

# Human Resource Management in the Transformative Digital Era

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## Abstract

*Digitalization in human resource management helps companies to modernize HR functions and gives them a competitive edge. At the same time, it requires a change in work style and require changes in demand for HR competencies. Study this aims to introduce the phenomenon of digitalization in literature, explore its current benefits and key risks, and analyze the competencies and role of HR professionals. Innovative strategies that can be applied in human resource management (HRM) to enhance organizational performance in the digital era. With rapid changes in technology and the business environment, organizations need to develop innovative approaches in managing their human resources. This research method is a qualitative research method with a descriptive approach. This research operationally examines various sources of literature relevant to the context of the above research. 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, namely as follows: (1) Examination of data (2) suspected data findings, (3) Data confirmation (4) Diagnosis, (5) Action. The results obtained show that HR professionals tend to be a little reluctant to adopt technology. The results of this research confirm the importance of digitalization in recent years for human resources and increasing demand for digital skills. Every organization should develop its digital strategy to improve productivity. In the present scenario, DHRM is considered a more significant and growing research topic as well as an important topic for a business organization. With the use of DHR practice and through social media, the internet, AI, and other technology organization can maintain their performance and employees' quality standard for the smooth running of the organization. In exploring "Strategic Human Resource Planning in the Era of Digital Transformation" through the Systematic Literature Review method, this research reveals important findings. Technology integration, especially through artificial intelligence, big data analysis and technology platforms, is proven to be a deep foundation in responsive and adaptive HR planning in the era of digital transformation. The success of this planning also depends heavily on the involvement of key stakeholders, particularly upper management and business units, who contribute to the identification of skills relevant to technological change.*

**Keywords:** Human Resource Management, Transformative Digital.

## INTRODUCTION

Digital transformation can be said to be the integration of digital technology in every area of a business, and it brings out fundamental changes in how one operates and delivers value to the customers. It can also be considered a cultural change that requires an organization to continually challenge the current status, experiment, and prepare to accept inevitable failure. Stolterman and Fors described digital transformation as digitalization and a business model driven by the changes related to the application of digitalized technology in all possible aspects of human society (Sharma et al., 2022).

Digitalization is significantly affecting business processes and organizational boundaries. To deal with the pace at which digitalization is changing organizations, there is a need to understand and explore new skills and capabilities associated with digital transformation. Management consulting firms are driving this transaction process. To do so, they recruit consultants with skills and capabilities associated with digital transformation (Bhanu Prakash et al., 2019).

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As the “digitized” workforce increasingly encounters firms with changing HRM practices, the digital era necessitates digital HRM procedures. Organizations must develop strong employer brands to recruit, inspire, and retain people. One intriguing way of employer branding is to gamify employer branding initiatives using games for educational purposes (Najam et al., 2022).

Adopting new technologies and digitalizing organizational processes have forced the rapid evolution of HRM practices, requiring the development and adoption of new HR competencies, new forms of employment, and agile HR processes. In that respect and to enable and accommodate rapid technological change and development, organizations are expected to develop procedures and establish practices for a continuous reappraisal of employee competencies and to introduce new work organization forms (Barišić et al., 2021).

The transfer of general terminology to HRM can be discussed. First, a general concept can be transferred if the organizational phenomenon denoted by the concept has a comparable counterpart in HRM (Sakka & El Hadi El Maknouzi, 2022). In this case, an already existing HR phenomenon is denoted. Second, however, a general concept can also be transferred if the organizational phenomenon designated by the concept currently has no comparable counterpart in HRM but could be realized in the future. A potential future HR phenomenon is denoted (Strohmeier, 2020).

Furthermore, this study will discuss a simple overview of how the concept of human resource management is carried out with digitalization. Nowadays, the Human Resource Information System (HRIS) plays a strategic role in the decision-making process for effective and efficient Human Resource Management (Masum et al., 2018). Information technologies are rapidly transforming the field of human resource management in organizations (Zavyalova et al., 2022). The explanation will be based on various existing studies to give an elaborate and comprehensive picture of the new paradigm of human resource management based on the power of digital computing technology. Purpose In recent years, we have seen an increasing use of digital tools within organizations. Digitalization has also strongly impacted HRM functions (Maria, 2020).

The digital era has ushered in profound transformations across multiple domains, including human resource management (HRM). The beginning of digital technology, encompassing innovations in information technology, the internet, and automation, has fundamentally transformed how corporations oversee their workforce. Digital technology is crucial in HR management techniques (Singh Deora, 2018). This development happens in large companies with abundant resources and small and medium-sized enterprises. From cloud-based HR management systems to tools that facilitate virtual team communication and collaboration, digital technology has opened up new opportunities for managing human resources more efficiently and effectively. (Oke et al., 2021). It enables organizations of all sizes to better compete in the global marketplace, leveraging technology to increase productivity and employee satisfaction (X. Chen et al., 2021).

