

The role of human resource management in facing technological disruption

Peran manajemen sumber daya manusia dalam menghadapi disrupsi teknologi

¹Eloh Bahiroh, ²Indra Gunadi

^{1,2}Universitas Sultan Ageng Tirtayasa

*¹elohbahiroh@untirta.ac.id, ²5551200185@untirta.ac.id

*Corresponding Author

ABSTRACT

Technological changes in the workplace have led to profound transformations in organizational dynamics and interactions between employees and technology. This article presents an overview of the impact of technology on the workplace and the resistance management strategies implemented in dealing with these changes. This research outlines the broad impacts of technological change, from changes in work processes to organizational structure and employee well-being. In this context, employee resistance to change is a major concern, with factors such as fear, absenteeism, and perceptions of injustice influencing the level of resistance. This article also highlights the key role of human resource management (HRM) in managing resistance, emphasizing the importance of effective communication, employee engagement, and the implementation of HRM technologies that facilitate the communication process. Through a deeper understanding of these dynamics, organizations can develop more effective strategies for managing technological change and reducing employee resistance.

Keywords: Technology in the Workplace, Resistance Management, Human Resource Management, Organizational Transformation, Organizational Communication.

ABSTRAK

Perubahan teknologi di tempat kerja telah menyebabkan transformasi mendalam dalam dinamika organisasi dan interaksi antara karyawan dengan teknologi. Artikel ini menyajikan tinjauan tentang pengaruh teknologi terhadap tempat kerja dan strategi manajemen resistensi yang diterapkan dalam menghadapi perubahan tersebut. Penelitian ini menguraikan dampak luas perubahan teknologi, mulai dari perubahan dalam proses kerja hingga struktur organisasi dan kesejahteraan karyawan. Dalam konteks ini, resistensi karyawan terhadap perubahan menjadi perhatian utama, dengan faktor-faktor seperti ketakutan, ketidakhadaman, dan persepsi ketidakadilan yang mempengaruhi tingkat resistensi. Artikel ini juga menyoroti peran kunci manajemen sumber daya manusia (HRM) dalam mengelola resistensi, dengan menekankan pentingnya komunikasi yang efektif, keterlibatan karyawan, dan penerapan teknologi HRM yang memfasilitasi proses komunikasi. Melalui pemahaman yang lebih dalam tentang dinamika ini, organisasi dapat mengembangkan strategi yang lebih efektif dalam mengelola perubahan teknologi dan mengurangi resistensi karyawan.

Kata Kunci: Teknologi di Tempat Kerja, Manajemen Resistensi, Manajemen Sumber Daya Manusia, Transformasi Organisasi, Komunikasi Organisasi.

1. Introduction

Technological disruption has emerged as a transformative force reshaping the landscape of modern workplaces. Its impact, as extensively documented by researchers (Moats, 2021; Mičić et al., 2022; Raković et al., 2022), extends far beyond mere changes in tasks, permeating the very fabric of traditional work processes and structures.

Embracing digital transformation, while undoubtedly promising, presents organizations with a myriad of challenges. The need to adapt to new technologies often comes hand in hand with concerns about potential negative repercussions on worker satisfaction, stemming from increased technological stress. The intricate interplay between technology and workplace dynamics, as highlighted by (Showalter et al., 2022; Yu et al., 2023; Lee et al., 2009), underscores the multifaceted nature of this disruption. From altering learning practices to restructuring organizational frameworks, technology's influence reverberates across every aspect of contemporary work environments.

The onset of the COVID-19 pandemic has acted as a catalyst, hastening the pace of technological adoption within workplaces. With remote work becoming the norm and technology serving as the backbone of business continuity strategies (Beaver & Baker, 2021), organizations have found themselves thrust into an era of unprecedented change. This shift has underscored not only the importance of digital transformation but also the necessity for workplaces to cultivate agility and resilience in the face of uncertainty (Holbeche, 2019). In essence, the pandemic has served as a wake-up call, compelling organizations to reimagine not only how they operate but also the very essence of their workplace culture.

Employee resistance to technological change is a critical aspect that can significantly impact organizational change initiatives. Research has shown that employees' resistance to change is a key factor in organizational transformation projects (Meier et al., 2013). This resistance can stem from various factors such as fear of loss of control, feelings of insecurity, fear of inability to implement change, and fear of increased workload (Elgohary & Abdelazyz, 2020). Additionally, employees' disparate motives, interests, and needs can make reducing resistance to change challenging (Furst & Cable, 2008).

Leadership plays a crucial role in influencing employees' reactions to change. Studies have indicated that employees' dispositional resistance can be associated with their attitude towards organizational restructuring, highlighting the impact of leadership styles on managing resistance (Oreg & Berson, 2011). Authentic leadership has been identified as an important antecedent to employee resistance to change, with perceived uncertainty and uncertainty avoidance playing mediating and moderating roles, respectively (Zhu, 2023). Furthermore, transformational leadership has been linked to mitigating resistance to change by considering contextual and individual factors (Sánchez et al., 2022).

Employee perceptions of justice, opportunities for engagement, and the provision of timely and accurate information have been found to alleviate or circumvent resistance to change (Georgalis et al., 2014). Moreover, studies have shown that employee openness and resistance to change mediate the association between technological turbulence and employee resilience, emphasizing the importance of addressing resistance in technologically turbulent environments (Senbeto & Hon, 2021).

