
LITERATURE ANALYSIS OF HUMAN RESOURCE TALENT MANAGEMENT IN THE DIGITAL AGE

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Abstract: This study aims to identify and analyze the transformation of the concept of Human Resource (HR) Talent Management in the digital era using qualitative research methods with descriptive content analysis, where data was collected through a comprehensive literature study from 2015–2025 in relevant journals, proceedings, and books. This study also describes the main challenges and formulates the best digitized strategies. This study shows that talent management has shifted from a reactive function to a data-driven and personalized strategy supported by data analytics and artificial intelligence. The digital skills gap, privacy issues, and data ethics are major concerns. To improve competitiveness, companies need the best strategies, including AI-based recruitment and the development of learning dexterity and work flexibility to strengthen organizational competitiveness.

Keywords: Talent Management, Human Resources, Digitalization, Artificial Intelligence, Learning Dexterity, Digital Competence

1. INTRODUCTION

Rapid technological changes in this digital age affect various aspects of organizations, one of which is human resource management. Companies need effective talent management in order to compete and adapt to the ever-changing dynamics of the market. Helmi et al. (2023) state that "in the context of human resources (HR), talent management must be adapted so that organizations remain competitive and responsive to market dynamics." The digital era drives the need for human resources with digital capabilities and new skills that can support comprehensive organizational transformation. Therefore, this study examines how the concept of talent management is transforming, the challenges faced, and efficient and relevant implementation strategies in the digital era.

This digital transformation is driven by the adoption of disruptive technologies, primarily Artificial Intelligence (AI) and Big Data Analytics. In the context of Talent Management, AI is crucial in automating low-value HR functions and transforming them into more strategic processes that include rapid and objective resume screening and personalized employee learning paths. The use of real-time data and predictive algorithms enables organizations to accurately identify hidden talent, measure performance more objectively, and formulate personalized retention strategies that have been empirically proven to increase operational efficiency and employee productivity (Asari et al., 2023; Lee et al., 2022).

The transition to digital-based talent management is a challenging process. One of the main obstacles faced by organizations is the widespread digital skills gap and the demand for data literacy, critical thinking, and problem-solving far exceed the capabilities of the current workforce (Saputri et al., 2023). With the development of systems that are highly dependent on data, issues related to data ethics, employee privacy protection,

and the potential for algorithmic bias in human resource decision-making have become very sensitive and require serious attention (Gaspersz, 2023). The use of artificial intelligence in talent management, if not accompanied by a strong and transparent policy framework, has the potential to exacerbate injustice rather than reduce it.

According to current human resource management literature, it is important for future talent to have strong learning skills (Saputra, 2020). This ability is a person's speed and desire to learn from previous experiences and apply that knowledge in new or uncertain situations. This study emphasizes the importance of designing development strategies that encourage learning agility, so that human resource talent can remain relevant and adaptable in line with ever-changing technological developments.

2. RESEARCH METHODOLOGY

This research uses qualitative research methods with descriptive content analysis and in-depth literature analysis to obtain information related to the transformation of concepts and key challenges and strategies for digital talent management. Data was collected through comprehensive research on various books, journals, and conferences relevant to talent management and digital human resources from 2015 to 2025. Purposive sampling was used to select valid sources that made important contributions to the topic and, as a whole, showed how the research problem could be adequately addressed.

3. RESULTS AND DISCUSSION

3.1 Concept Transformation of Talent Management

The transformation in talent management has undergone changes from the previous era, which shows how the previous approach was administrative and reactive, but has now developed into a more advanced strategy by utilizing digital technology, particularly artificial intelligence (AI) and big data analytics, to support more effective decision-making and facilitate organizations in carrying out the process of identifying and selecting talent development with a much higher level of accuracy compared to previous traditional methods.

AI can become a strategic partner for HR and not a replacement for human labor as long as there are appropriate policies and adequate training for HR talents. The shift towards digital-based talent management is expected to strengthen the role of human resources in adapting to new skills development training in order to remain relevant. AI does shift some traditional HR functions, such as in the implementation of recruitment, where AI can automate candidate screening, enabling the selection process to run faster and more objectively, as well as reducing subjective bias, which has been an obstacle. Organizations can utilize predictive algorithms to anticipate talent development needs earlier and more proactively, while adjusting training programs based on the concept of Learning Dexterity. Learning Dexterity is a key competency that helps employees quickly adapt to changes in technology and dynamic work environments.

3.2 Talent Management Challenges in the Digital Age

The rapid transition to digitalization, especially in digital talent management, is fraught with complexity and significant challenges. One of the main problems in talent management in the digital age is the digital skills gap, or the difference between the skills needed today and the skills possessed by existing talent. Companies need to invest

adequate resources in training and continuous learning programs to prevent their human resources from being left behind in the digital revolution era. This skills gap is also often accompanied by resistance to changes in work culture towards greater adaptability and digitalization, which requires the implementation of structured management strategies and effective communication.

