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Human resource management in the digital era

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ABSTRACT

Digital transformation affects various sectors, including human resource (HR) management. The use of digital technology in HR can accelerate the recruitment, employee development and performance assessment processes, while improving organisational efficiency and productivity. This article explores the impacts and challenges of implementing digital technologies in HR management. The research method involves a literature study and analysis of various relevant sources. Results show that the integration of technology in HR management supports organisations to be more adaptive and responsive to dynamic business needs. However, this implementation requires a careful approach, especially regarding employee training, data privacy policies, and organisational readiness for technological change.

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1. INTRODUCTION

The development of digital technology has brought significant changes in various fields, including human resource management. The current period is known as the “digital age,” and digital transformation has become a global consensus among enterprises(Zhang & Chen, 2023). The digital era requires companies to adapt to new technologies to compete in an increasingly competitive market. Digitalisation in HR covers a wide range of processes, from recruitment to employee competency development and performance monitoring. In this context, the role of HR managers is becoming increasingly important, not only in managing day-to-day operations, but also in designing HR strategies that are aligned with digital transformation. In the digital era, the role of HR managers has indeed become very strategic and is no longer limited to managing day-to-day operations. They need to integrate digital transformation into HR strategies to ensure the company remains competitive and adaptive to change.

HR managers need to utilise technology for talent recruitment, selection and development. They can use digital tools, such as AI-based talent management systems and big data analysis, to identify, attract and retain high-quality employees. With this, they ensure that the company has a team that is able to face the new challenges of the digital era. Digital transformation brings about a change in work culture, where adaptability and agility are key. HR managers must steer companies to shift to a mindset that is flexible and open to technological change. This includes developing training programmes that focus on mastering digital competencies and instilling a culture of continuous learning. The need to adapt to the new conditions of the global business environment and the growth

of digital innovation leads to the fact that companies are forced to modify or completely change ways of working and then reshape their business model (Mazurchenko & Maršíková, 2019).

The digital era also opens up opportunities for the development of HR applications based on AI, big data, and machine learning. These technologies not only make it easier to analyse employee data, but also enable companies to more effectively identify and develop talent. In addition, changes in the work environment that are increasingly leading to digitalisation, such as work-from-home and flexible working, require HR roles to be more flexible and responsive to employee needs. With the help of AI, the recruitment process becomes smarter and more efficient. AI can be used to pre-screen candidates through automated analysis of CVs and online profiles, such as on LinkedIn. Meanwhile, big data allows companies to collect data from various sources to assess candidate suitability, predict performance, and lower turnover risk. Digital mega trends, including but not limited to, cyber, data, cloud, social and mobile(Durou et al., 2016).

Machine learning can identify patterns in employee data that can help managers assess performance. It can also provide predictions regarding potential improvements or declines in employee performance, so that companies can take proactive steps to support their development. Through analysing performance data, machine learning helps provide more objective judgements and reduce bias in the evaluation process. Big data allows companies to monitor and analyse employee engagement and satisfaction through a variety of data, from surveys, performance reviews, to interactions on work platforms.

This gives a clear picture of employee satisfaction and engagement, assisting managers in taking appropriate actions to improve employees' work experience. Overall, the utilisation of AI, big data, and machine learning in HR applications not only improves the efficiency of HR processes but also provides better capabilities in designing talent development strategies that match the needs of the company. There are many scenarios of industrial application of VR and AR solutions, from visualization of prototype technology components to the complex development of interactive workshops for personnel at hazardous industries(Lalić et al., 2020).The purpose of this article is to analyse how HR management can leverage digital technologies to support the company's strategic goals and overcome the challenges that arise.

2. METHOD

The type of research used in this study is descriptive research with a qualitative approach (Hantono et al., 2018).The data taken, identified in the following order: (1) data collection (2) data sorting (3) data analysis (4) conclusion making. As for data analysis, there is a predetermined sequence in accordance with the empirical steps taken (Grieshaber, 2020). This research is qualitative research with a case descriptive approach(Raco, 2018). The descriptive study approach is a research strategy in which researchers carefully investigate a program, event, activity, process or group of individuals (Rianto, 2016). In case study research, the data collected comes from various sources and the results of the research only explain the case under study. Researchers chose this type of qualitative research because they wanted to analyzed more deeply the phenomenon of digital HRM.