Effective communication and resistance management play crucial roles in the successful adoption of technology. Research has shown that both ease of use and effectiveness significantly influence user preferences when selecting communication technologies (Davis, 1989). Moreover, managerial support is identified as a key factor in moderating or mitigating user resistance to technology adoption (Moraes et al., 2022). Resistance to change is highlighted as a vital factor in technology adoption, as it is often a primary reason for technology failures (Sargent et al., 2012). This resistance can manifest in various ways, from simple rejection to strong opposition, emphasizing the importance of understanding and addressing behavioral resistance in employees (Pambudi, 2021).

Managerial behavior has been consistently emphasized in the adoption of technology, with studies underscoring its significance in the adoption process (Gagnon et al., 2000). Additionally, top management support is proposed as a mediator between technological and organizational factors in the adoption of big data analytics (Maroufkhani et al., 2022). Real-time

communication is also noted to play a critical role in the adoption of technology in advanced agriculture (Zengeya et al., 2021).

Furthermore, the importance of compatibility among technology components and the role of farmers' expertise are highlighted in the adoption of precision agriculture technology, emphasizing the need for policies and initiatives to support adoption (Aubert et al., 2012). Additionally, the impact of insurance generosity, regulation, and market structure on technology adoption in hospitals is noted, indicating the broader factors influencing adoption decisions (Mas & Seinfeld, 2008).

2. Research Methods

The research method used in this study is a Systematic Literature Review (SLR) approach which aims to investigate the role of human resource management (HRM) in dealing with technological disruption in the workplace, especially in the context of how HR can effectively communicate and manage employee resistance to change. driven by technology. Reference sources will be searched through leading international databases such as Scopus, Web of Science, and PubMed, using a number of keywords covering concepts such as "human resource management", "technological disruption", "employee resistance", "communication", and "organizational transformation". Articles to be included in this review must meet the inclusion criteria which include relevance to the research topic, discussion of the role of HRM in managing resistance to technological change in the workplace, as well as a focus on organizational communication, change management, and HRM strategies related to technology. Articles that are not relevant or not available in full, as well as those not published in verified scientific journals or conference proceedings, will be excluded from this study. By focusing on the research question "How can HR effectively communicate and manage employee resistance to technology-driven change in the workplace?", this research will focus on identifying effective communication and management strategies used by HR to overcome employee resistance to technological change. at the workplace.

3. Results and Discussions

3.1 Basic concepts

3.1.1 Technological change in the workplace

Technological change in the workplace is a multifaceted phenomenon that impacts various aspects of work environments and employee experiences. Research indicates that factors such as technology adoption, attitudes towards technological change, skills development, workplace resilience, and well-being play crucial roles in facilitating effective digital transformation among employees (Trenerry et al., 2021). Moreover, the introduction of new technologies can lead to changes in job requirements, creating a demand for new skills and abilities to thrive in the evolving workplace (Chuang, 2020). While there are concerns about the potential negative impacts of technological advancements on job security and mental health, studies suggest that the total amount of work available has not decreased with the introduction of computer-based technologies (Borland & Coelli, 2017; Johnson et al., 2020). However, it is essential to consider employees' perceptions of technological change, as these perceptions can significantly influence their mental well-being and job satisfaction (Johnson et al., 2020).

The integration of advanced technologies in the workplace has also been linked to improvements in work processes and organizational efficiency (Lim, 2002). Additionally, the use of technology has expanded the boundaries of work environments, allowing for remote working arrangements and changing traditional notions of work (Donnelly & Johns, 2020). As workplaces evolve due to technological advancements, there is a growing need for employees to adapt to new technologies and develop digital literacy skills to remain competitive in the job

market (Mallik et al., 2022). Overall, the impact of technological change in the workplace extends beyond the adoption of new tools and processes; it influences organizational structures, employee well-being, and the nature of work itself. As technology continues to advance, organizations must prioritize training and support for employees to navigate these changes successfully and ensure a positive work environment (Trenerry et al., 2021; Chuang, 2020; Lim, 2002).

3.1.2 Employee resistance to change

Employee resistance to change is a common challenge faced by organizations undergoing transformation. This resistance is often rooted in factors such as fear, misunderstanding, lack of rewards, conflicts, and uncertainty. Employees may resist change due to concerns about loss of pay, status, or comfort. Research indicates that resistance to change involves cognitive, affective, and behavioral components, with employees' feelings and behaviors towards change potentially differing from organizational expectations (Srivastava & Agrawal, 2020; Mdletye et al., 2014; Bovey & Hede, 2001; Furst & Cable, 2008).

Effective communication plays a crucial role in mitigating resistance, as providing high-quality information about change initiatives can reduce employees' resistance levels (Paulikas & Paulikienė, 2022). Additionally, factors like training satisfaction, benefits, incentives, and authentic leadership can influence the extent of resistance displayed by employees (Owusu & Gregar, 2021; Zhu, 2023). Furthermore, the failure to acknowledge or reward employee input, manage change-related attitudes, and consider labor engagement can contribute to resistance (Rusmawati et al., 2021).

Organizational leaders must recognize the importance of managing and leading employees during change to ensure overall business success (Tamunomiebi & Akpan, 2021). Middle managers can act as change agents, but poor change management practices can exacerbate resistance (Buick et al., 2018). Employee well-being and perceptions of frequent change can also impact resistance levels (Rafferty & Jimmieson, 2016). Moreover, defense mechanisms and various managerial influence tactics can influence how employees respond to change initiatives (Stavros et al., 2016; Furst & Cable, 2008).

In conclusion, addressing employee resistance to change requires a multifaceted approach that involves effective communication, leadership, recognition of employee input, and consideration of employee well-being. By understanding the underlying reasons for resistance and implementing strategies to address them, organizations can navigate change more smoothly and increase the likelihood of successful transformation.