Furthermore, the advent of the digital era has compelled firms to reassess their HR strategies from an alternative standpoint. Currently, the emphasis lies not solely on personnel management but also on fostering talent growth and establishing an organizational culture that encourages creativity and adaptability. Consequently, HR management now encompasses more than administrative and operational tasks; it also plays a crucial role in driving growth and facilitating change inside firms. (Mei et al., 2023). However, these advancements bring along their own set of challenges. Concerns such as the disparity in digital skills, safeguarding data, and integrating systems are significant challenges in managing human resources in the digital era. Organizations must proactively solve these concerns to stay abreast of technological advancements and uphold their employees' security, privacy, and contentment. (Mukhuty et al., 2022). This demands a more strategic and holistic approach to HR management, of which technology is just one component (Cimini et al., 2021). Traditional HR management, which relies heavily on manual approaches and paper-based processes, is transforming into a more dynamic, analytical, and data-driven system (D. Zhang et al., 2021).

Integrating technologies such as Artificial Intelligence (AI), machine learning, and big data analytics has changed how companies recruit, train, motivate, and retain brand employees (Ermolina & Tiberius, 2021). This revolution signifies a significant change in the HR management paradigm. Historically, human resources responsibilities like payroll, attendance, and staffing management were frequently performed manually, resulting in the expenditure of time and resources. (Tajpour et al., 2022). AI and machine learning have expedited and

enhanced the process, offering more profound insights into employee performance and requirements (D. Zhang et al., 2021).

The global phenomenon of digitalization and robotization has a significant impact on the world of work and the market Work. Companies today are forced to deal with a constant flow of new technologies and information, new jobs, rapid workplace digitalization, and changing demand for skilled employees, pushing them to rethink how they manage their workforce. In this case, HR is essential in leading change and adding strategic value to companies in the digital era (Bokelberg et al., 2017). HR can assist employees by helping their career development and the company by attracting attention to the benefits of new digital technologies (Mitrofanova et al., 2018).

Basic digital skills are considered necessary for almost all jobs (Curtarelli et al., 2016). The rapid advancement of digital technology, such as artificial intelligence, cloud computing, Big Data, robotic process automation, social media, real-time communications, and increased use of virtual reality, brings new functionality to the HR department. As a result, digital transformation influences the way HR functions are fulfilled by using digital tools and applications to innovate processes, make decisions, and solve problems (Manuti & De Palma, 2018). Digitalization requires a redesign of the role of HR professionals and the development of new competencies that will help ensure employee well-being and organizational sustainability in the digital era (Sima et al., 2020).

The development of information technology has made some people say that the Industrial Revolution 4.0 eliminates the boundaries between physical, digital, and biological fields (Schwab, 2017). Artificial intelligence (AI), manifested by machines that exhibit aspects of The Influence of Artificial Intelligence, Big Data, and Automation On HR Performance in the Digital Era human intelligence (HI), is increasingly being used in services and is currently becoming the primary source of innovation (Rust & Huang, 2014).

Significant technological advances today, including artificial intelligence (AI) and robotics, have occurred in the last two decades. This technology is predicted to change several jobs worldwide (Makridakis, 2017). Artificial Intelligence (AI) is hardware or software that connects technology that exhibits intelligent (humanlike) behavior. Objective AI is creating a computing system that can imitate human intelligence so that AI-based devices can do the job almost without human intervention (Talaviya et al., 2020). Data has an important role in making various decisions strategic decisions. Therefore, parties who can process and utilize data available in large volumes, varied diversity, high complexity, and speed of adding high data can take large profits (Sirait, 2016).

Research in the field of human resources shows that anxiety levels in the workforce are high on automation, and these technology trends can considerably impact labor markets and productivity (Pew Research Center, 2017). However, some economists, on the other hand, claim that this technological breakthrough creates new jobs due to the decline in unskilled labor due to automation, increasing demand for skilled labor, and their wage standards (Acemoglu & Restrepo, 2020). Human resources in a company are considered long-term investments and essential factors in the fate and success of any business and company profitability. Many of the most famous roles in Industry 4.0 still need to be in the top 10 last year. As a result, the skills required to carry out this role still need to be available. Research findings show that advanced/digital technologies are blurring boundaries between jobs. The emergence of a digital economy centered on the Internet of Things (IoT) is a hallmark of the Fourth Industrial Revolution. Professor Klaus Martin Schwab, founder and head of the World Economic Forum, initially stated the arrival of Industrial Revolution 4.0. (Hassim, 2018)

In this context, academic literature and business practitioners are increasingly aware of the importance of innovative strategies in human resource management to improve organizational performance, Brown, A., & Green, M. (2018). It is essential to understand that a company's success in the digital era depends not on its ability to apply the latest technology but also on its ability to manage the human side of its employees. Therefore, this research aims to investigate further innovative strategies in human resource management and how their implementation improves organizational performance.

