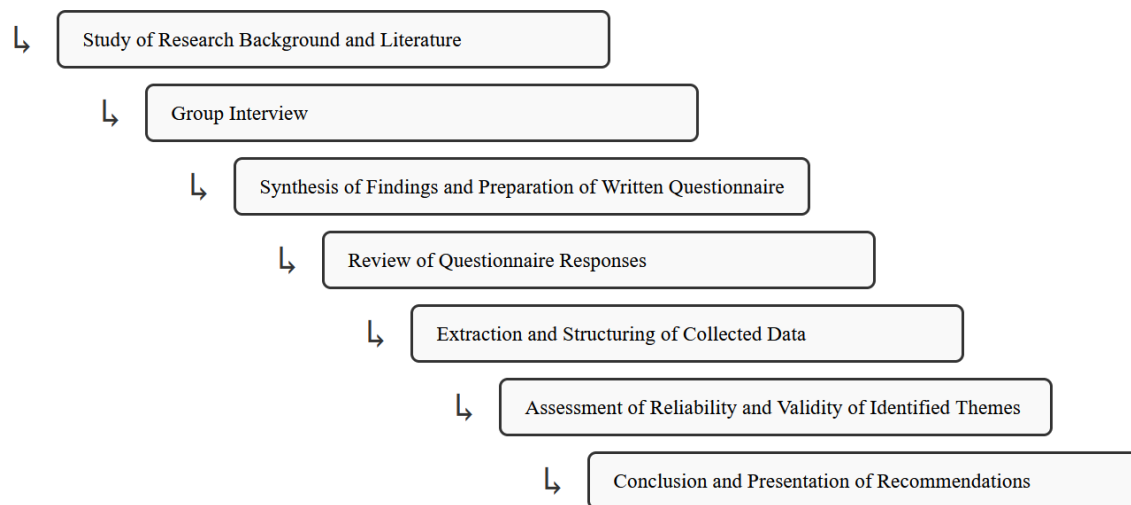


Figure 1. Process Structure of the Research Implementation

Source: Findings of the present research.

Finally, Cohen's kappa agreement coefficient was calculated for the collected codes, according to which, as shown in Table 1, the researchers' agreement rate was 0.75 and the standard error was 0.22. The kappa coefficient adjusted for bias and adjusted for prevalence was 0.7. The bias index was 0.0 and the prevalence index was 0.3.

	Positive	Negative	
Positive	12	1	13
Negative	1	5	6
	13	6	19

Calculate

Delete

Cohen's kappa index: 0.7564 SE: 0.2294

PABAK: 0.7895 BI: 0 PI: 0.3684

Figure 2. Example of Examining the Experts' Agreement Coefficient

Source: Findings of the present research.

4. Findings

Table 1 presents an example of how the research codes were extracted.