3.1.3 The role of HRM in communication and resistance management

Human Resource Management (HRM) is essential for communication and resistance management within organizations. Effective communication strategies are crucial for managing resistance to change (Baker, 2007). HRM practices focus on fostering employee cooperation and reducing resistance through communication and consultation (Bartram, 2011). Despite this, conflicts and resistance are common in HRM initiatives, underscoring the importance of effective communication strategies (Francis, 2006). Research has demonstrated that HRM practices such as organizational communication, empowerment, and employee development significantly impact employee commitment (Rubel et al., 2017). Line managers are key in implementing HRM practices, highlighting the significance of communication and consultation with them (Fu, 2019). Additionally, HRM practices aid in knowledge management within organizations, improving performance by facilitating the absorption, transfer, and creation of knowledge (Theriou & Chatzoglou, 2008).

Communication is a pivotal element in HRM success, aiding in the creation and management of shared HR messages, aligning HRM strategy with organizational objectives, and evaluating the compatibility between HRM practices and organizational performance (García-Carbonell et al., 2015). Employee perceptions of HRM system strength are closely associated with the communication climate, influencing affective commitment within the organization (Presbitero et al., 2021). The introduction of electronic HRM (e-HRM) has transformed communication processes within organizations, leading to cost reductions, faster communication, and improved interaction (Maphosa, 2021). Furthermore, HRM perceptions mediate the relationship between implemented HRM practices, satisfaction, and performance, with communication playing a moderating role (Hartog et al., 2012). However, biases in roles can result in diminished communication and respect for HRM professionals among top management teams (Sheehan et al., 2013).

In conclusion, HRM is crucial for communication and resistance management within organizations. Effective communication strategies are vital for implementing HRM practices, handling resistance to change, and promoting employee commitment. By emphasizing communication, HRM professionals can navigate resistance, enhance organizational performance, and cultivate a positive work environment.

3.2 HR Communication Strategy

3.2.1 Transparent and open communication

Transparent and open communication is a fundamental aspect of effective HR strategies. Research by Zainab et al. (2021) demonstrates that transformational leadership and transparent communication positively influence employee openness to change by fostering trust within the organization. Similarly, Basit & Siddiqui (2020) highlight the importance of authentic leadership and transparent communication in enhancing employee openness to change through building trust during organizational transitions. These studies underscore the significance of transparent communication in promoting employee trust and openness to change.

Moreover, Jiang & Luo (2018) discuss how transparent communication can enhance employee engagement by encouraging active participation in information sharing. This aligns with the idea that transparent communication is essential not only for conveying messages but also for engaging employees in organizational processes. Additionally, research by Arnold (2023) explores the importance of transparency in variable pay communication within organizations, indicating that openness about pay structures can impact employee perceptions and behaviors. In times of crisis, such as the COVID-19 pandemic, Rivera-Prieto et al. (2022) suggest that effective HR strategies, including clear communication practices, are vital for organizational turnaround. This further emphasizes the critical role of transparent communication in navigating challenging situations and maintaining stakeholder engagement.

Overall, these studies collectively emphasize that transparent and open communication is a fundamental component of successful HR strategies. By fostering trust, promoting engagement, and navigating organizational changes effectively, transparent communication plays a pivotal role in enhancing employee attitudes, behaviors, and organizational performance.

3.2.2 Involve employees in the decision-making process

To effectively involve employees in the decision-making process, organizations must consider various factors related to HR practices and communication strategies. Research by Nishii et al. (2008) demonstrates that employees may interpret HR practices differently,

impacting their attitudes and behaviors. This underscores the importance of how HR practices are perceived by the workforce in influencing employee involvement in decision-making. García-Carbonell et al. (2018) highlight the significance of cognitive skills in HR decision-makers for communicating HR strategies, emphasizing the need for a balance of creative and rational skills.

Additionally, Conte & Siano (2023) emphasize the importance of data-driven HR and talent management in communication strategies, pointing out the potential of technologies like big data to improve employee relations. Employee participation in decision-making, as discussed by (Nwosu et al., 2020), is a crucial factor that can positively affect productivity. This is consistent with the findings of (Hosani et al., 2020), which suggest that employee communication strategies are vital in reducing feelings of alienation during organizational changes. Furthermore, Budhwar et al. (2009) stress the importance of involving employees in the change process, particularly during mergers and acquisitions, to achieve synergies and ensure successful integration. Effective communication, as highlighted by (Ribeiro et al., 2011), can have a positive impact on employees' behavior, underscoring the role of HR communication in organizational outcomes.

In conclusion, involving employees in decision-making necessitates a strategic approach to HR practices and communication. By understanding how employees perceive HR strategies, utilizing data-driven insights, and emphasizing the value of employee participation, organizations can enhance employee engagement, productivity, and overall organizational effectiveness.

3.2.3 Provide training and skills development

To enhance HR communication strategy through training and skills development, it is crucial to consider various aspects highlighted in the literature. HR analytics play a significant role in shaping training and development strategies (barbar et al., 2019). Effective communication skills are vital for managers, and it is recommended that HR staff assess and develop these skills through targeted communication skills appraisal and additional training (Bambacas & Patrickson, 2009). In nonprofit organizations, aligning HR practices with the organization's strategy, including training, is essential for flexibility and employee development (Akingbola, 2013). Training programs focusing on communication skills are crucial for health personnel to improve self-efficacy and patient relationships (Mata et al., 2019).