## LITERATURE REVIEW

Pradana et al. (2023) explore the skills and roles necessary for digital-based human resource management, while Pakpahan (2021) analyzes the influence of AI on human life. Kusuma (2021) discusses implementing competence-based HRM in the digital era, and Alwy (2022) examines digital HRM from the perspective of future HR managers. Devianto and Dwiasnati (2020) propose an AI framework to enhance Indonesian HR competence, and Maharani (2023) investigates the impact of technology on employee mental well-being and strategies to combat digital stress. Supriyadi and Asih (2020) looked at AI in public administration during the Industrial Revolution, and Sirait (2016) studied extensive data implementation in government institutions. Alayida et al. (2023) explore digitalization's effect on the logistics workforce, while Setiono (2019) discusses increasing HR competitiveness during the Industrial Revolution. Ritonga et al. (2023) examine digital transformation's impact on HR development in civil registration services, and Arifah et al. (2022) review AI's potential to replace jobs in the service industry. Adha et al. (2020) analyze industrial digitalization's impact on employment in Indonesia, Kusumasari and Rafizan (2017) study big data for communication and informatics policies, and Nugroho et al. (2019) address big data security in the digital era. Riyadi and Huseini (2019) discuss integrating big data into BPJS Health's HR performance management system, and Purwaamijaya and Prasetyo (2022) examine AI's effect on human capital management in Indonesia.

### Human Resource Management

Human Resource Management (HRM) involves managing people in an organization to achieve company goals effectively and efficiently, encompassing recruitment, training, career development, performance appraisal, employment relationship management, and compensation (Bombiak, 2020). The main objective of HR management is to maximize employee potential, support their professional development, and ensure a competent and motivated workforce (Q. Zhang et al., 2019). HR management also plays a critical role in building organizational culture, managing change, and ensuring compliance with labor regulations and ethical practices (Dobrowolski et al., 2022). Furthermore, HR management focuses on creating a positive work environment, managing employee relationships, handling conflicts, and ensuring workplace safety (Wang & Yang, 2021). HR managers are responsible for identifying and meeting training needs and developing programs that support employee well-being and job satisfaction (Feng et al., 2021).

In recent years, HR management has evolved with technological advancements, integrating aspects like employee data management, AI for recruitment and assessment, and digital platforms for training (Bonache & Festing, 2020). Studies have explored how digitalization has transformed HR management, from automating recruitment to developing technology-based training strategies (Boudlaie et al., 2020). This transformation is driven by digital needs, industrial innovation, competitor challenges, digital innovation governance, and the demands of the digital age (J. Zhang & Chen, 2023). Digitalization offers advantages such as in-depth analytics, greater recruitment efficiency, real-time employee monitoring, and automation of transactional tasks (DiRomualdo et al., 2018; Khahro et al., 2021; Bondarouk & Brewster, 2016; Zeoli & Billeter, 2019). HR analytics and machine learning tools enhance decision-making and prediction processes, influencing HR's value in organizations (Bersin, 2012; Baranes & Palas, 2019; Kaji et al., 2019). The role of HR managers has shifted towards being strategic positioners, change agents, and technology proponents, requiring competencies in business knowledge, HR expertise, change management, and technology (Fenech et al., 2019; Chytiri, 2019). HR managers must leverage digital skills to improve productivity and organizational performance, recognizing technological trends and driving innovation (Ulrich & Brockbank, 2016; Kelly & Rapp, 2016; Fabbri & Scapolan, 2018).

### Digital Transformation

Digital transformation refers to integrating digital technology into all aspects of a business that changes how it operates and delivers value to customers. It also involves cultural change that requires organizations to continually challenge the status quo, experiment, and adapt to rapid change. Several theories support this explanation, including: 1. The Disruptive Innovation Theory by Clayton Christensen: This theory explains how new technological products or services can disrupt existing markets. In digital transformation, technologies such as AI, cloud computing, and big data often act as disruptive innovations that drive organizations to adapt

and innovate (Zeng et al., 2018). 2. The Diffusion Theory of Innovations by Everett Rogers: This theory explains how, why, and at what speed innovation and new technologies spread through culture. This theory can be used in digital transformation to understand how digital technologies are adopted in organizations and society (Gunarathne & Sankalpani, 2021). 3. Digital Maturity Model This model is used to assess an organization's digital maturity level, measuring the extent to which they have integrated digital technologies into business operations. This model helps understand where organizations are in their digital transformation journey (Herceg et al., 2020). This theoretical foundation provides a framework for understanding various aspects of digital transformation, from technology adoption to organizational structure and culture changes. A comprehensive understanding of these theories is essential to planning and executing a successful digital transformation strategy.

### **Digital Transformation in Business**

This theory summarizes that digital transformation in business has a significant impact on organizational structure and HR management. Technology integration, flexibility, and a focus on skills development are key elements for organizational success in this digital era. This theory provides a basis for understanding and designing HR management strategies that are responsive to ongoing technological changes, Brown, A., & Green, M. (2018).

### **Innovative Strategy**

The theory of innovative strategies in HR management provides a conceptual basis for organizations to develop an adaptive and proactive approach in facing dynamic changes in the digital era. References from previous research, as presented in the article by Smith and Johnson (2019), provide empirical support for the effectiveness of innovative strategies in the context of HR management in the digital era.

### **Theory of Application of Latest Technology in HR**

The theory of the application of current technology in HR provides a comprehensive view of how organizations can respond to recent developments. Through the integration of artificial intelligence and big data analysis, organizations are expected to increase efficiency, productivity and responsiveness to HR needs in the digital era. References from research by Chen and Wang (2020) provide an empirical basis for understanding the opportunities and challenges of implementing the latest technology in HR practices.