Table 1. Example of Extracted Codes

Example of Statement Extracted from Interview Text	Extracted Theme
Managers can, alongside the experience and familiarity with the work environment and employees' morale that exists through management, receive data and provide useful information to the manager for better planning of employees.	Benefits of Implementing Strategic Human Resource Planning in the Era of Artificial Intelligence
If the necessary culture-building and mechanism for planning do not exist, they will trust it too soon, and managers' behavior will create a sense of competition between employees and artificial intelligence, leading to destructive effects.	
Planning in the field of human resource management is noteworthy because this technology can be like a raging river; it can both irrigate the organization's gardens and, if not controlled, destroy the organization's foundations.	
In the field of planning, artificial intelligence, by analyzing data and providing specific and sometimes new solutions, can help managers make decisions like a powerful tool. This technology can help managers plan human resources with greater precision and speed; however, if managers become overly dependent on this technology, certainly the sense of creativity and the human dimension (ethics, leadership, kindness, etc.) that should be considered in the decision-making of a human resource manager will diminish.	
In the field of employees, it can also be useful and can serve as an assistant to employees, helping them in small and large planning matters and preventing employee errors.	
Artificial intelligence can eliminate repetitive planning and also create opportunities for individuals to pay more attention to planning for their personal development. However, the shadow of fear of robots replacing humans will always accompany employees, and this increases employee stress. But in reality, this technology should be viewed as a tool in the hands of employees' planning, as Sohrab said: "Eyes must be washed, one must see differently." Employees must also accept this transformation with a new perspective.	
...because in the field of employees, they will confront it, and instead of advancing the organization's plans, it will lead to sabotage by employees.	
In the field of organizational planning, given the data we give to this artificial intelligence from individuals, it can provide us with good information. This data includes introversion and extroversion of the individual, work interests of the individual, organizational goals, etc., and can draw the best structure for us and help the manager make the best decision.	
Artificial intelligence drives organizations toward greater agility and flexibility in the planning process. This technology, by analyzing organizational data based on the organization's mission, can eliminate additional plans and introduce an optimal structure; but without culture-building and training, these changes can lead to resistance to change in the organization's plans.	
...The planning structure must be designed in such a way that artificial intelligence and robots serve employees to increase work accuracy and reduce mistakes...	
...In the field of planning human relations, artificial intelligence can easily see details that perhaps we as humans cannot easily observe. These details can determine the type of attitude and thinking of individuals. With the participation of stakeholders, this issue can be effective in communication and... in human relations.	Necessity of Key Stakeholder Participation in the Planning Process
Participation in the field of planning, artificial intelligence can help improve communication in the organization and reduce misunderstandings by analyzing behavioral patterns; but if balance is not established, human interactions may become cold and the sense of empathy, which is the essence of realizing plans, may diminish.	
Involving stakeholders in the field of planning human relations based on artificial intelligence should not damage human relations and emotions between employees with each other and employees with managers...	Necessity of Attention to Employee Skills Development and Leadership
In the field of organizational behavior, given that good information about employees has reached us through this artificial intelligence and the organization's roadmap is clear, the efficiency of the organization and employees can be increased by developing their skills...	

Example of Statement Extracted from Interview Text	Extracted Theme
...All these cases in the field of attention to organizational skills will affect the behavior of employees and managers... In the field of planning, artificial intelligence, by providing analyses of employee behavior (transparent and purposeless behaviors), can analyze the requirements for employee development (but otherwise it seems unlikely) and this helps transparency and efficiency in the organization. Therefore, organizations must, with a human-centered approach, use artificial intelligence not as a replacement, but as an intelligent companion in the service of organizational goals. Continuous employee training, developing ethical frameworks for using this technology, and strengthening a culture of trust and cooperation are essential. Otherwise, just as large companies like Nokia, which resisted the wave of technology, are caught off guard and eliminated from the scene, organizations may face employee resistance, reduced motivation, and even failure in competition. Planning based on artificial intelligence is increasingly used in the field of law, such as predictive justice and prediction of judicial decisions. Implementing an artificial intelligence system in a company requires a series of legal requirements; but the legal system of governments has not kept pace and updated with this technology; that is, for example, if artificial intelligence damages property or an individual, we have no law for compensation. ...Until now, the impact of artificial intelligence on organizational planning has mainly been studied from the perspective of technology or broader decision-making; this is while in the articles of association and organizational chart of companies, something called artificial intelligence and artificial intelligence expert is not defined, and this is one of the main challenges for business owners. Because individuals must have a deep planning of artificial intelligence and its capabilities and limitations to adapt and identify the application of artificial intelligence in their work domain. No technology is one hundred percent complete and correct, and the possibility of error and mistake exists in it. In planning based on artificial intelligence, the possibility of error also exists, and the difficulty of the matter becomes apparent when an error occurs in the artificial intelligence system; accurately identifying its source will be very difficult. Also, the error of this field has the possibility of serious harm to us. Like self-driving cars that if a problem arises for them, they jeopardize the lives of hundreds of pedestrians without a plan! It is necessary to comprehensively, in planning matters, have a glance at our robot employee, colleague, or supervisor, because it seems that artificial intelligence is growing rapidly and we hear new news related to this topic every day. Otherwise, we might be caught off guard like Nokia and fall behind the technology of the day. Perhaps the best solution is to have the necessary integration conditions for using artificial intelligence and try to use it well as a suitable and accurate assistant that makes work easier for us and benefit from it. Artificial intelligence can show us the ways to achieve organizational planning more clearly and easily and help the manager in his decisions to reduce error and risk to the lowest level. It also creates a suitable work environment for employees. Artificial intelligence may be better than us in some areas, and that is because it analyzes data well and stores everything. In general, artificial intelligence has no chance against us because we are its creator. Perhaps the best solution is to use artificial intelligence as an auxiliary tool for humans, in the direction of human excellence; we must place love for humans, ethics, and their dignity at the heart of these developments. Organizations must, by localizing artificial intelligence based on Iranian-Islamic culture, public and specialized training, draw a smooth path for the synergy of technology and humanity. In this case, artificial intelligence can increase organizational efficiency and create a more humane and creative organization. Therefore, before integrating artificial intelligence into organizations, organizational culture and structure must first be prepared so that employees do not perceive it as a competitor. Raising awareness that AI serves as an assistant—not a replacement—can prevent resistance, psychological harm, and sabotage.	Challenges of Implementing Strategic Human Resource Planning in the Era of Artificial Intelligence Necessity of Technology Integration in Human Resource Planning