Moreover, skill-enhancing HR practices, including training, aim to equip employees with organization-specific skills for optimal performance (Domi & Domi, 2020). Designing communication skills programs, especially in medical education, should involve practical training in real environments with feedback mechanisms for improvement (Hazavehei et al., 2015). Effective communication systems, including training, contribute significantly to HR activities and competitive advantage in various sectors (Ahmed et al., 2021). Different HR management training approaches, such as e-learning and performance management, are essential for sustainable public service administration skills (Muhani, 2023).

Training programs are common in HR management practices and are effective in developing individuals' soft skills, such as empathetic communication, in organizations (Hindiarto et al., 2020). Evaluating and enhancing interpersonal communication skills among professionals through appropriate training strategies is crucial (Rishipathak, 2021). Communication skills training workshops and faculty development programs are essential for improving communication in healthcare settings (Brown et al., 2009; Bylund et al., 2008). Incorporating patient feedback and regular communication skills training programs can further enhance consultation skills in medical practice (Reinders et al., 2010).

In conclusion, a comprehensive HR communication strategy should integrate HR analytics, targeted communication skills appraisal, alignment with organizational strategy, practical training, and feedback mechanisms. Training programs focusing on communication skills are essential for various sectors, including healthcare, to improve employee performance, patient relationships, and overall organizational effectiveness.

3.2.4 Emphasize the benefits of technological change

Technological advancements, particularly in the realm of Artificial Intelligence (AI) and digital HR technologies, offer numerous benefits to organizations in enhancing their Human Resource (HR) practices. AI systems have the potential to revolutionize HR by streamlining administrative tasks, saving time and costs, and ultimately increasing productivity (Dwivedi et al., 2021; Hmoud & Várallyai, 2023). Incorporating technology in HR practices is crucial for organizations to adapt to the changing landscape and improve efficiency (Silva, 2023). Moreover, the use of new information technology has been shown to enhance HR efficiency and overall enterprise performance (Törstena et al., 2019).

Digital HR technologies, such as e-HRM and HR analytics, play a significant role in transforming HR practices and driving organizational performance. The adoption of ICT by HR departments to increase organizational effectiveness through e-HRM is a notable trend (Giri et al., 2019). Access to HR technology is identified as a key factor enabling HR analytics, which in turn impacts organizational performance positively (McCartney & Fu, 2022). Furthermore, the use of HR analytics can bridge the gap between HR practices and organizational performance, emphasizing the importance of leveraging technology in HR functions (McCartney & Fu, 2022). In the context of Industry 4.0 and digitalization, organizations are investing in technologies that integrate processes, machines, and employees into a network for data collection and analysis, leading to improved performance and strategic decision-making (Nagy et al., 2018). The role of technology in HR transformation is underscored by the need for HR professionals to adapt to technological changes and become change agents to drive sustainable competitive advantage (Widiputra & Arquisola, 2020).

Overall, the integration of technology in HR practices offers a pathway to enhance efficiency, improve decision-making, and drive organizational performance. Embracing technological advancements in HR can lead to significant benefits for organizations in terms of productivity, cost savings, and competitive advantage.

3.3 HR Resistance Management Strategy

3.3.1 Identify and address sources of resistance

Resistance to human resources (HR) initiatives within organizations can originate from various sources. One significant aspect is the challenge faced by HR managers in engaging employees with new strategies, as evidenced during the shift to remote work cultures amid the COVID-19 pandemic (Kumar & Kapoor, 2021). Additionally, inadequate change management practices can notably hinder HR development efforts, leading to heightened resistance to novel HR strategies (Aziri, 2019).

Furthermore, research emphasizes the significance of managerial commitment in HR practices and its influence on firm performance (Gong et al., 2009). This underscores that resistance to HR initiatives may also stem from a lack of commitment or alignment with organizational goals among managers. Moreover, it discusses how farmers often postpone altering their weed management programs until resistance has already emerged, indicating a reactive rather than proactive approach to managing resistance (Beckie, 2006). To address resistance to HR strategies effectively, it is essential for HR managers to actively engage in employee involvement, particularly in the context of a remote workforce (Swaroop & Sharma, 2022). By promoting communication and support among HR professionals, line managers, and

other stakeholders, organizations can alleviate resistance to change and improve the efficacy of HR initiatives (Howe-Walsh & Torka, 2017).

In conclusion, sources of resistance to HR initiatives can vary from managerial commitment and change management practices to reactive approaches to organizational challenges. By comprehending these sources of resistance and implementing efficient strategies to tackle them, HR managers can enhance the success of HR programs and initiatives within their organizations.

3.3.2 Support and motivate employees

To effectively support and motivate employees, organizations can implement various HR practices that have been shown to positively impact employee motivation and performance. Purcell & Hutchinson (2006) emphasize the importance of front-line managers utilizing well-designed HR practices to motivate and reward employees, address performance issues, and meet worker needs (Purcell & Hutchinson, 2006). McLean and Collins (2011) highlight that the choice of HR systems can either motivate or demotivate employees, indicating the critical role HR practices play in employee motivation (McClean & Collins, 2011; . Mamman et al., 2019) found that HR practitioners significantly contribute to motivating employees, enhancing their advocacy for the organization (Mamman et al., 2019; . Umer et al., 2016) discovered that factors such as compensation, empowerment, fair job appraisal, recognition, and job satisfaction have a positive relationship with employee motivation, emphasizing the impact of HR policies on motivation (Umer et al., 2016).

