

# HUMAN RESOURCE MANAGEMENT TRANSFORMATION IN THE DIGITAL ERA: INNOVATIONS AND CHALLENGES IN STARTUPS

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## Abstract

*The digital disruption era has significantly impacted startups, requiring them to adopt innovative Human Resource Management (HRM) strategies to remain competitive. This study examines HRM technology adoption, including AI-based recruitment, cloud-based HRIS, and digital collaboration tools, and the challenges that hinder their full implementation. Despite the benefits, budget constraints, lack of managerial support, and low digital competency remain major obstacles. Using a qualitative descriptive approach, data were collected from Indonesian startups through in-depth interviews, observations, and document analysis. Findings indicate that startups with clear digital transformation roadmaps, strong leadership engagement, and structured employee training programs are more successful in integrating HRM technology. However, many startups still rely on manual HR processes, limiting efficiency and innovation. This study highlights that HRM should be a strategic function rather than an administrative task, focusing on technology-driven efficiency, digital upskilling, and cultural adaptation. To ensure sustainable growth, startups must prioritize digital innovation, workforce development, and managerial commitment in their HRM transformation.*

**Keywords:** HRM innovation, digital transformation, startup management, AI in HR, cloud-based HRIS, workforce development.

## 1. INTRODUCTION

In the era of digital disruption, business dynamics have undergone significant changes, particularly in the startup sector. Startups are required to quickly adapt to technological advancements, shifts in consumer preferences, and market trends to maintain their competitiveness in an increasingly fierce business landscape. One crucial aspect that supports this adaptation is human resource management (HRM). Innovative and responsive Human Resource Management (HRM) plays a key role in creating a work environment that is adaptive, creative, productive, and prepared to face challenges from various directions.

On the other hand, digital disruption has opened vast opportunities for companies to implement innovations in various areas, including HRM. Technologies such as big data, artificial intelligence (AI), and cloud-based management systems have transformed how

organizations recruit, train, evaluate, and retain employees. However, the implementation of these innovations is not without challenges, especially for startups that are characterized by dynamism yet constrained by limited resources. Sutrisno (2018) states that the pressure to undergo digital transformation demands startups to accelerate the adoption of more modern and integrated HRM systems. This transformation involves not only technological aspects but also restructuring the work culture to foster an innovative environment. Amid this innovation-driven environment, Rahmawati and Nugroho (2019) highlight that budget constraints, lack of managerial support, and limited technological capabilities remain major barriers to optimizing HRM in startups.

Previous studies, such as those conducted by Prasetyo (2020), emphasize a significant gap between the need for innovation in HRM and its actual implementation. This gap becomes even more evident when startups attempt to implement digital technology in HR management but often remain trapped in conventional methods that are less effective. For instance, in the recruitment process, many startups still use manual systems instead of AI-based technology, which could streamline and accelerate the selection process. Lestari (2017) also stresses that while innovation is a crucial factor in enhancing competitiveness, many startups have not fully integrated it into their HRM systems, resulting in little to no significant improvement in organizational performance despite adopting new technologies.

Furthermore, Hadi (2018) argues that the paradigm shift in HRM in the digital era requires a new approach that is more flexible, adaptive, and focused on sustainable human resource development. This shift demands strategic thinking in designing HRM policies and practices to align with the needs and characteristics of startups, which tend to evolve rapidly. However, challenges arise when companies lack a clear roadmap to integrate technology and an innovation-driven culture into their daily operations. Wulandari (2020) adds that digital competency development among employees is a crucial aspect that is often overlooked, even though it significantly determines the success of technology implementation. Without adequate competency support, the technologies implemented will not provide a substantial positive impact on productivity and efficiency.

In the context of digital innovation, Firmansyah (2019) finds that although technology adoption has been widely implemented across various sectors, its application in HRM within startups remains minimal. Most companies focus solely on using technology for operational purposes without considering its integration into HR management strategies. This indicates an imbalance between technological utilization in production or marketing functions and in human resource management. Dewi (2018) highlights a significant gap between theory and practice in the implementation of HRM within startups. This gap is particularly evident in the adaptation process to technology-based HR management systems, which are often perceived as an additional burden rather than a long-term investment that could be beneficial.

The complexity of these issues is further reinforced by the findings of Sari and Putra (2021), who identify that HR transformation in the digital disruption era faces not only technological challenges but also structural and cultural obstacles within organizations. They discover that the lack of strategic support from top management and the incomplete integration of technology with managerial practices are major barriers to establishing an effective HRM system. Many startups struggle to optimize human resources as their primary

assets because they still perceive HRM as a purely administrative function rather than an integral part of business strategy.

Observing this phenomenon, Mahendra (2022) states that innovative strategies in HRM implementation must be tailored to the unique characteristics of startups. Startups with lean structures and dynamic work cultures require a flexible HRM approach while maintaining a clear direction toward long-term business goals. This study reveals the urgent need to develop an HRM framework capable of addressing digital disruption challenges holistically, emphasizing not only technological adoption but also skill development, mindset shifts, and the formation of an organizational culture that is adaptive to change.