3. RESULTS AND DISCUSSION

3.1 Transformation in Employee Recruitment and Selection

Digital technology has changed the way recruitment is conducted, with companies increasingly relying on online platforms, social media and AI software to screen potential employees. The use of technologies such as Applicant Tracking Systems (ATS) and big data analysis allows the selection process to be more efficient and accurate. Companies can now utilise data on prospective employees available online to assess their fit with the company's values and culture. SHRM has been used as a framework to test the relationship between human resource strategy and firm’s performance(Fairuzzabadi, 2012).

In addition, AI technology is used to conduct automated interviews and assess candidates based on their facial expressions and voice intonation. While efficient, the use of AI in recruitment has also raised concerns regarding algorithmic bias that may discriminate against candidates based on certain backgrounds. Artificial Intelligence (AI) has become an essential tool in the recruitment process. With AI, companies can sift through thousands of applications in a short period of time,

assess work experience and identify key skills required. AI can be used in applications such as Applicant Tracking System (ATS), which automatically screens CVs and provides an initial assessment of candidates. These systems help companies reduce recruitment time and costs and improve accuracy in selecting suitable candidates. The boom this time is the AI/Fintech boom(Kato, 2020).

Video and chatbot technologies are now being used to conduct automated initial interviews. Chatbots can conduct question-and-answer sessions with candidates, assess communication skills and provide immediate responses. Video-based interviews can also utilise AI analysis to assess a candidate's facial expressions, tone of voice and body language, which can provide additional insights into a candidate's personality and abilities.With the advent of big data, the recruitment process can be driven by data analytics. Companies can use historical data to identify factors associated with high performance and good retention rates among employees. This data can be used to direct a more targeted candidate search, as well as provide predictions of a candidate's potential success in a particular position. Artificial Intelligence in Marketing is now one of the most prominent examples (Kumari, 2021).

3.2 Employee Digital Competency Development

The digital era demands new competencies from employees, including technological literacy, data analysis skills, and adaptability to change. Online-based training programmes, such as e-learning courses and virtual training, have become effective tools in developing these competencies. The use of Learning Management Systems (LMS) makes it easier for companies to manage and measure the effectiveness of training programmes. Humans are gradually being substituted by of artificial intelligence and robots in virtually all departments in organisations(Azah, 2021).

However, implementing digital training also requires attention to variations in employee learning styles. HR managers need to ensure that all employees have access to training that suits their needs and is supported with adequate tools, including devices and stable internet access. Companies can provide training programmes that use digital tools, such as AI-based simulations, Virtual Reality (VR), and Augmented Reality (AR). These technologies allow for more interactive and realistic learning, allowing employees to practice new skills in an environment that resembles real work situations. This is especially beneficial for technical training, managerial skills, or complex situations. The metaverse can provide face-to-face interaction that is missing in a dispersed work environment, which is critical to fostering employee connections (Aydın et al., 2023). In a digital work environment, mentoring programmes can also be conducted online through video calls, chats or dedicated mentoring platforms. Managers or senior employees can mentor employees who want to improve their digital competencies, provide insights into industry developments, or help overcome specific challenges in the use of technology.

3.3 Data-driven Performance Appraisal and Development

Traditional performance appraisals that were often done manually are now changing with data analytics technology. Companies use platforms that monitor employee performance in real-time and provide continuous feedback. Thus, companies can make more objective data-based decisions in employee development. The VR quality seems to be a major motivator in influencing employees to use VR applications (Najam et al., 2022)

However, the use of performance data also raises privacy issues, as employee data is monitored continuously. Organisations need to establish clear policies on the use of employee data, ensuring that the privacy and security of employee information is maintained. Data-driven performance appraisal and development is a modern approach to HR management that utilises data and analytics to objectively and continuously evaluate, monitor and improve employee performance. By using technology and data, companies can more effectively determine employee development strategies and make decisions that support company growth. Virtual reality (VR) represents a three-dimensional computer simulation of real world environments that can be explored and interacted through a person(Lalić et al., 2020).