Furthermore, Gabriel et al. (2016) suggest that motivation-enhancing HR practices like performance management and incentives can boost employee motivation, while opportunity-enhancing practices such as employee involvement and job design empower employees to maximize performance (Gabriel et al., 2016; . Ahammad et al., 2015) support the idea that motivation-enhancing HR practices, including financial incentives, can lead to positive employee attitudes and behaviors (Ahammad et al., 2015). Additionally, Widarmanti et al. (2022) found that strong organizational support and effective HR practices can increase employee motivation and engagement (Widarmanti et al., 2022).

In conclusion, by implementing a combination of motivation-enhancing and opportunity-enhancing HR practices, organizations can effectively support and motivate their employees. These practices not only enhance employee motivation but also contribute to improved performance, engagement, and overall organizational success.

3.3.3 Building an adaptive and innovative culture

To establish an adaptive and innovative culture within an organization, it is crucial to prioritize fostering flexibility, adaptability, and innovation through the organizational culture. Research highlights the significance of organizations being flexible, adaptive, entrepreneurial, and innovative to meet the evolving demands of the environment (Sarros et al., 2008). This is in line with the findings of , who emphasizes that an adaptive culture enables managers to progress, motivates them effectively, and focuses on quality and customer satisfaction (Bran, 2017).

Moreover, studies by Hurley & Hult (1998) and Büschgens et al. (2013) emphasize a positive correlation between innovativeness in the organizational culture and the capacity for adaptation and successful implementation of innovations. This suggests that promoting a culture that values innovation and external flexibility can lead to a higher level of successful innovation within the organization. Additionally, 's research indicates that specific cultural traits can predict organizational performance and effectiveness, highlighting the role of culture in the adaptation process of organizations (Denison & Mishra, 1995). This underscores the

significance of aligning the organizational culture with the goals of fostering adaptability and innovation.

In conclusion, by cultivating an organizational culture that prioritizes flexibility, adaptability, and innovation, organizations can create an environment conducive to continuous improvement and successful implementation of innovative ideas. This synthesis of research underscores the critical role of organizational culture in driving adaptive and innovative practices within an organization.

4. Conclusions

Technological changes in the work environment not only affect work processes and skill requirements, but also change organizational structures, employee well-being, and even the nature of work itself. To manage these changes successfully, organizations need to provide support and training to employees to adapt to these changes. The resistance that employees often experience towards change usually arises from fear, absence, perceptions of injustice and uncertainty. To reduce this resistance, effective communication is key by providing clear information about the goals and benefits of the change initiative. Additionally, factors such as strong leadership, adequate incentives, and recognition of employee contributions can also influence resistance levels.

HRM's important role in managing this communication and resistance includes developing effective communication strategies, implementing HRM practices that support employee engagement and commitment, and utilizing technology such as e-HRM to improve communication processes. Transparent and open communication, involving employees in decision making, providing training and skills development, and emphasizing the benefits of technological change are effective strategies in resistance management. To overcome resistance to HRM initiatives, organizations need to identify and address the root causes of resistance, provide support and motivation to employees, and build an adaptive and innovative organizational culture. Thus, it can increase the success of HRM programs and initiatives and encourage positive change in the organization.

Although this research provides valuable insights into the influence of technology on workplace change and effective resistance management strategies, there are several limitations that need to be noted. First, this study may be limited in geographic and industry coverage, so the generalizability of the findings may need to be limited. Additionally, due to the focus on existing literature, it is possible that some important aspects of the phenomenon may not have been explored in depth. Additionally, the complex and dynamic nature of the relationship between technology, communication, and resistance in the workplace may be difficult to fully understand through this research. Lastly, this research may also be affected by research bias, such as article selection or data interpretation, which may affect the validity of the resulting findings. Therefore, it is important to consider these limitations when interpreting and applying the results of this study in practical and academic contexts.

The next research agenda could be focused on several aspects that still need to be explored further regarding the influence of technology in the workplace and resistance management strategies. First, research can explore the impact of emerging technologies, such as artificial intelligence, automation, and robotics, on workplace dynamics and emerging patterns of resistance. Further, research could involve broader surveys or case studies to deepen understanding of the factors that influence employee resistance to technological change, including organizational culture, leadership support, and process fairness. Additionally, further research could test the effectiveness of different resistance management strategies in different workplace contexts, taking into account differences in industry, organizational size, and employee experience levels. Finally, research could lead to the development of practical frameworks or guidelines for organizations to effectively manage resistance to technological change, taking into account the diversity of different organizational contexts and needs. By

deepening understanding and identifying best practices in resistance management, future research is expected to make a significant contribution to the development of human resource management theory and practice as well as overall organizational development.

