

Digital Transformation and Human Resource Work Productivity: A Literature Review

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Abstract

Digital transformation is a strategic process that is becoming increasingly crucial for contemporary organizations, alongside the rapid advancements in information and communication technology. This transformation not only involves the implementation of digital technology but also comprehensive changes in working methods, organizational structure, and human resource management (HRM). This study aims to examine the influence of digital transformation in enhancing human resource work efficiency through literature analysis. The research approach applied is qualitative, through a literature review encompassing various academic journals, books, and proceedings related to the theme of digital transformation and human resource work efficiency. Data were analyzed using content analysis methods to identify various concepts, findings, and patterns of interaction between digital transformation, digital skills, and work efficiency. Findings from this study indicate that digitalization can improve work efficiency by automating various processes, integrating information systems, enhancing agility in work, and accelerating access to information. However, the increase in productivity greatly depends on the readiness of human resources, particularly digital skills, attitudes toward change, and support from organizational culture. Digital skills serve as a crucial element that links digital transformation with human resource work efficiency. Therefore, digital transformation must be accompanied by continuous management and development of human resources to ensure maximum contribution to productivity improvement within the organization.

Keywords: Digital Transformation, Work Productivity, Human Resources, Digital Competence.

Abstrak

Transformasi digital adalah sebuah proses strategis yang semakin krusial bagi organisasi kontemporer, seiring dengan cepatnya kemajuan di bidang teknologi informasi dan komunikasi. Transformasi ini tidak hanya melibatkan penerapan teknologi digital, tetapi juga perubahan menyeluruh dalam cara kerja, struktur organisasi, serta manajemen sumber daya manusia (SDM). Studi ini bertujuan untuk mengkaji pengaruh transformasi digital dalam meningkatkan efisiensi kerja sumber

daya manusia dengan menggunakan analisis literatur. Pendekatan penelitian yang diterapkan adalah kualitatif melalui kajian pustaka yang mencakup berbagai jurnal akademik, buku, serta prosiding yang berkaitan dengan tema transformasi digital dan efisiensi kerja sumber daya manusia. Data dianalisis dengan menerapkan metode analisis konten guna mengidentifikasi berbagai konsep, hasil, dan pola interaksi antara transformasi digital, kecakapan digital, serta efisiensi kerja. Temuan dari penelitian ini mengindikasikan bahwa digitalisasi dapat meningkatkan efisiensi kerja dengan cara mengotomatiskan berbagai proses, menggabungkan sistem informasi, meningkatkan kelincahan dalam bekerja, dan mempercepat akses terhadap informasi. Namun, kenaikan produktivitas itu sangat tergantung pada kesiapan sumber daya manusia, terutama kemampuan digital, sikap terhadap perubahan, serta dukungan dari budaya organisasi. Kemampuan digital berfungsi sebagai elemen krusial yang menghubungkan transformasi digital dengan efisiensi kerja sumber daya manusia. Dengan demikian, transformasi digital harus diikuti dengan pengelolaan dan pengembangan sumber daya manusia secara berkelanjutan untuk memastikan kontribusi yang maksimal terhadap peningkatan produktivitas kerja di dalam organisasi.

Kata Kunci: *Transformasi Digital, Produktivitas Kerja, Sumber Daya Manusia, Kompetensi Digital.*

Introduction

Digital transformation is a rapidly evolving phenomenon driven by advancements in information and communication technology, alongside the growing need for organizations to adapt to a constantly changing business environment. It entails not merely the adoption of digital tools but also comprehensive changes to business processes, working methods, and human resource (HR) management practices. In today's organizational landscape, digital transformation is viewed as a crucial approach to enhancing efficiency, adaptability, and competitiveness. (Arifin, R., & Handayani, 2020)

Human resources play a pivotal role in the digital transformation process, as they are the primary agents in utilizing and implementing technology (Febriansyah & Aravik, 2026). The successful implementation of digital systems relies heavily on the workforce's ability to master technology, understand changes in work processes, and align their work attitudes with the demands of the digital era. Without adequate workforce competence and readiness, the digital transformation process risks failing to deliver optimal results for organizational performance. (Arifin, R., & Handayani, 2020)

Human resource (HR) performance is a key metric for evaluating organizational efficiency (Ramadhan, et,al, 2026). Productivity reflects the workforce's potential to generate results effectively and efficiently by leveraging available resources. In the context of digital transformation, productivity is expected to rise through process automation, workflow simplification, faster information access, and improved coordination and collaboration among individuals. However, increased productivity does not automatically result from

the adoption of digital technology, as it is influenced by various internal organizational factors. (Astuti, E. S., & Sudirman, 2019)