Source: Findings of the present research.

4.1. Benefits of Implementing Strategic Human Resource Planning in the Digital Age

The extensive developments of the digital age, especially in the field of intelligent technologies, have caused human resource management to be upgraded from a mere executive role to an analytical and strategic system (Arab Mazari, 2020). In such conditions, strategic human resource planning plays a key role in coordinating between the organization's macro goals and talent management (Habibi & Ahmadi, 2021).

The most important achievements of this change include the following:

4.1.1. Automation of Tasks and Enhancement of Organizational Productivity

The application of digital technologies in human resource processes leads to the elimination of repetitive activities and increased accuracy in executive matters. In addition to reducing operational costs, this shortens decision-making time and enables managers to focus on more key activities (Jafari et al., 2022). Recent research shows that organizations using digital human resource management systems have reported an average of 25 percent improvement in human resource productivity (Samadi, 2023).

4.1.2. Development of New Competencies and Skills of Employees

Strategic human resource planning, by identifying skill gaps and using digital training platforms, provides the possibility of continuous improvement of human resources (Nasiri & Taherian, 2022). This process causes employees to adapt to technological changes and be at the forefront of organizational learning. According to the findings of Rostami (2021), continuous digital learning is recognized as one of the main factors of organizational flexibility in technological environments.

4.1.3. Data-Driven and Predictive Decision-Making

The analysis of human resource data allows organizations to systematically monitor employee behavior and performance and make their strategic decisions based on evidence (Salehi & Kalantari, 2021). The application of data analysis systems in human resource management improves accuracy in recruitment, evaluation, and retention of employees and reduces taste-based decision-making (Rezaei, 2023).

4.1.4. Increasing Human Capital Resilience

In the turbulent digital space, human resource resilience is considered a competitive advantage. Strategic human resource planning, through future-oriented skill research and designing career growth paths, strengthens the foundation of organizational sustainability (Zare & Fallah, 2022). The results of Nouri's (2023) research showed that organizations that adjust their skill development strategies based on technology have 35 percent higher resistance to environmental changes.

4.1.5. Synergy between Humans and Technology

The main pillar in human resource planning in the digital age is creating harmonious interaction between human capabilities and technological capacities. In this view, technology plays a supporting role, and human resources are considered the center of creativity, judgment,

and decision-making (Mohammadi & Kazemi, 2021). This synergy leads to the formation of intelligent, learning, and self-sustaining organizations (Abbasi, 2020), because the automation of repetitive tasks, simplification of processes, and reduction of manual errors lead to increased performance and productivity. Facilitating the upgrading of new skills and knowledge among employees enables them to adapt to changing job requirements and technological advances (Amalia, 2024). Providing a better experience for employees by offering employee self-service portals, mobile applications, and other artificial intelligence tools that give employees easy access to records and services. Using data analysis and other artificial intelligence tools for informed decision-making about recruitment, overall performance management, and other human resource capabilities (Zehir & Vural, 2025). Finally, the transformation of artificial intelligence has brought numerous benefits to human resources, including better performance, capability development, sustainable development, advanced employee experience, and knowledge-based decision-making. Organizations that implement the transformation of artificial intelligence in their human resource management practices will likely gain a competitive advantage in the era of artificial intelligence (Gadzali, Gazalin, Sutrisno, Prasetya, & Ausat, 2023).