5. References

- Arnold, A. (2023). Variable pay transparency in organizations: when are organizations more likely to open up about pay?. *Compensation & Benefits Review*, 56(1), 16-36. <https://doi.org/10.1177/08863687231200802>
- Aubert, B., Schröder, A., & Grimaudo, J. (2012). It as enabler of sustainable farming: an empirical analysis of farmers' adoption decision of precision agriculture technology. *Decision Support Systems*, 54(1), 510-520. <https://doi.org/10.1016/j.dss.2012.07.002>
- Aziri, J. (2019). Factors undermining the effectiveness development of human resources in organizations. *Texila International Journal of Management*, 5(2), 192-196. <https://doi.org/10.21522/tijmg.2015.05.02.art019>
- Baker, S. (2007). Managing resistance to change., 23-33. <https://doi.org/10.4324/9780080524887-11>
- Bartram, T. (2011). Employee management systems and organizational contexts: a population ecology approach. *Management Research Review*, 34(6), 663-677. <https://doi.org/10.1108/01409171111136194>
- Basit, A. and Siddiqui, D. (2020). Authentic leadership and openness to change in pakistani service industry: the mediating role of trust and transparent communication. *International Journal of Human Resource Studies*, 10(3), 291. <https://doi.org/10.5296/ijhrs.v10i3.17318>
- Beaver, Z. and Baker, R. (2021). Impact of crisis on culture. *Performance Improvement*, 60(5), 10-19. <https://doi.org/10.1002/pfi.21985>
- Beckie, H. (2006). Herbicide-resistant weeds: management tactics and practices. *Weed Technology*, 20(3), 793-814. <https://doi.org/10.1614/wt-05-084r1.1>
- Borland, J. and Coelli, M. (2017). Are robots taking our jobs?. *Australian Economic Review*, 50(4), 377-397. <https://doi.org/10.1111/1467-8462.12245>
- Bran, C. (2017). The impact of investments on net profit, as an effect of managerial flexibility and adaptive organizational culture.. <https://doi.org/10.18662/lumproc.09>
- Budhwar, P., Varma, A., & Katou, A. (2009). The role of hr in cross-border mergers and acquisitions: the case of indian pharmaceutical firms. *Multinational Business Review*, 17(2), 89-110. <https://doi.org/10.1108/1525383x200900011>
- Büschgens, T., Bausch, A., & Balkin, D. (2013). Organizational culture and innovation: a meta-analytic review. *Journal of Product Innovation Management*, 30(4), 763-781. <https://doi.org/10.1111/jpim.12021>
- Chuang, S. (2020). An empirical study of displaceable job skills in the age of robots. *European Journal of Training and Development*, 45(6/7), 617-632. <https://doi.org/10.1108/ejtd-10-2019-0183>
- Conte, F. and Siano, A. (2023). Data-driven human resource and data-driven talent management in internal and recruitment communication strategies: an empirical survey on italian firms and insights for european context. *Corporate Communications an International Journal*, 28(4), 618-637. <https://doi.org/10.1108/ccij-02-2022-0012>
- Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Mis Quarterly*, 13(3), 319. <https://doi.org/10.2307/249008>
- Denison, D. and Mishra, A. (1995). Toward a theory of organizational culture and effectiveness. *Organization Science*, 6(2), 204-223. <https://doi.org/10.1287/orsc.6.2.204>

- Donnelly, R. and Johns, J. (2020). Recontextualising remote working and its hrm in the digital economy: an integrated framework for theory and practice. *The International Journal of Human Resource Management*, 32(1), 84-105. <https://doi.org/10.1080/09585192.2020.1737834>
- Dwivedi, Y., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., ... & Williams, M. (2021). Artificial intelligence (ai): multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 57, 101994. <https://doi.org/10.1016/j.ijinfomgt.2019.08.002>
- Elgohary, E. and Abdelazyz, R. (2020). The impact of employees' resistance to change on implementing e-government systems: an empirical study in egypt. *The Electronic Journal of Information Systems in Developing Countries*, 86(6). <https://doi.org/10.1002/isd2.12139>
- Francis, H. (2006). A critical discourse perspective on managers' experiences of hrm. *Qualitative Research in Organizations and Management an International Journal*, 1(2), 65-82. <https://doi.org/10.1108/17465640610686343>
- Fu, N. (2019). Developing a strong hrm system: the role of line managers. *Annals of Social Sciences & Management Studies*, 2(5). <https://doi.org/10.19080/asm.2019.02.555599>
- Furst, S. and Cable, D. (2008). Employee resistance to organizational change: managerial influence tactics and leader-member exchange.. *Journal of Applied Psychology*, 93(2), 453-462. <https://doi.org/10.1037/0021-9010.93.2.453>
- Gagnon, Y., Sicotte, H., & Posada, E. (2000). Impact of sme manager's behavior on the adoption of technology. *Entrepreneurship Theory and Practice*, 25(2), 43-58. <https://doi.org/10.1177/104225870002500203>
- García-Carbonell, N., Alcázar, F., & Gardey, G. (2015). Is double fit a sufficient condition for shrm success?. *International Journal of Organizational Analysis*, 23(2), 264-284. <https://doi.org/10.1108/ijoa-01-2013-0638>
- García-Carbonell, N., Alcázar, F., & Gardey, G. (2018). Determinants of building consistent human resources management systems. *International Journal of Manpower*, 39(3), 354-377. <https://doi.org/10.1108/ijm-06-2016-0140>
- Georgalis, J., Samaratunge, R., Kimberley, N., & Lu, Y. (2014). Change process characteristics and resistance to organisational change: the role of employee perceptions of justice. *Australian Journal of Management*, 40(1), 89-113. <https://doi.org/10.1177/0312896214526212>
- Giri, A., Paul, R., Chatterjee, S., Bag, M., & Aich, A. (2019). Intention to adopt e-hrm (electronic - human resource management) in indian manufacturing industry: an empirical study using technology acceptance model (tam). *International Journal of Management*, 10(4). <https://doi.org/10.34218/ijm.10.4.2019.020>
- Gong, Y., Law, K., Chang, S., & Xin, K. (2009). Human resources management and firm performance: the differential role of managerial affective and continuance commitment.. *Journal of Applied Psychology*, 94(1), 263-275. <https://doi.org/10.1037/a0013116>
- Hartog, D., Boon, C., Verburg, R., & Croon, M. (2012). Hrm, communication, satisfaction, and perceived performance. *Journal of Management*, 39(6), 1637-1665. <https://doi.org/10.1177/0149206312440118>
- Hmoud, B. and Várallyai, L. (2023). Role of artificial intelligence in human resource management in the middle east countries. *Kne Social Sciences*. <https://doi.org/10.18502/kss.v8i1.12663>