Numerous obstacles persist in the implementation of digital transformation, particularly regarding human resource readiness. These challenges include limited digital skills, resistance to change, and varying individual capacities to adapt to technology. Furthermore, organizational cultures that fail to support innovation and continuous learning can hinder the full utilization of digital technologies. This situation underscores that digitalization cannot be decoupled from well-designed, ongoing human resource development initiatives. (Handoko, 2019)

Previous studies indicate that digitalization impacts human resource productivity, whether directly or through mediating factors such as digital skills, morale, and organizational support. However, research findings vary, particularly due to differences in organizational sectors, levels of digital maturity, and human resource characteristics. These disparities highlight the need for a deeper analysis of the relationship between digital transformation and human resource work efficiency within a more detailed and measurable context. (Handoko, 2019)

In light of this context, this study explores digital transformation as a factor influencing human resource (HR) performance, focusing on the use of digital technology in work activities and HR readiness to embrace change. The study aims to provide concrete insights into how digital transformation contributes to enhancing human resource work efficiency and to serve as a reference for designing HR management strategies aligned with the demands of the digital era. (Handoko, 2019).

Research Methods

This study employs a qualitative approach utilizing a literature review method. Data were gathered from various relevant sources, including scholarly journals, academic books, and conference proceedings addressing digital transformation and human resource (HR) productivity. Literature was selected based on criteria regarding currency, topical relevance, and source credibility.

Data collection involved the systematic examination and documentation of published literature. The data were analyzed using content analysis to identify concepts, findings, and patterns of interaction between digital transformation and human resource productivity. The analysis results are presented using both descriptive and analytical approaches.

Discussion

1. Digital Transformation and Human Resource Work Productivity

Digital transformation is an increasingly dominant phenomenon in the evolution of modern organizations, driven by rapid advancements in information and communication technology (Andini & Aravik, 2026). In academic literature, digital transformation is understood as a process of organizational change involving the integration of digital technology into all operational and managerial

aspects; this alters how organizations create value, manage work processes, and utilize human resources (HR). Consequently, digital transformation is not merely about implementing technological systems but encompasses comprehensive structural, cultural, and behavioral changes (Budiarto, M., Prabowo, H., & Herawan, 2021).

Digital transformation is strategic and long-term in nature, as its success relies on the alignment of business strategy, technology infrastructure, and HR readiness. Imbalances among these three aspects can lead to transformation failure or limit the impact on organizational performance. Therefore, digital transformation must be understood as a socio-technical process that positions people and technology as an integrated, mutually influencing entity (Hasibuan, 2018).

Work productivity is a crucial indicator for assessing HR performance and organizational effectiveness (Saputra & Aravik, 2026, Peggi & Aravik, 2026). Traditionally, productivity is defined as the ratio of output produced to input utilized. However, in a digital work environment, productivity is measured not only by output quantity but also by work quality, time efficiency, task completion accuracy, and the ability of HR to generate added value through the use of technology (Hasibuan, 2018).

Digital transformation has the potential to enhance work productivity through the digitization and automation of work processes. Automation enables a reduction in routine and repetitive manual tasks, allowing human resources to focus on activities requiring analysis, creativity, and decision-making. In this context, digital technology serves as a means to improve work efficiency and minimize resource waste (Kurniawan, A., & Yuliana, 2021).

In addition to automation, the integration of information systems also supports productivity gains. Integrated digital systems facilitate a faster and more accurate flow of information between work units. Information delays and data fragmentation can hinder productivity, whereas real-time access to information supports more responsive work processes and more precise decision-making (Mardiasmo, 2018).

However, the implementation of digital technology does not automatically boost work productivity. Organizations may experience a temporary decline in productivity during the adaptation phase to new systems—particularly when staff possess limited digital competence, exhibit resistance to change, or lack adequate organizational support. These conditions demonstrate that the success of digital transformation is determined not only by the availability of technology but also by the human readiness to utilize it (Mardiasmo, 2018).

2. Digital Competence, Organizational Adaptation, and Work Productivity Challenges

Human resources are the primary actors in digital transformation, acting as users, managers, and developers of technology within work processes. Digital

technology cannot generate optimal productive value without the support of a workforce capable of utilizing it effectively. Consequently, digital transformation necessitates a paradigm shift in human resource management—moving from an administrative approach to a strategic one focused on competency development and performance enhancement (Nugroho, Y., & Negara, 2020).