4.2. Challenges of Implementing Strategic Human Resource Planning in the Digital Age

Although strategic human resource planning in the era of artificial intelligence has high potential, this research emphasizes several fundamental challenges that are often faced in implementing this strategy (YuLing, SuHua, HuiLin, & Loang, 2023).

4.2.1. Resistance to Change

The most important challenge is employee resistance to change. By adopting new technologies and changing work processes, employees may have concerns about job change, loss of job position, or change in group dynamics. Management must implement effective communication strategies to address concerns, provide necessary training, and involve employees in the change process (Akbari, Fayyazi, & Jamshidi, 2016; Behnoush Jovari, 2024).

4.2.2. Technological Uncertainty

Rapid technological advances can create uncertainty. Organizations must adapt to continuous technological advances, and this can cause problems in selecting and implementing the most appropriate solutions. Investing time and resources to monitor technology trends and also partnering with leading technology companies can help resolve this uncertainty (Priya & Jayalakshmi, 2025).

4.2.3. Difficulty in Predicting Skill Needs

With rapid changes in market and technology needs, predicting future required skills is a challenge. Organizations must adopt a flexible approach and prioritize the development of general skills that can be adapted to contextual changes. Analyzing employee data and human resource roles can help identify evolving trends and skill needs (Saiyed, 2025).

4.3. Integration of Technology in Human Resource Planning

Digital transformation provides an important infrastructure for the integration of technology in human resource planning. In this era, artificial intelligence, big data analysis, and technology platforms have become valuable tools for improving the efficiency and effectiveness of human resource planning. For example, the use of artificial intelligence enables the automation of employee selection processes, identification of potential talents, and prediction of future skill needs. Big data analysis helps human resources make reality-based decisions, extract insights from employee data to understand behavioral trends, and plan human resource needs based on empirical data (Orhan & Kurnaz, 2025).

The use of technology platforms, such as integrated human resource management systems and performance analysis software, also helps increase the efficiency of the human resource planning process. The use of these platforms provides easy access to employee information, real-time monitoring of performance, and planning for skill development needs (Amalia, 2024; Leisthari, Rizkiyanti, & Aprini, n.d.).

The research results show that organizations that proactively apply technology in human resource planning tend to have systems that are more responsive and adaptable to change and create a more efficient and innovative work environment. Therefore, technology integration not only accelerates the human resource planning process but also produces strategies that are more aligned and appropriate to the dynamics of artificial intelligence evolution (Tasleem, 2025).

4.4. Participation of Key Stakeholders in the Planning Process

The importance of key stakeholders, especially senior management and business units, in the human resource planning process in the era of artificial intelligence transformation is increasingly receiving attention. The active role of key stakeholders is not only an organizational formality but is an aspect that has a significant impact on achieving human resource planning goals. Key stakeholders, by understanding the organization's vision and goals, can provide valuable insights regarding skill needs related to technological changes (Wagner & Pathak, 2025).

Good cooperation between human resources and business units is key to supporting strategic human resource planning. In the framework of digital transformation, key stakeholders can participate by providing information about the direction of business development, future workforce needs, and corporate strategies to be adopted. Senior management, as the main key stakeholder, can ensure that human resource policies are integrated with the overall organizational strategy (Azhar, 2025).

With the proactive participation of key stakeholders, organizations can identify the required skills related to technological changes. Key stakeholders may have a more comprehensive view of industry changes and can help the human resources department design skill development programs accordingly. Therefore, strong participation of key stakeholders not only supports human resource planning that is responsive to external dynamics but also creates synergy between business needs and human resource management. As a result, organizations can easily

overcome challenges and benefit from the opportunities that arise in the era of artificial intelligence transformation (Cui, 2025).

