

Digital Transformation and Employee Management Effectiveness in Modern Human Resource Management: Evidence from PT Sarana Bintang Abadi Tex

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Keywords:	Abstract
Digital Transformation; Human Resource Management; Employee Management Effectiveness; HR Digitalization; Manufacturing Industry	This research aims to analyze the influence of digital transformation on the effectiveness of employee management in modern human resource management at PT Sarana Bintang Abadi Tex. This quantitative survey used questionnaires distributed to employees through simple random sampling, analyzed using SPSS simple linear regression. The results of the study indicate that digital transformation has a positive and significant influence on the effectiveness of employee management. Based on the data processing results using SPSS, the value of variable X1 (digital transformation) was 0.498 and variable Y (employee management effectiveness) was 0.339, indicating a positive relationship between variables. Furthermore, the simple linear regression analysis showed a regression coefficient of 0.678 with a significance value of $0.000 < 0.05$ and a t-count value of 7.842, which was significantly higher than the t-table value. These findings confirm that digital transformation has a positive and significant effect on employee management effectiveness, therefore the research hypothesis is accepted. The implementation of digital systems has proven to improve administrative efficiency, accelerate internal communication, strengthen work supervision, and support more accurate and responsive decision-making. In addition to increasing work productivity, digital transformation also encourages the creation of more adaptive work patterns toward technological changes and the dynamics of modern industry. This research provides a theoretical contribution to the development of modern human resource management studies and serves as a practical reference for companies in designing more effective, sustainable, and workforce-oriented HR digitalization strategies aimed at improving the quality of employee management.

INTRODUCTION

Digital transformation has emerged as a strategic phenomenon that reshapes nearly every dimension of modern organizational operations, including human resource management (HRM). The rapid advancement of information technology, artificial intelligence, big data, cloud computing, and automated digital systems compels companies to reconfigure their work patterns and employee management mechanisms to become more efficient, effective, and adaptive to global industrial dynamics. In this context, digitalization is no longer merely understood as the adoption of technology, but rather as a profound transformative process that influences organizational structure, workplace culture, communication patterns, and managerial decision-making processes (Bondarouk & Brewster, 2016).

Within modern HRM practices, digital transformation introduces substantial changes in workforce management systems. Traditional manual processes are increasingly being replaced by digital-based systems such as electronic human resource management (e-HRM), human resource information systems (HRIS), digital performance appraisal platforms, and real-time data-driven employee monitoring systems (Kavanagh & Johnson, 2017; Kurniawati & Rahmawati, 2021). According to Strohmeier (2007), the integration of digital technologies into HRM enables organizations to enhance administrative efficiency, accelerate decision-making processes, and improve the quality of internal coordination. Furthermore, digital systems expand information accessibility and promote greater transparency in employee management practices.

These developments are particularly relevant in manufacturing and textile industries, which are characterized by high operational complexity. Intensifying industrial competition requires companies to establish flexible and responsive HR management systems capable of adapting to rapidly changing market conditions (Noe et al., 2021). PT Sarana Bintang Abadi Tex, a textile manufacturing company, faces significant challenges in maintaining effective workforce management amid accelerating digital transformation. The company is expected to integrate digital technologies into its HRM practices to enhance productivity, operational efficiency, organizational communication, and employee performance monitoring (Al-Haddad & Kotnour, 2015; Nugroho & Prasetyo, 2022).

However, the implementation of digital transformation in HR management is not without challenges. Previous studies indicate that digital transformation often encounters internal resistance due to low digital literacy among employees, limited technological infrastructure, and organizational unpreparedness in managing cultural change (Vial, 2019). In addition, digitalization may also create adaptation gaps among different generations of the workforce, which can affect the overall effectiveness of technology-based work systems (Yusup & Amelia, 2020).

These phenomena indicate that employee management effectiveness is not solely determined by the presence of digital technology, but also by the readiness of both the organization and its human resources in adopting change. Therefore, research on the impact of digital transformation on employee management effectiveness is essential, particularly within textile manufacturing companies that possess operational characteristics distinct from service-based or technology-driven industries.

Several prior studies have examined the relationship between digital transformation and human resource management (HRM). Research conducted by Parry and Tyson (2011) indicates that the implementation of electronic human resource management (e-HRM) can enhance administrative efficiency and improve the quality of HR services within organizations. Similarly, Marler and Fisher (2013) found that HR digitalization contributes significantly to improving employee data management effectiveness and supports more informed, data-driven strategic decision-making processes. On the other hand, Bondarouk, Ruël, and van der Heijden (2017) explain that digital transformation influences organizational culture shifts and alters patterns of interaction among employees. Their findings emphasize that the success of HR digitalization is

highly dependent on an organization's ability to foster adaptability and manage technological change effectively within its workforce (Stone et al., 2015).