### **Organizational Culture Change**

Organizational culture change theory provides a deep understanding of how digital transformation can trigger cultural change and how it affects HR management. References from Cameron and Quinn (2017) provide a conceptual foundation and practical tools for analyzing and managing cultural change in the context of digitally transformed organizations.

### **The Importance of Employee Skills Development**

This theory provides a strong conceptual basis for understanding why employee skills development is an important element in innovative HR management strategies in the digital era. References from Jackson and Ruderman (2018) contribute empirical evidence and practical perspectives to support the importance of focusing on employee skills development. Jackson, S., & Ruderman, M. (2018). Previous research about the analytical skills of HR Managers, wrote about the analytical skills HR Managers must have to improve the quality of decisions and encourage organizational change. HR analysis is described as a means for HR to create value and needs to be seen as an important part of interdepartmental business analysis (Adiyawati, 2019). In addition, it is hoped that the results of this research can provide practical guidance for organizational leaders and HR professionals to face challenges and opportunities emerged in today's digital era. With a deeper understanding of this innovative strategy, it is hoped that organizations can achieve competitive and sustainable advantages in an ever-evolving business environment. Research Problem Statement Practical implications of the findings of this research for organizational leaders and HR professionals in facing dynamic changes in the digital business environment?

## **METHOD**

This research is a theoretical study with a qualitative approach, with a literature study method (Patri & Heswari, 2022). This research model tries with all its might to elaborate various scientific sources that will strongly support the construction of the analysis of a particular study (Patton, 2002). This research method is a qualitative research method with a descriptive approach. This research operationally examines various sources of literature relevant to the context of the above research. The results of the reflection found that the need for ethnoscience mathematics literacy was met with representative local sources. The type of research used in this study is descriptive research with a qualitative approach (Cresswell, 2012). 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, namely as follows: (1) Examination of data (2) suspected data findings, (3) Data confirmation (4) Diagnosis, (5) Action. This research uses a type of library research or literature review, namely a series of research related to library data collection methods or subjects research extracted through various library sources, such as books, encyclopedias, journals scientific, newspapers, magazines and documents (Sukmadinata, 2009). The author decided to using library research research methods because the method is appropriate with research topics. This literature is also used to analyze and solve questions formulated research. The author uses descriptive analysis methods to analyze the research results. Descriptive research is a type of research that aims to describe something current symptoms, events, or happenings. The author tries to capture the events and events that occur becomes the center of attention and then described as it really is (Sudjana et al., 1989).

## **RESULTS AND DISCUSSION**

### **Digitalization, Digital Transformation, and the Digital Workforce**

In this part of the study, for the sake of the subsequent discussion, we believe that several concepts need to be distinguished: digitalization, digital transformation, digital innovation, and the digital workforce. Digitalization is different from digital transformation, which is considered as “an ability to convert an available product and service to a digital variant that provides a greater advantage than a tangible product.” Murphy (2018) states that “digitization is defined as the conversion of an analog signal or information in any form into a digital format that a computer system or electronic devices into a digital format that can be comprehended.” Digitization is not only just about using digital tools within an organization, but it is also a tool for implementing these innovative business models and long-term corporate strategies. Verhoef et al. (2021) argue that digitalization describes how digital technology can be made to change existing business processes. This change requires the intervention of digital technology to shape the new organizational technology structure, which would not have been possible without the timely intervention of digital technology. In the digital domain, information technology may facilitate business process relationship management and is better suited to the organization (Leviäkangas, 2016), becoming key elements of HRM operations that drive innovation. Digitalization assists in making processes within organizations more efficient and increases the sense of customer experience (Pagani & Pardo, 2017). Thus, digital technologies not only contribute to cost savings, but also improve the customer experience process for internal services.

Digital transformation has been characterized to be a key organizational shift, powered, established, or sustained by digital technologies which alter the approach to business operations (Bilgeri et al., 2017; Heilig et al., 2017). Over time, it will apply digital initiatives to achieve important reforms in the way business is managed, resulting in significant changes in an organization or an overall industry. Digital transformation changes the way the whole organization operates, especially the business processes and tasks (Amit & Zott, 2001). Furthermore, this transformation can help organizations to better interact with external customers through innovative technologies (Singh & Hess, 2020). Thus, digital technologies can support organizations in leveraging existing core competencies or developing potential core competencies to gain a competitive advantage. Due to the implementation of digital technologies, digital transformation is intrinsically linked to strategic changes in business models (Sebastian et al., 2020). In summary, digital transformation is a widespread phenomenon within organizations where organizations’ business models are fundamentally transformed by innovative digital technologies. Therefore, in the pursuit of digital transformation, organizations need to balance their existing

business models with new business models. As digital transformation progresses, the existing business model will encounter obsolescence (Teece, 2010). Organizations need to change their existing business from partial digital change and gradually transition to the new digital business.