Paying attention to data privacy issues and ethics in the use of algorithms is very important, considering that employee data that is collected and analyzed is at risk of being misused or causing discrimination if it is not managed with the principles of transparency and fairness. The development of an internal regulatory framework governing data governance has become a non-negotiable agenda, and organizations need to balance the use of data for strategic advantage with the protection of individual rights. Saputri et al., 2023; Lee et al., 2022 state that "the digital skills gap is a critical issue that organizations must address, in addition to the challenges of building comprehensive organizational digital readiness, data privacy and ethics issues, and cultural resistance to digitalization.

3.3 Strategies and Best Practices for Talent Management in the Digital Age

Facing these challenges requires strategies and best practices that can be implemented, such as the use of artificial intelligence (AI) technology in the recruitment process, which can accelerate the screening and matching of candidates more effectively within an organization. This strategic approach covers three main aspects that will help organizations better manage digital talent and prepare for change. The first aspect is AI-based recruitment, which speeds up the selection process and ensures that the culture and competencies of potential talent match the company's needs. A significant innovation strategy in the digital talent selection process is the use of artificial intelligence (AI)-based recruitment, where candidates are screened based on their technical skills and experience, as well as cultural balance, which can be done quickly and accurately using AI. This system improves efficiency and reduces human bias in decision-making, making the recruitment process more fair and objective. The use of artificial intelligence (AI) in the recruitment process allows companies to be more responsive to the ever-changing dynamics of the labor market while ensuring that the profiles of selected candidates are in line with the company's vision and mission. AI makes it easier for companies to conduct in-depth data analysis and is very useful in formulating long-term talent management strategies by identifying patterns and trends in candidate behavior. AI not only speeds up the process of filling needed positions but also contributes to designing effective retention programs. Using technology wisely can provide a competitive advantage in attracting and retaining top talent and supporting the company's ongoing digital transformation.

The second aspect is the ability to continuously learn and adapt quickly, which is an irreplaceable priority. Developing continuous learning capabilities with a focus on learning dexterity and digital skills is a priority (Islamuddin et al., 2024; Saputra, 2020). This is all supported by interactive and engaging digital learning platforms and development paths that can be tailored to each individual. By emphasizing these aspects, companies strengthen their human resources foundation while implementing interactive learning tailored to employee needs. Addressing future business challenges requires digital talent with solid competencies and strong problem-solving abilities.

The third aspect emphasizes work flexibility, such as remote working and flexible working hours, which have been proven to increase employee satisfaction and retain top talent while maintaining long-term productivity. Imagine an employee who has young children at home. They can arrange their working hours according to their personal

rhythm and choose where to work, whether it be their favorite cafe or their living room. This kind of situation naturally makes them more enthusiastic, loyal, and satisfied with the company. It is no wonder that this flexibility is crucial for maintaining a balance between the demands of work and daily personal life.

From a business perspective, the benefits are also clear. Companies can maximize the potential of employees who work during their most productive hours, while ensuring that company operations run smoothly without having to rely entirely on physical presence at the office every day. Daily transportation costs and office facility maintenance expenses, such as electricity, air conditioning, and cleaning, can also be drastically reduced.

On a global scale, multinational companies rely on integrated digital talent management systems given the challenges of managing a workforce spread across various countries with diverse regulations and cultures. This not only strengthens the coordination and standardization of talent management processes, but also ensures organizational cultural alignment and compliance with data privacy rules in each market. Big data analytics makes it easier for companies to make targeted strategic decisions, and innovation in the field of human resources is also advancing rapidly, strengthening global competitiveness. Nurdiah et al., 2025, state that "the implementation of work flexibility, such as remote working and adjusted working hours, has proven to be effective in increasing workforce retention and productivity."

4. CONCLUSION

Human resource talent management has undergone rapid development in the digital age, marked by the assistance of technology, especially artificial intelligence (AI). This technology helps increase productivity, efficiency, and innovation without neglecting human values and employee skill development. AI is seen more as a tool that strengthens and supports human resource talent rather than a threat. Challenges such as the digital skills gap and issues of privacy and data ethics still need to be taken seriously. The right strategy includes the use of AI in recruitment and adaptive learning (learning dexterity) as well as the implementation of work flexibility so that organizations can remain competitive and continue to grow.

Organizations that successfully manage change and adapt to the business world by integrating digital innovation with employee skill enhancement will gain a stronger competitive advantage in the future. Overall, this study emphasizes that success in managing talent in the digital age depends not only on the use of cutting-edge technology, but also on adaptive human resource policies that encourage a culture of continuous learning. By utilizing digitalization in talent management, companies have a great opportunity to increase their competitiveness while adapting more nimbly to rapid technological developments.

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