With digital data and technology, monitoring employee performance can be done in real-time using digital platforms such as performance management systems or cloud-based software. These systems allow managers to track employee achievements in real time, view project progress, and identify issues or obstacles that may require immediate action. This real-time monitoring ensures more accurate performance evaluation and helps in providing timely feedback. Currently the development of Artificial Intelligence or Artificial Intelligence (AI) is increasingly widespread and is

very much needed in human life such as in the fields of education, service, industry, and so on(Kalsum, 2022).

Companies can set Key Performance Indicators (KPIs) or Objective and Key Results (OKRs) that are measurable and data-driven. These data-based KPIs and OKRs make it easier for companies to assess employee performance based on concrete results, so that performance assessments become more objective and measurable. The KPI and OKR data collected can be used to identify areas that require improvement, set priorities, and design appropriate development strategies. VR creates some resemblance of real life by special devices expressed in digital format (Vasilenko, 2019)

3.4 Privacy and Ethical Challenges in Digital HR Management

Technology integration in HR presents ethical challenges, especially in relation to data privacy. The use of AI and big data technology allows companies to collect detailed personal data of employees. This requires internal regulations that protect employee rights. Companies also need to implement transparent measures in data collection and utilisation. Through the implications of HR data analysis as decision-making in forecasting human resource trends using AI, talent management, and employee retention(Pijasari, 2023).

Digital technology enables the collection of large amounts of data related to employee activities, performance and behaviour. While this data can help with decision-making, excessive collection risks invading privacy. Employees may feel uncomfortable or threatened if companies are constantly monitoring their activities, both online and offline. Therefore, companies should be judicious in determining what data to collect and ensure that it is done for legitimate and relevant reasons.

Employees' personal data, such as contact information, health, and work performance, is a vulnerable target for data theft. If HR management systems do not have strong security protocols in place, this data can be leaked or misused. This risk increases as more organisations use cloud-based technology or third-party software, which may have varying security standards. Companies should ensure that employee data is protected with strong encryption technology, and have strict security policies in place to prevent unauthorised access.Companies are expected to maintain a balance between the efficiency gained from the utilisation of technology and the privacy rights of employees. This uncertainty about ethical boundaries also raises questions about how technology will shape the future of HR management and the role of managers in maintaining a balance between technology and humanism in HR.

Striking a balance between the efficiency gained from technology and the privacy rights of employees is an important aspect of HR management in the digital age. As companies utilise technology to improve productivity, accuracy in decision-making, and efficiency of work processes, they must also consider the impact on employees' privacy rights and well-being. If companies focus too much on efficiency to the point of neglecting privacy, employees may feel pressured, uncomfortable, or even lose trust in management. This can lead to long-term productivity declines, employee retention issues, and increased legal risks related to privacy breaches. Conversely, with a privacy-respecting approach, employees tend to be more open to the technology used, more engaged, and feel safe in the workplace. The balance between the efficiency gained from technology and the privacy rights of employees is indeed a very important aspect of HR management in the digital era. In an effort to leverage technology to improve operational efficiency, companies often collect large amounts of employee data, which can include personal information, performance data, or even employee behaviour and health. However, the collection and processing of this data must be done with great care so as not to infringe on the privacy rights of employees and not cause distrust or tension between them.

4. CONCLUSION

HR management in the digital era opens up opportunities to improve efficiency and effectiveness through the use of technology. From recruitment to competency development, technology allows HR managers to work smarter and more data-driven. However, the application of technology in HR management also requires strict policies regarding privacy and ethical use of data. For this reason, companies must develop a balanced approach between technology adoption and attention to the human aspects of employees. Going forward, successful HR management will be determined by a

company's ability to navigate these challenges and create an adaptive, safe and inclusive work environment for all employees.

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