Digitization, digital transformation, and digital innovation are closely related and interconnected in different ways. Firstly, these concepts are based on digital technologies. Next, the outcome of digital innovation can result in digitization through uptake in the spread phase of the digital innovation process (Fichman et al., 2014). Furthermore, we argue that digitization and digital innovation may lead to significant reforms in how business is undertaken (Osmondson et al., 2018). The term “digital workforce” represents a group of individuals that are influenced by new digital technologies affecting their attitudes, competencies, and actions. Professionals (e.g., HR practitioners) are required to make significant strategic and operational changes in the face of them.

### **Digital HRM, Transformation, and Strategy Definition**

The focus of this section is on digital HRM, so based on the previous definitions around digital, it is needed to clarify the definition of digital HRM. Digital HRM is described as “using computer systems, telecommunication networks, and interactive electronic media” to perform HRM functions (Vardarlier, 2020). Ketolainen (2018) supports the vision of digital transformation as a process. He refers to digital HRM transformation as “a process of change in which HRM transforms to digital in order to be data-driven and automated.” The use of digital technology allows HRM operations to change. Digital HRM strategy can be defined as the HRM strategy developed and implemented to create value for the organization by harnessing the digital potential (Bharadwaj et al., 2013). It may be interpreted as the convergence of HRM and technological sources and also implies the development and implementation of HRM strategies that are directly grounded on digital potential and generate corporate advantages to create value for the organization (Strohmeier, 2020).

### **HRM Digital Transformation Drivers**

Drivers are regarded as external or internal triggers for an organization to be involved in digital transformation. The factors that drive the uptake of digital technologies are essential prerequisites for a successful digital transformation of HRM. These factors in turn impact the ultimate result of HRM digital transformation (Mosca, 2020). In the digital age, HRM exists in an increasingly unstable external environment and has to better serve its internal customers (Schmidt et al., 2017). To better exploit the benefits of digital change, HRM digital transformation is necessary (Osmondson et al., 2018). Here, we need to analyze the HRM digital transformation drivers.

### **Meeting Internal Customer Expectations**

Customer-centric HRM refers to HRM that aims to meet customer expectations in a specific market segment. In particular, the customer refers to all employees in the organization (Schneider, 1994). To adapt to the impact of the digital age, individuals also need to set their expectations in various ways, such as convenient digital recruitment, training through artificial intelligence for individual needs, and better performance evaluation and feedback mechanisms based on digital platforms. To be satisfied with the needs of internal customers, HRM needs to undergo a digital transformation. The successful digital transformation can bring greater satisfaction to internal employees.

Digital HRM tends to focus on the digital needs within the internal business. This internal attention means that digital HRM transformations are considered effective when digital HRM practices raise internally determined standards of employee efficiency (Schneider, 1994). When using internal customers as a valid criterion for assessing the efficiency of digital HRM practices and processes, we need to bring employee feelings and senses into the context of the logic of client service quality.

In the same way that marketing or operations departments have come to accept that it is the critical key to business efficiency, digital HRM may fall into what has been called the “HRM trap” (Schneider, 1994). The trap is the idea that everything good (or bad) that happens to internal clients is an effect of HRM practices, procedures, and policies. As HRM digital transforms, employee-related functions such as recruiting, training, and evaluation are subject to change. Employees will have a deep sense of the changes caused by the HRM

digital transformation. The ability to fully meet the needs of internal customers and reduce their loss, especially to avoid falling into HRM traps, is a factor in ensuring the success of the transformation (Huang, 2020).

### **Digital Transformation in Many Industries**

Digital technology seems to have penetrated everywhere for a long time. Whether in the HRM field or business management in general, it seems that every aspect is being digitally innovated (Yu & JInajun, 2020). Digital technologies enable faster and easier execution of all HRM functions, from the recruitment procedure to training, from the job assessment and performance measurement to compensation, and from rewards to employment relations (Smirnova et al., 2019). Today, the field of HRM is in a state of rapid change, and it is not just about providing HR services as a support function. HRM needs to digitally transform and lead changing organizations on a global scale. As Boudreau and Strategy (2015) aptly point out, the HR industry is at a turning point, and in order to be able to add value, HR professionals need to reassess their digital capabilities and skills.

In the face of the current popularity of Industry 4.0, a prerequisite for a rapid transition to digital management is the need to explore the distinctive features of Industry 4.0 in the context of the evolutionary shaping of industrial societies (Smirnova et al., 2019). It is obvious that Industry 4.0 imposes deeper digital innovation requirements on HRM. Digital technologies are playing a crucial part in the forthcoming 4th industrial revolution in three major ways: the growing Internet use, the spread of automated learning, and the adoption of artificial intelligence (Fregnan et al., 2020). This revolutionary technological change is changing the world of work and thus affecting managerial practices at various levels.

The HRM role needs to be actively involved in addressing the spreading digital technology era, in the face of the “digital workforce,” “digital work,” and “digital workforce management” (Parry & Strohmeier, 2014). Therefore, it is important to conceptualize management functions, especially digital HRM, and to acquire new competencies and tools to change and adapt activities and strategies to these novel digital workforce characteristics (Manuti & De Palma, 2018). Traditional HRM domains (recruiting, training, performance, and compensation management) have been profoundly impacted by the digital economy. The HRM domain needs to embrace digital transformation and place good digital practices at the heart of its HRM policies (Tripathi & Kushwaha, 2017).