The success of digital transformation is also influenced by workforce characteristics, such as education level, work experience, attitudes toward technology, and learning motivation. These varying characteristics can lead to disparities in productivity among individuals. In organizations with diverse levels of digital literacy, digital transformation risks widening the productivity gap unless accompanied by inclusive human resource development policies (Pratama, A. B., & Wardhani, 2019).

A crucial aspect of supporting productivity in the digital era is digital competence—defined as an individual's ability to use digital technology effectively, critically, and responsibly within a work context. This competence encompasses technical skills, information literacy, digital communication, and the ability to adapt to technological changes. Regarding the relationship between digital transformation and work productivity, digital competence serves as a mediating factor that bridges technology utilization and workforce performance outcomes (Putri, R. A., & Wibowo, 2020).

Human resources with high digital digital competence are generally better able to leverage technology to enhance work efficiency and quality. They adapt relatively quickly to new systems, demonstrate greater independence in resolving technical issues, and show more openness to innovation. Conversely, low digital competence can lead to increased reliance on technical support, a higher likelihood of errors, and slower task completion. Therefore, digital competence must be developed continuously through training, learning, and work experience to ensure that workforce skills remain relevant amidst technological advancements (Putri, R. A., & Wibowo, 2020).

Digital transformation also alters work patterns and job design through the implementation of flexible work arrangements, such as remote work and project-based work. Such flexibility has the potential to boost productivity by expanding autonomy and overcoming geographical barriers. However, successful implementation requires a higher degree of self-management, discipline, and responsibility. Furthermore, while digital collaboration platforms facilitate cross-functional and cross-location coordination, their effectiveness hinges on clear work structures, digital communication, defined roles, and adapted work procedures. Poorly managed collaboration can actually increase the coordination burden and reduce productivity (Rachman, T., & Suryani, 2021).

Another challenge is resistance to change. Employees who feel threatened by technological advancements or insecure about their jobs tend to resist the implementation of new digital systems. Such resistance can hinder technology adoption and negatively impact work productivity (Sedarmayanti, 2017).

Additionally, high-intensity use of digital technology can trigger work-related stress, digital fatigue, and an imbalance between work and personal life. Since technology-driven work pressures can affect long-term performance and productivity, managing digital transformation requires careful attention to employee well-being (Siregar, S., & Lubis, 2020).

Organizational culture plays a pivotal role in the success of digital transformation in enhancing workforce productivity. A culture that fosters innovation, learning, and openness to change encourages employees to experiment with technology, share knowledge, and continuously improve performance. Conversely, a rigid, hierarchical organizational culture can stifle digital initiatives and limit productivity (Sugiyono, 2020). In human resource management, digital transformation also drives changes in performance appraisal and career development systems by utilizing data-driven and output-based indicators. A focus on performance achievement and output quality is becoming increasingly important, while digital competencies create new career development opportunities for the workforce (Wibowo, 2019).

Based on the foregoing, digital transformation holds the potential to boost workforce productivity; however, the outcome depends on the interplay between technology, digital competencies, and the organizational environment. Implementing technology without accompanying efforts in competency development, change management, an adaptive organizational culture, and attention to employee well-being may yield only limited productivity gains. Therefore, digital transformation must be implemented through an integrated approach that places the workforce at the heart of organizational change.

Conclusion

Based on the literature review conducted, digital transformation is defined as a strategic and comprehensive organizational change process. This process extends beyond the mere use of digital technology to encompass changes in work methods, organizational structures, and human resource management. Digital transformation drives work efficiency by digitizing and automating procedures, integrating information systems, and enhancing workplace flexibility and effectiveness.

Workforce productivity in the digital era has evolved to encompass a broader scope, including factors such as quality, efficiency, speed, and value addition. Gains in productivity do not occur instantaneously simply through the adoption of digital technology; rather, they depend heavily on the readiness and capability of the workforce to utilize such technology. In this context, the workforce plays a pivotal role in the success of digital transformation and the enhancement of productivity.

Digital capability is a crucial element that bridges the gap between digital transformation and workforce efficiency. Adequate digital capability enables individuals to adapt to technological advancements, improve work effectiveness,

and produce higher-quality outcomes. Conversely, a lack of digital capability can hinder technology adoption and negatively impact work efficiency.

Beyond digital skills, organizational elements—such as work culture, human resource management systems, and approaches to change—also play a role in determining the success of digital transformation. An organizational culture that is flexible and fosters continuous learning reinforces the positive impact of digital transformation on work efficiency. Consequently, the management of digital transformation must be comprehensive and integrated with human resource development to maximize its contribution to enhancing work productivity.

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