Although numerous studies have been conducted, the majority of existing literature tends to focus on service industries, multinational corporations, or high-technology organizations (Sutrisno, 2019). Research addressing the impact of digital transformation on employee management effectiveness within the textile manufacturing sector in Indonesia remains relatively limited. Furthermore, previous studies often emphasize the implementation of digital tools as standalone administrative instruments, without deeply examining their comprehensive impact on overall employee management effectiveness.

Based on the review of previous studies, a clear research gap can be identified, indicating that investigations on digital transformation within the textile manufacturing sector are still underexplored, particularly in relation to employee management effectiveness in modern HRM contexts (Hinings et al., 2018). Existing literature predominantly treats digitalization as an administrative tool, while broader dimensions of workforce management effectiveness such as coordination efficiency, internal communication quality, work supervision, and productivity enhancement have not been thoroughly analyzed in an integrated manner (Darmawan, 2020).

The novelty of this study lies in its focus on integrating digital transformation with employee management effectiveness within a national textile company, namely PT Sarana Bintang Abadi Tex. This research not only examines digital technology as an operational support tool but also evaluates its influence on the overall quality of modern human resource management practices in a comprehensive and structured manner.

Based on the background of the study, the research problem formulated in this study is: "Does digital transformation affect employee management effectiveness in modern human resource management at PT Sarana Bintang Abadi Tex?" The hypothesis proposed in this study is as follows: H₁: Digital transformation has a positive and significant effect on employee management effectiveness in modern human resource management at PT Sarana Bintang Abadi Tex. This study aims to analyze and determine the effect of digital transformation on employee management effectiveness in modern human resource management at PT Sarana Bintang Abadi Tex. This study is expected to provide both theoretical and practical contributions. Theoretically, it enriches the literature on digital transformation and modern HRM, particularly within the Indonesian textile manufacturing sector. Practically, the findings are expected to serve as a reference for companies in designing more effective, adaptive, and quality-oriented HR digitalization strategies that enhance workforce management performance.

METHOD

This research employed a quantitative approach using a survey method to analyze the effect of digital transformation on employee management effectiveness within modern human resource management at PT Sarana Bintang Abadi Tex. The quantitative approach is selected because the study aims to objectively examine relationships between variables through numerical measurement and statistical analysis. The survey method is applied to collect empirical data directly from respondents using a structured questionnaire.

The population in this study consists of all employees of PT Sarana Bintang Abadi Tex who are involved in the company's operational activities. This population is chosen due to its direct relevance to the implementation of digital transformation in the company's HR management system. The sampling technique used is probability sampling with a simple random sampling approach, ensuring that each member of the population has an equal chance of being selected as a respondent. This method is intended to reduce bias and improve data representativeness. The sample size is determined using the Slovin formula with a 5% margin of error.

The research instrument is a closed-ended questionnaire using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire is developed based on indicators of digital transformation and employee management effectiveness derived from relevant previous studies. Digital transformation is measured through indicators such as digital technology usage, information system effectiveness, work automation, data accessibility, and technology integration in HRM activities. Meanwhile, employee management effectiveness is measured through work efficiency, organizational communication quality, performance supervision, employee coordination, and workforce productivity.

Before being used in the main study, the instrument is tested for validity and reliability. Validity testing uses Pearson Product Moment correlation to assess the accuracy of each questionnaire item in measuring the research variables. An item is considered valid if the correlation coefficient exceeds the r-table value at a 0.05 significance level. Reliability testing is conducted using Cronbach's Alpha, where an instrument is considered reliable if the Alpha value is greater than 0.70, indicating strong internal consistency.

Data collection is carried out directly by distributing questionnaires to respondents at PT Sarana Bintang Abadi Tex during the research period. In addition, observation and documentation techniques are also used to support primary data. Observation is conducted to understand the actual implementation of digital transformation in the workplace, while documentation is used to obtain relevant company records and administrative data.

Data analysis is performed using the Statistical Package for the Social Sciences (SPSS). The analysis begins with descriptive statistics to describe respondent characteristics and response distributions. Classical assumption tests are then conducted, including normality, multicollinearity, and heteroscedasticity tests to ensure the data meets regression requirements. Hypothesis testing is carried out using simple linear regression analysis to examine the effect of digital transformation on employee management effectiveness. A t-test is also used to assess the partial significance of the independent variable at a 5% significance level (0.05).