4.5. Employee Skills Development and Leadership

Emphasis on employee skills development and leadership is a fundamental element in effective human resource planning in the era of artificial intelligence transformation. Findings show that organizations that strive to engage employees in developing artificial intelligence skills and leadership will likely gain positive benefits in the face of technological changes (Al-Zaqeba, Alshehadeh, Jebril, & Al-khawaja, 2025).

Employee skills development, especially from a communication perspective, is essential in an era where technology is still developing. This initiative includes providing training and learning tailored to industry and company needs. In addition, comprehensive approaches, such as mentoring programs and access to digital learning resources, can sustainably enhance employee skills. Organizations that prioritize the development of these skills can create an environment where employees feel supported in adapting to technological changes (Wibowo, Pangesti, Saputro, & Cahyo, 2025).

Furthermore, the role of employee leadership is very important for optimizing the innovation potential of the workforce. Organizations that facilitate leadership at different levels and promote a culture of cooperation are more inclined to innovate. This includes empowering employees to take initiative, share ideas, and participate in the organizational innovation process. In the framework of digital transformation, employee leadership is the main driver of organizational adaptability and the ability to use the innovative capability of each individual (Waseel et al., 2025).

For this reason, emphasizing the development of employee skills and leadership not only increases the organization's flexibility against technological changes but also creates an environment where employees feel participation, inspiration, and ability to maximize contribution to the organization's goals and innovation.

5. Discussion and Conclusion

Strategic planning for managing the transformations arising from the presence and emergence of a new collaboration called artificial intelligence in the human resource management of organizations was one of the objectives of the present research.

The findings of the present research, while confirming the achievements of research related to the subject (such as the research of Behnoush Jovari, 2025; Kelm & Johann, 2025; Lee et al., 2025; Mori et al., 2023; Ahmed, 2025; Aish & Noor, 2025; Al-Hawamleh, 2024; Ali, Akter, Islam, & Mridha, 2025; Amie-Ogan, 2025; Ghosh, Saini, & Barad, 2025; Jovari, 2025), added new achievements to the domain of science, including that the transformations arising from the presence of advanced artificial intelligence and robotics in human resource management require careful and deep examination, as well as comprehensive planning for the expansion of appropriate infrastructures, including in areas such as culture, social relations consistent with behavior, etc.; because these technologies will have extensive effects on all aspects of life,

which in case of improper management will not only not be a solution for the human generation but will also cause irreparable problems. According to the findings of the present research, benefiting from artificial intelligence in organizational planning processes, especially in the human resource dimension, will have advantages and challenges; deep understanding of these challenges is the first essential step. Organizations must involve interdisciplinary groups in the human resource planning process to understand the dynamics involved. In addition, strategies to mitigate challenges must be implemented proactively. This includes effective communication approaches, training programs accessible to all employees, and flexible strategies to deal with technological uncertainty (Samuel, Etim, Nweke-Maraizu, & Okibe, 2025). Technology integration in human resource planning, participation of key stakeholders in the planning process, and development of employee skills and leadership can be a solution to manage these challenges.

By facing these challenges, organizations can achieve success in strategic human resource planning in the era of artificial intelligence by adopting a comprehensive and adaptable approach. Effective human resource planning must include strategies to overcome resistance to change, deal with technological uncertainty, and respond quickly to changing skill needs in the era of dynamic artificial intelligence (Cui, 2025).

This research revealed important findings, which are explained below:

- Technology integration, especially through artificial intelligence, big data analysis, and technology platforms, has been proven to be a solid foundation for responsive and adaptable human resource planning in the era of artificial intelligence transformation. The success of this planning also depends heavily on the participation of key stakeholders, especially senior management and business units, who participate in identifying skills related to technological changes.
- The importance of employee skills development and leadership was also revealed as a determining factor. Organizations that prioritize the development of artificial intelligence skills and employee leadership, while optimizing the innovation potential of their workforce, can more easily face technological changes.
- However, implementation challenges are also among the prominent points. Resistance to change, technological uncertainty, and difficulty in predicting skill needs are obstacles that must be overcome.
- To provide solutions based on the findings of this research, it is necessary for organizations to pay attention to adaptive policies from now on. These policies include creating appropriate cultural and behavioral infrastructures, developing ethical frameworks for using artificial intelligence in human decision-making, retraining and upgrading employee skills, strengthening emotional and emotional intelligence in managers, and maintaining balance between technology and human relations. Otherwise, organizations will face challenges such as employee resistance to accepting artificial intelligence, reduced productivity, and loss of human capital. Also, reducing the application of tastes and personal interpretations in implementing