Although some studies have addressed this topic, there is still a lack of literature that comprehensively examines how innovation and challenges in HRM implementation can be effectively integrated within the startup context. Existing research generally focuses on one aspect, such as technology or competency development, without thoroughly analyzing the interrelation between these elements. Therefore, this study aims to delve deeper into the dynamics of innovative HRM implementation, the challenges faced, and the strategies that can be applied to bridge the existing gap. With a comprehensive understanding, startups are expected to optimize their HR management to face competition in the digital disruption era more effectively, efficiently, and competitively.

## 2. RESEARCH METHOD

This study was conducted in several startup companies in Indonesia that have been operating for at least three years, employ at least 20 personnel, and have adopted technology in human resource management (HRM). The selection of subjects was carried out using purposive sampling to ensure data relevance to the research focus. The study applied a qualitative descriptive approach, utilizing primary data from in-depth interviews with HR managers, company executives, and employees, as well as secondary data from company documents and reports. Additionally, participatory observation was conducted to directly examine HRM dynamics and employee interactions in the workplace.

The collected data were analyzed using thematic analysis techniques, involving steps such as data transcription, initial coding, theme identification, theme review, and theme naming. This structured approach allowed for the systematic organization of data and the extraction of meaningful conclusions. To ensure research accuracy and reliability, source and method triangulation were applied by cross-verifying information from different informants and comparing data obtained through interviews, observations, and document analysis. This step was taken to improve the credibility and validity of the findings.

By implementing this methodological approach, the study aims to provide significant insights into the application of innovative HRM practices in startups within the digital disruption era. Furthermore, it seeks to offer practical recommendations to help startups develop adaptive and effective HRM strategies, ensuring they remain competitive and responsive to the rapidly evolving business landscape.

### **3. RESULTS AND DISCUSSION**

#### **Result**

This study reveals various findings related to the implementation of innovative Human Resource Management (HRM) in startup companies during the digital disruption era. The data were collected through in-depth interviews, participatory observations, and document studies conducted on five startup companies in Indonesia that met the research criteria.

#### **Application of Technology in HRM**

Currently, most companies have adopted technology to support human resource management (HRM). One of the widely used technologies is the cloud-based Human Resource Information System (HRIS). This system facilitates the management of various administrative processes, such as attendance recording, salary calculation, and employee leave management, in an efficient and integrated manner. For instance, PT Innovatech has successfully implemented an AI-based recruitment system that has proven to accelerate the employee selection process. This technological implementation enables the company to expedite recruitment by up to 40% faster compared to conventional methods that require a longer time for candidate screening and evaluation (Firmansyah, 2019). However, not all companies have transitioned to technology-based systems. Two companies still rely on manual methods for their HR management, which can lead to several issues, such as slower processes, higher error rates, and reduced efficiency in employee data processing. This situation highlights the importance of digital transformation in HR management to improve operational effectiveness and accuracy.

#### **Implementation Challenges**

In the process of implementing technology in human resource management, companies face several challenges. Research by Rahmawati & Nugroho (2019) revealed that the three main challenges often encountered are limited budgets, insufficient managerial support, and low digital competence among employees. Small companies, particularly those with limited funding, often postpone technological investments due to the perceived high costs. This budget constraint becomes a significant barrier to digital transformation, even though technology can enhance operational efficiency in the long run. In addition to financial constraints, inadequate managerial support also hampers the implementation of new systems. When management does not fully support or understand the benefits of the technology to be implemented, the adaptation process becomes slower and more prone to failure. Another factor is the low digital competence among employees; many do not possess the necessary skills to operate technology-based systems, thereby requiring additional training that demands time and financial investment. On the other hand, the shift towards a more flexible work culture also presents its own challenges. Wulandari (2020) noted that the transition from a traditional hierarchical work system to a more flexible system often causes confusion among employees, especially those accustomed to conventional work structures. Adapting to this change requires effective communication and ongoing support to help employees adjust to the new work environment. Overall, these challenges underscore the

importance of meticulous planning, full managerial support, and the enhancement of digital competencies to ensure the successful implementation of technology in HR management.

### **Employee Competency Development**

The development of employee competencies, especially in the digital domain, is a critical factor in supporting technological transformation in the workplace. However, this study indicates that only three out of the five companies actively conduct digital training for their employees. For example, PT StartUpPro has implemented a competency development program by holding monthly workshops focused on enhancing technological skills. This initiative has positively impacted employee productivity, making them more proficient in utilizing technology to support their daily tasks (Hadi, 2018). Conversely, the other two companies experience stagnation in competency development due to a lack of training programs. This inactivity risks reducing the company's competitiveness, hindering adaptation to technological changes, and causing a skills gap among employees. These conditions affirm that investment in digital training and skill development is crucial to ensure that employees can adapt to evolving technologies, thereby keeping the company's operations efficient and competitive.