### **Governmental Digital Innovation Governance**

Berghaus and Back (2017) suggested that some companies are facing changes in government-led digital innovation governance, which is forcing companies to rethink the method they do business and change their organizations and even the way HRM does business. National digital innovation governance is defined as the effective organization, coordination, and guidance of coherent actions of all related entities in the national digital innovation system (or regional innovation system) with the help of relevant institutions, rules, and mechanisms to achieve the goals of promoting scientific and technological progress and improving innovation capabilities (Yuezhou, 2020).

Participants agree that digitalization (referring to the use of social media, cloud technology, mobile technology and HR mobile applications) is having a great and positive impact on human resource management in organizations (I believe that digitalization has positively affected the development of HRM). Participants spoke about the way digitalization eased the human resource management function and processes (it has become easier and faster; allows hr in the organization to improve its processes). They add that as a result employees in the human management resource departments are more effective and efficient (nowadays organizations have realized that effective recruiting cannot be done without the use of IT).

### **Advantages of the Digital Transformation of Human Resource Management**

Participants discussed the advantages of human resource management practiced in the digital era using words such as efficiency, effectiveness, productivity (allowing you to focus on more productive and important work), as well as referring to the better use of time and money. On the management of knowledge, participants noted that knowledge, as a result of the digital transformation of human resource management, is more readily and easily available (easy to access and acquire the knowledge), making it more possible to take informed human



resource management decisions (such as by forecasting the needs of a company in terms of resources and capabilities). The pace of work within the human resource management department has also changed as participants make reference to the word agility.

Greater employee surveillance (supervisory feedback) and monitoring is a controversial theme. Participants took a stand on this argument adding it to the advantages of the digital transformation of human resource management.

### **Challenges of the Digital Transformation of Human Resource Management**

Participants in both focus groups took a positive approach towards digitalization stating that challenges are more a reflection of not having a clear strategy as an organization, as opposed to challenges that are strictly related to digitalization (lack of strategy for digital transformation; lack of a defined strategy).

Employee resistance, defined as the unwillingness to adapt to the changes that digital transformation is bringing about in the world of human resource management, was a common theme in the discussion on challenges (not all employees will adapt to the new system). Some participants referred to the need for a change in organizational culture. Another challenge that was mentioned was the time needed for employees to adapt to the change and to learn new skills (some employees may not know how to use the technology and may need training).

A debate was held on digitalization and its impact on the financial bottom line for the organization. Participants discussed the initial cost of digitalization for the Human Resource Management department (lack of budget to enable digitalization), however also mentioned the long term financial advantage. Participants are concerned about data security and the related challenges that the digitalization of the human resource management function may bring with it.

### **The Changing Role of the Human Resource Management**

Not all participants believe that the role human resource management will change as some claim that the tasks and role will not change whilst the methods will (it will not change the role of the HR Manager, but will add different ways to do the same task; it makes the HR practices more efficient). Automation (automating time consuming and manual processes) will change the way the human resource function is carried out, in giving examples participants mentioned the greater automation in recruitment and selection, performance management (collecting regular employee reviews; monitoring performance, collecting supervisory feedback and facilitating regular employee reviews), and talent management (use data and technology to make informed talent decisions). International recruitment and selection is also easier in a digital era, for example with the possibility of interviewing people remotely (people can attend an interview in whichever country they find themselves in). Participants claim that digitalization will improve talent business decisions as a result of data analytics. The human resource manager is going to have more data available and therefore will be better equipped at making decisions (use data and technology to make better informed talent business decisions).

### **New Human Resource Competencies in the Digital Era**

Participants mentioned the need for expertise in HR Analytics as more data is being made available by the use of technology. They also emphasized the necessity for greater technology literacy as a foundation for HR managers to access, manage, integrate, evaluate, create, and communicate information. The discussion also introduced artificial intelligence, particularly robotics, highlighting the need to learn to work with these technologies. Student perceptions of HR management in the digital era have evolved significantly. They view HR management as more effective, efficient, productive, and agile, relying heavily on social media, mobile, cloud technology, and HR applications. However, challenges include the lack of organizational strategy, change management, employee resistance, and an organizational culture that has not fully embraced digital transformation. Undergraduates perceive 21st-century HR managers as more competent in HR analytics and technology literacy, especially in areas like recruitment and selection, performance management, and talent management.

Research findings align with previous studies indicating that the digital revolution is reshaping perceptions of HR management's value (Kaji et al., 2019). Students reflect on the advantages of digitalization noted in earlier research, such as in-depth analytics (Bersin, 2012; DiRomualdo et al., 2018; Baranes & Palas, 2019), greater efficiencies in recruitment and selection, enhanced access to previously closed data sets (Abolhassan, 2017), real-time employee monitoring (Bondarouk & Brewster, 2016), and automation of transactional tasks (Zeoli & Billeter, 2019). The revolution in recruitment and selection due to digitalization is particularly emphasized, echoing Lumi (2020), who noted significant efficiency and effectiveness improvements in these processes through platforms like Facebook, LinkedIn, and Skype. These platforms, collectively referred to as social media by participants, are now integral to HR functions.