instructions can lead to a more lawful and uniform organizational structure. As a result, with the reduction of human resources, the diversity of organizational behaviors will also be limited.

This research not only provides a deep insight into human resource planning in the era of artificial intelligence but also points to the challenges, opportunities, and future research paths that can help organizations understand and manage the dynamic changes of the business world.

In strategic planning, it is appropriate that artificial intelligence be considered as a complementary (such as facilitator or helper) to human resources and not a replacement for it. The combination of human creativity, critical thinking, emotional understanding, and empathy with machine accuracy and speed can ensure the success of organizations in the era of artificial intelligence. It is necessary that organizational goals and structure be precisely defined and the power of technology and the replacement of traditional and modern organizations be prioritized for development. Otherwise, artificial intelligence will transform the traditional system and inefficient organizations will be marginalized.

Therefore, considering predicted challenges such as ethical concerns and privacy protection, it is necessary to localize artificial intelligence based on indigenous and Iranian-Islamic culture, familiarize the general public with these new technologies through information and training through national and mass media, and introduce its advantages and disadvantages. Along with experts and specialists and university professors in research environments, the upcoming challenges should be examined and solutions found for them.

The following practical suggestions are presented:

1. To solve the ethical issues of artificial intelligence, cooperation between countries is necessary to determine international standards and regulations.
2. Artificial intelligence systems must prioritize and protect consumer privacy and rights and provide explicit assurance to human resources about how their personal data is used and protected.
3. Artificial intelligence developers must express their commitment to ethical behavior and accountability in their technologies.
4. Fairness refers to the fair treatment of members of an organization or groups of individuals by an artificial intelligence system. When artificial intelligence is properly tuned, it can help humans make fairer choices and counter human biases.
5. Systems equipped with artificial intelligence must be actively protected against adversarial attacks, minimizing security risks, and building confidence in system results.
6. The artificial intelligence system must be transparent. This type of transparency is important for building trust with artificial intelligence systems to ensure that individuals understand how and why a model reaches a decision point. If we can better understand the reason, we will be better equipped to prevent artificial intelligence risks, such as bias and discrimination.
7. To strengthen trust, human resources must be able to see how the service works, evaluate its performance, and recognize its strengths and limitations.

In conclusion, it should be noted that among the limitations of the present research is the novelty and somewhat abstract nature of the subject of artificial intelligence; because in the turbulent world and its momentary developments, we still witness simplifications and mental ambiguities in understanding and applying the mentioned technology in organizations. Another limitation of this research—which is one of the specific characteristics of humanities research—is the influence of intervening variables on the research results. Also, although the researcher has tried to extract valid and reliable codes by examining the consensus of experts' opinions, the results may not be unrelated to the level of perception, interpretation, and analysis of the respondents regarding the abstract subject of artificial intelligence; because in collecting the data of this research, the lived experiences of experts in different organizations have been used, and each organization, according to its defined mission and vision, has specific management and structural challenges and standards. Therefore, the generality of the findings of the present research is undeniable. Removing the mentioned limitations is suggested as a research roadmap to researchers in this field.

Declarations

Author Contributions (CRediT taxonomy)

The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation and revision. All aspects of this work were undertaken by the author.

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Ethical Statement

Informed consent was obtained from all participants. The study was conducted in accordance with established ethical guidelines for qualitative research.

Authors' AI Use Statement

The author declares that no artificial intelligence (AI) tools were used in the preparation of this manuscript for writing, analysis, or data generation. All content is the result of the author's own human effort and judgment.

Conflict of interest

The author declares no competing financial interests or personal relationships that could have influenced the work reported in this paper.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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