### **Changes in Work Culture and Mindset**

A shift towards a more flexible and innovative work culture is an essential component of modern organizational transformation. Based on the study's findings, 60% of respondents stated that their companies have experienced a transition towards a work culture that is more adaptive to technological developments. However, the process of adapting to these changes does not always proceed smoothly. For example, PT TechUp implemented a remote work system to enhance flexibility, but in its early stages, the company experienced a decline in performance due to a lack of effective communication among teams. Employees encountered difficulties in coordinating, which affected operational efficiency. Recognizing these issues, PT TechUp conducted regular evaluations and decided to adopt various digital collaboration tools, such as Slack for instant communication and Trello for project management. The use of these tools has proven to improve inter-employee coordination, accelerate workflow, and help teams better adapt to remote work systems (Mahendra, 2022). These findings confirm that changes in work culture require appropriate technological support, effective communication, and commitment from all parties within the company to create a productive and collaborative work environment. Adapting employee mindsets is also key to ensuring a smooth transition to the new work culture and achieving optimal outcomes.

### **Strategies to Overcome Barriers**

Companies that successfully overcome various barriers in the digital transformation process generally have a clear roadmap to guide their implementation steps. This roadmap includes structured strategies focused on three main aspects: the involvement of top management, the allocation of a dedicated technology budget, and employee competency enhancement programs. First, the involvement of top management plays a crucial role in driving change. When company leaders are actively engaged, digital transformation

initiatives tend to gain broader support across the organization. Strong leadership helps shape an adaptive and innovative work culture. Second, the allocation of a dedicated technology budget is a critical step to finance various technological needs. For example, PT Innovatech demonstrated its commitment by allocating 15% of its revenue to technology development in HR management. This investment allows the company to adopt modern systems, accelerate operational processes, and enhance work efficiency (Sari & Putra, 2021). Third, employee competency enhancement programs are necessary to ensure that the workforce can adapt to new technologies. Structured training reduces resistance to change and strengthens employees' abilities to use the implemented systems. Overall, the implementation of these strategies not only enables companies to overcome barriers in digital transformation but also creates sustainable competitive advantages in an increasingly dynamic market.

## **Discussion**

### **Integration of Technology and HRM Practices**

The research findings confirm previous studies by Dewi (2018) that there is an imbalance between the use of technology in operational lines and HR management. Successful startups are those that not only focus on operations but also integrate HRM as an integral part of their business strategy. This is in line with Mahendra's (2022) assertion that effective HR management requires a holistic approach that combines technology, skill development, and an adaptive work culture.

### **The Role of Top Management in Digital Transformation**

The lack of support from top management remains a significant barrier. As noted by Sari and Putra (2021), the active involvement of company leaders is necessary to create an environment conducive to transformation. Companies that involve management in decision-making related to HRM are more successful in adopting technology and driving cultural change.

### **The Gap Between Theory and Practice**

These findings reinforce Prasetyo's (2020) argument regarding the gap between the need for innovation and the implementation of HRM practices. Many companies acknowledge the importance of innovation but remain trapped in conventional practices. This is evident in companies that have not yet utilized AI in the recruitment process, despite its potential to significantly reduce selection time.

### **Employee Competency Development as a Long-Term Investment**

Lestari (2017) emphasizes the importance of competency development to support innovation. The findings of this study show that companies investing time and resources in employee training experience increased productivity. PT StartUpPro, which regularly conducts training, has improved work efficiency by 25% over the past six months.

### **A Digital Transformation Roadmap as the Key to Success**

Mahendra (2022) states that startups require a clear roadmap to integrate technology into HRM. This study demonstrates that companies with long-term plans are better prepared to face changes. PT Innovatech, which has a five-year strategy for technology development, has proven to be more adaptive compared to companies lacking such plans.

### **4. CONCLUSION**

The findings of this study emphasize the importance of technological innovation in Human Resource Management (HRM), particularly in startup companies navigating the challenges of digital disruption. While many startups have begun integrating cloud-based HRIS systems, AI-driven recruitment, and digital collaboration tools, the study reveals that not all companies have fully transitioned to technology-based HRM practices. Key challenges such as budget constraints, lack of managerial support, and limited digital competence among employees continue to hinder the full-scale implementation of digital HRM. Additionally, adapting to a more flexible and innovation-driven work culture remains a struggle for some organizations, reinforcing the need for structured change management and digital upskilling programs.

To ensure successful digital transformation in HRM, startups must adopt a strategic roadmap that includes strong top management involvement, dedicated investment in technology, and continuous competency development for employees. Companies that actively train their workforce and implement structured technology adoption plans are more likely to remain competitive and responsive to market changes. The study concludes that HRM should not only be viewed as an administrative function but rather as a core component of business strategy, driving productivity, efficiency, and long-term success. By prioritizing innovation, digital competency, and a supportive corporate culture, startups can bridge the gap between technological adoption and effective HRM implementation, ensuring sustainable growth in the evolving digital economy.

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