- Holbeche, L. (2019). Designing sustainably agile and resilient organizations. *Behavioral Science*, 36(5), 668-677. <https://doi.org/10.1002/sres.2624>
- Hosani, Y., Jabeen, F., Paul, J., & Stachowicz-Stanusch, A. (2020). Antecedents of employee alienation and its impact on individual work performance during post-merger integration (pmi). *Journal of Organizational Change Management*, 33(6), 1085-1110. <https://doi.org/10.1108/jocm-03-2020-0085>
- Howe-Walsh, L. and Torka, N. (2017). Repatriation and (perceived) organisational support (pos). *Journal of Global Mobility the Home of Expatriate Management Research*, 5(1), 60-77. <https://doi.org/10.1108/jgm-09-2016-0040>
- Hurley, R. and Hult, G. (1998). Innovation, market orientation, and organizational learning: an integration and empirical examination. *Journal of Marketing*, 62(3), 42-54. <https://doi.org/10.1177/002224299806200303>
- Jiang, H. and Luo, Y. (2018). Crafting employee trust: from authenticity, transparency to engagement. *Journal of Communication Management*, 22(2), 138-160. <https://doi.org/10.1108/jcom-07-2016-0055>
- Johnson, A., Dey, S., Nguyen, H., Groth, M., Joyce, S., Tan, L., ... & Harvey, S. (2020). A review and agenda for examining how technology-driven changes at work will impact workplace mental health and employee well-being. *Australian Journal of Management*, 45(3), 402-424. <https://doi.org/10.1177/0312896220922292>
- Kumar, N. and Kapoor, S. (2021). Impact of covid-19 on the future of hr in india's service sector. *Revista Gestão Inovação E Tecnologias*, 11(4), 4498-4507. <https://doi.org/10.47059/revistageintec.v11i4.2476>
- Lee, Y., Chu, P., & Tseng, H. (2009). Exploring the relationships between information technology adoption and business process reengineering. *Journal of Management & Organization*, 15(2), 170-185. <https://doi.org/10.5172/jmo.837.15.2.170>
- Lim, V. (2002). The it way of loafing on the job: cyberloafing, neutralizing and organizational justice. *Journal of Organizational Behavior*, 23(5), 675-694. <https://doi.org/10.1002/job.161>
- Mallik, A., Liu, D., & Kapila, V. (2022). Analyzing the outcomes of a robotics workshop on the self-efficacy, familiarity, and content knowledge of participants and examining their designs for end-of-year robotics contests. *Education and Information Technologies*, 28(6), 7225-7264. <https://doi.org/10.1007/s10639-022-11400-1>
- Maphosa, V. (2021). The adoption of e-hrm: a view of a telecommunications company in zimbabwe. *Advances in Research*, 1-13. <https://doi.org/10.9734/air/2021/v22i630315>
- Maroufkhani, P., Iranmanesh, M., & Ghobakhloo, M. (2022). Determinants of big data analytics adoption in small and medium-sized enterprises (smes). *Industrial Management & Data Systems*, 123(1), 278-301. <https://doi.org/10.1108/imds-11-2021-0695>
- Mas, N. and Seinfeld, J. (2008). Is managed care restraining the adoption of technology by hospitals?. *Journal of Health Economics*, 27(4), 1026-1045. <https://doi.org/10.1016/j.jhealeco.2008.02.009>
- McCartney, S. and Fu, N. (2022). Bridging the gap: why, how and when hr analytics can impact organizational performance. *Management Decision*, 60(13), 25-47. <https://doi.org/10.1108/md-12-2020-1581>
- Meier, R., Ben, E., & Schuppan, T. (2013). Ict-enabled public sector organisational transformation: factors constituting resistance to change. *Information Polity*, 18(4), 315-329. <https://doi.org/10.3233/ip-130315>