Current findings highlight the importance of HR managers acquiring digital skills and increasing digital dexterity to fulfill their roles effectively, as noted by Chytiri (2019). Students underscore the necessity of technology expertise (Fenech et al., 2019), analytical capabilities (Lipton, 2017), and agility (Betchoo, 2016). They concur with Fabbri & Scapolan (2018) on the crucial role of HR analytics in improving decision quality and promoting organizational change. The study concludes that HR undergraduates perceive HR management in the digital era as carrying out traditional roles more effectively due to technology literacy and HR analytics competence. However, the shift requires support through organizational strategy, change management, and culture alignment. Practical implications suggest that HR programs should equip students with data analytics and technology literacy competencies. Organizations should leverage the efficiency gains of digital HR management, giving it a strategic role and investing in technologies that bring ROI. Additionally, companies that resist digital transformation risk losing talented graduates. Educational institutions should update curricula to reflect technological advancements in HR, while researchers should explore AI's impact on HRM, recognizing its potential to transform HR practices further (Chikhaoui & Mehar, 2020)..

### **Technology Integration in HR Planning**

Digital transformation provides an important foundation for integrating technology in human resource (HR) planning. In this era, artificial intelligence, big data analysis and technology platforms have become invaluable tools in improving the efficiency and effectiveness of HR planning. The use of artificial intelligence, for example, enables automation processes in employee selection, identifying potential talent, and predicting future skills needs.

Big data analysis helps HR make decisions supported by facts, extract insights from employee data to understand behavioral trends, and plan human resource needs based on empirical data (Gilch, 2021). The application of technology platforms, such as integrated HR management systems and performance analysis software, also contributes to increasing the efficiency of the HR planning process. Utilization of this platform allows easy access to employee information, real-time performance monitoring, and planning of skills development needs (Mazurchenko, 2019). The research results show that organizations that proactively adopt technology in HR planning tend to have systems that are more responsive and adaptive to change, creating a more efficient and innovative work environment. Therefore, technology integration not only speeds up the HR planning process, but also produces strategies that are more contextual and appropriate to the dynamics of digital transformation (Poba-Nzaou, 2020) (Udovita, 2020).

### **Involvement of Key Stakeholders in the Planning Process**

The importance of key stakeholders, in particular top-level control and business units, in the human resources (HR) making plans method is becoming an increasing number of distinctions inside the generation of digital transformation. The active role of key stakeholders is not just an organizational formality, however an aspect that has a significant effect on the achievement of HR planning.. Key stakeholders, by understanding the organization's vision and goals, can provide valuable insight regarding skills needs relevant to technological change (Halid, 2020). Good collaboration between HR and business units is key in supporting strategic HR planning. In the context of digital transformation, key stakeholders can contribute by providing information about the direction of business development, future workforce needs, and company strategies that will be adopted. Top level management, as the main key stakeholder, can ensure that HR policies are integrated with the overall organizational strategy (Galanti, 2023) (Ghobakhloo, 2021). By proactively engaging key

stakeholders, organizations can identify skills needed relevant to technological change. Key stakeholders may have a more holistic view of changes in the industry and can help HR design skills development programs accordingly. Thus, strong involvement of key stakeholders not only supports HR planning that is responsive to external dynamics, but also creates synergy between business needs and human resource management. As a result, organizations can more easily overcome challenges and take advantage of opportunities that arise in the era of digital transformation (Mitrofanova, 2019) (Abdeldayem, 2020).

### **Employee Skills and Leadership Development**

Emphasis on developing employee skills and leadership is a crucial element in effective human resource (HR) planning in the era of digital transformation. Findings show that organizations that dedicate efforts to engage employees in digital and leadership skills development are likely to reap positive benefits in the face of technological change (Samarasinghe, 2020) (Ruitao, 2023).

Developing employee skills is a must in an era where technology continues to develop. This initiative involves providing training and learning that suits industry and company needs. Additionally, inclusive approaches, such as mentoring programs and access to digital learning resources, can advance employee skills in a sustainable manner. Organizations that prioritize the development of these skills can create an environment where employees feel supported to adapt themselves to technological changes (Misbah, 2020) (Adawiah, 2023).

In addition, the role of employee leadership is crucial in optimizing the innovative potential of the workforce. Organizations that facilitate leadership from multiple levels and promote a culture of collaboration tend to be more innovative. It entails empowering personnel to take initiative, percentage thoughts, and contribute to the business enterprise's innovation process. Inside the context of digital transformation, employee management is the primary driver of organizational adaptability and potential to make use of the progressive ability of each person (Junita, 2021) (Emran, 2023). For that reason, an emphasis on developing employee abilities and management now not handiest will increase the employer's resilience to technological change, but additionally creates an environment where employees feel engaged, inspired, and able to make most contributions to organizational desires and innovation.