The scope of this study is limited to examining the influence of digital transformation on employee management effectiveness in the context of modern HRM at PT Sarana Bintang Abadi Tex. Therefore, the findings cannot be fully generalized to all industrial sectors due to differences in organizational characteristics and operational environments. Moreover, this study uses a quantitative approach only, which does not deeply explore employees' subjective experiences regarding digital transformation. However, the method is expected to provide an objective

empirical overview of the relationship between digital transformation and HR management effectiveness.

RESULTS AND DISCUSSION

The findings of this study indicate that digital transformation has a positive and significant effect on employee management effectiveness in modern human resource management at PT Sarana Bintang Abadi Tex. Based on questionnaire data, the majority of employees rated the company's digital technology implementation positively, particularly in terms of information accessibility, internal communication speed, administrative efficiency, and digital-based performance monitoring systems. This indicates that digitalization has been relatively well integrated into daily operational activities.

Descriptive analysis shows that digital transformation implementation has been running effectively, reflected in the use of digital systems for employee administration, electronic attendance, employee data management, and interdepartmental coordination. These systems are perceived to reduce information delays, improve data accuracy, and accelerate decision-making processes within the organization.

Statistically, two main findings strengthen the analysis. First, SPSS results show variable X1 (digital transformation) at 0.498, X2 at 0.398, and Y (employee management effectiveness) at 0.339, indicating a positive relationship among variables. Second, simple linear regression results show a coefficient of 0.678 with a significance value of $0.000 < 0.05$ and a t-value of 7.842, which is significantly higher than the t-table value. This confirms that digital transformation has a positive and significant effect on employee management effectiveness, leading to the acceptance of the research hypothesis.

These findings imply that the more optimal the implementation of digital transformation, the higher the effectiveness of human resource management. Digital technology supports efficiency through automation of administrative tasks, improved data accuracy, and real-time employee performance monitoring. In addition, digital communication systems accelerate information flow and enhance interdepartmental responsiveness.

This finding is consistent with the perspective of Strohmeier, who emphasizes that electronic human resource management improves administrative efficiency and organizational coordination. It also aligns with the view of Vial, who argues that digital transformation integrates technology into organizational processes and reshapes structures and workplace value systems.

However, the study also identifies implementation challenges, particularly employee adaptation to digital systems. Some employees still struggle due to limited digital literacy, requiring continuous training and assistance. Additionally, reliance on digital systems introduces operational risks when technical failures or network disruptions occur.

From an implication perspective, the findings highlight that digital transformation depends not only on technology but also on human resource readiness and organizational support (Robbins & Judge, 2019). Therefore, companies need to strengthen digitalization strategies through continuous employee development, training programs, and periodic system evaluation (Zhang et

al., 2019).

Thus, digital transformation functions not merely as an operational tool but as a strategic element in enhancing employee management effectiveness at PT Sarana Bintang Abadi Tex. Nevertheless, the study is limited to a single company, restricting generalizability. Future research is recommended to adopt broader approaches such as mixed methods to gain deeper insights into HR digital transformation dynamics.

CONCLUSION

Digital transformation at PT Sarana Bintang Abadi Tex has significantly improved employee management effectiveness, with digital systems streamlining administration, accelerating communication, and enabling precise performance monitoring. Empirical findings confirm a positive and significant relationship, with a regression coefficient of 0.678, significance of 0.000, and t-value of 7.842 exceeding t-table, accepting the research hypothesis. Digitalization has evolved from a technical tool into a strategic pillar of HR governance, supporting existing literature while enriching empirical studies in Indonesia's textile sector. However, effectiveness depends not only on technology but also on human capital readiness, including employee adaptability, digital literacy, and organizational support. Therefore, companies must strengthen digital strategies through both technological infrastructure and continuous capability development. Based on these findings, several recommendations are proposed. PT Sarana Bintang Abadi Tex should continuously evaluate and update digital HR systems, provide regular digital literacy training, and establish a dedicated digital transformation team, while also developing a change management framework to facilitate employee adaptation. Other manufacturing companies can use this study as a reference for adopting digital HR systems, emphasizing the integration of technology with human capital development. Policymakers and industry associations should support HR digitalization through training programs, infrastructure development, and regulatory frameworks encouraging technology adoption. Future researchers should expand the scope to multiple companies or industries, incorporate qualitative methods, examine moderating or mediating variables, and conduct longitudinal studies. In conclusion, digital transformation is a multidimensional instrument that enhances productivity while fostering an adaptive, human-centered, and sustainable HR ecosystem, representing not merely a technological shift but a strategic imperative for reshaping HR quality amid increasingly complex industrial challenges.

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