- Mićić, L., Khamooshi, H., Raković, L., & Matkovic, P. (2022). Defining the digital workplace: a systematic literature review. *Strategic Management*, 27(2), 29-43. <https://doi.org/10.5937/straman2200010m>
- Moats, J. (2021). Preparing for the future of work and the development of expertise., 197-224. https://doi.org/10.1007/978-3-030-64371-3_10
- Moraes, G., Pelegrini, G., Marchi, L., Pinheiro, G., & Cappellozza, A. (2022). Antecedents of big data analytics adoption: an analysis with future managers in a developing country. *The Bottom Line Managing Library Finances*, 35(2/3), 73-89. <https://doi.org/10.1108/bl-06-2021-0068>
- Nagy, J., Oláh, J., Erdei, E., Máté, D., & Popp, J. (2018). The role and impact of industry 4.0 and the internet of things on the business strategy of the value chain—the case of hungary. *Sustainability*, 10(10), 3491. <https://doi.org/10.3390/su10103491>
- Nishii, L., Lepak, D., & Schneider, B. (2008). Employee attributions of the “why” of hr practices: their effects on employee attitudes and behaviors, and customer satisfaction. *Personnel Psychology*, 61(3), 503-545. <https://doi.org/10.1111/j.1744-6570.2008.00121.x>
- Nwosu, H., Okoh, M., & Goodluck, A. (2020). Employees’ participation in decision making and employees’ productivity. *International Journal of Business and Applied Social Science*, 63-76. <https://doi.org/10.33642/ijbass.v6n3p6>
- Oreg, S. and Berson, Y. (2011). Leadership and employees’ reactions to change: the role of leaders’ personal attributes and transformational leadership style. *Personnel Psychology*, 64(3), 627-659. <https://doi.org/10.1111/j.1744-6570.2011.01221.x>
- Pambudi, P. (2021). Analysis of user resistance towards adopting e-office: a case from a governmental organization. *Indonesian Scholars Scientific Summit Taiwan Proceeding*, 3, 1-7. <https://doi.org/10.52162/3.2021105>
- Presbitero, A., Teng-Calleja, M., & Farndale, E. (2021). Employee perceptions of hrm system strength: examining outcome and boundary conditions among hr and non-hr employees. *Personnel Review*, 51(9), 2142-2161. <https://doi.org/10.1108/pr-12-2020-0878>
- Raković, L., Sakal, M., & Matkovic, P. (2022). Digital workplace: advantages and challenges. *Anali Ekonomskog Fakulteta U Subotici*, (47), 65-78. <https://doi.org/10.5937/anebsub2247065r>
- Ribeiro, T., Coelho, J., & Gomes, J. (2011). Hrm strength, situation strength and improvisation behavior. *Management Research the Journal of the Iberoamerican Academy of Management*, 9(2), 118-136. <https://doi.org/10.1108/1536-541111155245>
- Rivera-Prieto, J., Santana, M., & Lopez-Cabrales, A. (2022). Turnaround and human resource strategies during the covid-19 crisis. *BRQ Business Research Quarterly*, 234094442211200. <https://doi.org/10.1177/23409444221120053>
- Rubel, M., Rimi, N., & Walters, T. (2017). Roles of emerging hrm and employee commitment: evidence from the banking industry of bangladesh. *Global Business Review*, 18(4), 876-894. <https://doi.org/10.1177/0972150917692223>
- Sánchez, I., Sitú, M., & Murillo, L. (2022). Breaking down walls, building bridges: the importance of transformational leadership considering contextual and individual factors in resistance to change. *International Journal of Organizational Analysis*, 31(7), 3295-3314. <https://doi.org/10.1108/ijoa-04-2022-3238>
- Sargent, K., Hyland, P., & Sawang, S. (2012). Factors influencing the adoption of information technology in a construction business. *Construction Economics and Building*, 12(2), 86. <https://doi.org/10.5130/ajceb.v12i2.2448>

- Sarros, J., Cooper, B., & Santora, J. (2008). Building a climate for innovation through transformational leadership and organizational culture. *Journal of Leadership & Organizational Studies*, 15(2), 145-158. <https://doi.org/10.1177/1548051808324100>
- Senbeto, D. and Hon, A. (2021). Development of employees' resilience in technologically turbulent environments: probing the mechanisms of consonance–dissonance and crisis leadership. *International Journal of Contemporary Hospitality Management*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/ijchm-11-2020-1263>
- Sheehan, C., Cieri, H., Greenwood, M., & Buren, H. (2013). Hr professional role tensions: perceptions and responses of the top management team. *Human Resource Management*, 53(1), 115-130. <https://doi.org/10.1002/hrm.21574>
- Showalter, K., Maguire-Jack, K., & McCloskey, R. (2022). Mothers' resilience: experiences of intimate partner violence survivors at work. *Children*, 9(3), 373. <https://doi.org/10.3390/children9030373>
- Silva, A. (2023). The impact of technological advancements on hr practices and leadership in brazil. *Journal of Human Resource and Leadership*, 8(1), 46-54. <https://doi.org/10.47604/jhrl.1899>
- Swaroop, S. and Sharma, L. (2022). Employee engagement in the era of remote workforce: role of human resource managers. *CM*, (23), 619-628. <https://doi.org/10.18137/cardiometry.2022.23.619628>
- Tërstena, A., Goga, A., & Jashari, B. (2019). Improving the efficiency of human resources with the use of new technologies and reorganization process. *International Journal of Research in Business and Social Science* (2147-4478), 9(1), 31-38. <https://doi.org/10.20525/ijrbs.v9i1.606>
- Theriou, G. and Chatzoglou, P. (2008). Enhancing performance through best hr practices, organizational learning and knowledge management. *European Business Review*, 20(3), 185-207. <https://doi.org/10.1108/09555340810871400>
- Trenerry, B., Chng, S., Wang, Y., Suhaila, Z., Lim, S., Lü, H., ... & Oh, P. (2021). Preparing workplaces for digital transformation: an integrative review and framework of multi-level factors. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.620766>
- Widiputra, A. and Arquisola, M. (2020). Hr roles in addressing the challenges of industry 4.0: indonesian employees cross-industry perceptions. *International Journal of Business Studies*, 4(1), 8-20. <https://doi.org/10.32924/ijbs.v4i1.108>
- Yu, W., He, J., & Gong, Y. (2023). A systematic review of information technology in workplace learning. *Psychology in the Schools*, 60(12), 4904-4929. <https://doi.org/10.1002/pits.22901>
- Zainab, B., Akbar, W., & Siddiqui, F. (2021). Impact of transformational leadership and transparent communication on employee openness to change: mediating role of employee organization trust and moderated role of change-related self-efficacy. *Leadership & Organization Development Journal*, 43(1), 1-13. <https://doi.org/10.1108/lodj-08-2020-0355>
- Zengeya, T., Sambo, P., & Mabika, N. (2021). The adoption of the internet of things for smart agriculture in zimbabwe. <https://doi.org/10.5121/csit.2021.111208>
- Zhu, Y. (2023). How and when does authentic leadership reduce employee resistance to change? an explanation from uncertainty management theory. *Leadership & Organization Development Journal*, 44(8), 969-993. <https://doi.org/10.1108/lodj-03-2023-0155>