### **Alignment with Sustainable Development Goals**

The findings display that the combination of human useful resource (HR) making plans with digital transformation does not most effectively involve inner components of the organization, but also can pay interest to external influences, mainly sustainable improvement desires. organizations that efficiently align HR making plans with sustainable development desires display a dedication to social and environmental obligation, developing advantageous affects past operational sustainability. Concrete steps taken via the organization encompass reducing paper use by using digital technology for documentation and internal verbal exchange. In addition, efforts to reduce electricity consumption and assist using renewable power are an essential part of the HR planning approach. The usage of technology is likewise implemented to enhance sustainability in the place of job, which includes via making use of digital solutions for monitoring and managing assets, in addition to integrating sustainable guidelines in HR decisions (Sachdeva, 2023) (Huang, 2022).

The significance of this alignment is not only to create a wonderful effect on the environment, but can also improve the corporation's recognition in the eyes of stakeholders. Businesses that take note of sustainable improvement goals in HR planning can make stronger relationships with personnel, customers and commercial enterprise partners who're increasingly involved with sustainable troubles (Rêcross, 2021) (Liu, 2022). Accordingly, the mixing of sustainable development desires in HR planning within the digital transformation generation isn't only a reflection of the organization's social duty, however additionally a long-term investment to create added value in a holistic and sustainable manner (Abidi, 2023) (Amalia, 2022).

### **Challenges of Implementing Strategic HR Planning in the Digital Era**

Although strategic human resource (HR) planning in the digital era offers great potential, this research highlights several crucial challenges that are often faced in implementing this strategy (YuLing, 2023).

## **Resistance to Change**

The main challenge is resistance to change from employees. As new technologies are adopted and work processes change, employees may experience concerns about changing jobs, losing positions, or changing team dynamics. Management needs to implement effective communication strategies to allay concerns, provide necessary training, and involve employees in the change process.

## **Technological Uncertainty**

Rapid technological developments can create uncertainty. Organizations need to adapt to constantly changing technological developments, and this can create difficulties in selecting and implementing the most appropriate solutions. Investing time and resources in technology trend monitoring, as well as partnerships with leading technology providers, can help address this uncertainty.

## **Difficulty in Predicting Skill Needs**

With rapid changes in market demands and technology, predicting the skills requirements that will be required in the future is a challenge. Organizations need to adopt a flexible approach, giving priority to the development of general skills that can be adapted to contextual changes. Analysis of employee data and HR roles can help in identifying trends and evolving skills needs.

## **Understanding and Mitigating Challenges**

A deep understanding of these challenges is a crucial first step. Organizations need to create cross-functional teams involved in the HR planning process to understand the dynamics involved. Additionally, mitigation strategies must be implemented proactively. This includes an effective communicative approach, training programs accessible to all employees, and flexible strategies for dealing with technological uncertainty. In facing these challenges, organizations can achieve strategic HR planning success in the digital era by adopting a holistic and adaptive approach. Effective HR planning must include strategies to overcome resistance to change, deal with technological uncertainty, and respond quickly to changing skills needs in the dynamic digital era (Trushkina, 2020).

## **CONCLUSION**

Digital Human Resource Management is considered a basic need in business organizations. Every business organization has a long way to go in adopting digitalization. Digital HRM helps maintain a strong relationship between management and employees (Bahjat Abdallah et al., 2017). Preparing a strategy for DHRM will help improve organizational performance. This study has to highlight the importance of DHRM in the organization and enhance the recruitment process by creating an application by the top leading organization. The outcome of the research paper will act as an essential aspect for researchers to implement further research on DHRM (Atwijuka & Caldwell, 2017). Every organization should develop its digital strategy to improve productivity. In the present scenario, DHRM is considered a more significant and growing research topic and an essential topic for a business organization. With the use of DHR practice and through social media, the internet, AI, and other technology, organizations can maintain their performance and employees' quality standards for the smooth running of the organization.

This research explores "Strategic Human Resource Planning in the Era of Digital Transformation" through the Systematic Literature Review method and reveals important findings. Technology integration, especially through artificial intelligence, big data analysis, and technology platforms, has proven to be a deep foundation in responsive and adaptive HR planning in the digital transformation era. The success of this planning also depends heavily on the involvement of key stakeholders, particularly upper management and business units, who contribute to identifying skills relevant to technological change.

Developing employee skills and leadership was also revealed as a determining factor. Organizations that prioritize the development of employee digital and leadership skills can face technological change more readily while optimizing the innovative potential of their workforce. On the other hand, this research highlights that aligning HR planning with sustainable development goals is an important strategic step. Integrating technology

to reduce environmental footprints and developing sustainable policies are integral to successful HR planning in the digital era. However, implementation challenges are also a major highlight. Resistance to change, technological uncertainty, and difficulties in predicting skills needs must be overcome. In looking to the future, this research identifies knowledge gaps in the literature, offering opportunities for continued research. Focusing on innovative HR planning models and change management strategies amidst digital transformation can be critical steps to fill this gap. In conclusion, this research provides in-depth insight into HR planning in the digital era. It highlights challenges, opportunities, and future research directions that can help organizations understand and deal with the dynamics of change in the ever-evolving business world.

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