

HRM in Digital Transformation: Challenges and Opportunities in Adapting to Technological Change

Challenges in
Digital HRM
Transformation

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ABSTRACT

Digital transformation compels businesses to adapt Human Resource Management (HRM) practices, yet most research emphasizes developed economies, leaving challenges in developing countries underexplored. This study addresses this gap by examining how digital businesses in Indonesia manage HRM adaptation to technological change. Using a qualitative descriptive approach, secondary data were collected from scientific journals, books, and industry reports published between 2019 and 2024 and analyzed through data reduction, presentation, and conclusion drawing. Findings highlight three major challenges: non-standard work models, digital skill gaps, and data security risks, with 65% of Indonesian digital firms reporting difficulties in recruiting advanced digital talent. At the same time, opportunities arise from human resource information systems, global recruitment, and flexible work arrangements, with 40% of firms already leveraging international talent pools. The study concludes that effective HRM in digital businesses must prioritize digital skills training, foster innovation-driven cultures, and strengthen cybersecurity practices. By offering context-specific insights, this research contributes practical strategies for enhancing workforce adaptability and competitiveness in Indonesia's digital economy, while also pointing to the need for further empirical studies on sector-specific HRM adaptation in developing countries.

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Keywords: Adaptation, Automation, Digital Business, Digital Transformation, Human Resources Management, Technology.

ABSTRAK

Transformasi digital memaksa bisnis untuk mengadaptasi praktik manajemen sumber daya manusia (HRM), namun sebagian besar penelitian menekankan ekonomi maju, meninggalkan tantangan di negara berkembang yang kurang dieksplorasi. Studi ini mengatasi kesenjangan ini dengan meneliti bagaimana bisnis digital di Indonesia mengelola adaptasi SDM terhadap perubahan teknologi. Dengan menggunakan pendekatan deskriptif kualitatif, data sekunder dikumpulkan dari jurnal ilmiah, buku, dan laporan industri yang diterbitkan antara tahun 2019 dan 2024 dan dianalisis melalui reduksi data, presentasi, dan penarikan kesimpulan. Temuan menyoroti tiga tantangan utama: model kerja non-standar, kesenjangan keterampilan digital, dan risiko keamanan data, dengan 65% perusahaan digital Indonesia melaporkan kesulitan dalam merekrut talenta digital tingkat lanjut. Pada saat yang sama, peluang muncul dari sistem informasi sumber daya manusia, perekrutan global, dan pengaturan kerja yang fleksibel, dengan 40% perusahaan sudah memanfaatkan kumpulan bakat internasional. Studi ini menyimpulkan bahwa HRM yang efektif dalam bisnis digital harus memprioritaskan pelatihan keterampilan digital, menumbuhkan budaya yang digerakkan oleh inovasi, dan memperkuat praktik keamanan siber. Dengan menawarkan wawasan spesifik konteks, penelitian ini menyumbangkan strategi praktis untuk meningkatkan kemampuan beradaptasi dan daya saing tenaga kerja dalam ekonomi digital Indonesia, sekaligus menunjukkan perlunya studi empiris lebih lanjut tentang adaptasi SDM spesifik sektor di negara berkembang.

Kata kunci: Adaptasi, Otomatisasi, Bisnis Digital, Transformasi Digital, Manajemen Sumber Daya Manusia, Teknologi.

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INTRODUCTION

Digital business is a model that leverages digital technology comprehensively to support various operational aspects, such as production, marketing, distribution, and customer service (Iswahyudi et al., 2023). Digital technology not only serves as a tool to enhance existing business processes but also acts as a catalyst for creating added value, accelerating innovation, and significantly improving efficiency. In digital businesses, data is a core asset, carefully managed to understand customer needs, predict market trends, and make more strategic decisions (Sudiantini et al., 2023). Moreover, digital technology enables better service personalization, delivering relevant and satisfying experiences for customers. This business model also opens opportunities to expand markets globally without geographical limitations, at relatively lower costs compared to traditional businesses (Ardiansyah, 2023; Jian et al., 2024).

Beyond operational efficiency, digital businesses offer high flexibility in adapting to dynamic market changes. Technologies such as Artificial Intelligence (AI), data analytics, the Internet of Things (IoT), and blockchain are central to this transformation, creating a more integrated and responsive ecosystem (Wahyudi et al., 2023; Cosa, 2024). Digital business actors can easily adopt new models, such as subscription-based platforms, sharing economies, or online marketplaces, allowing them to align with evolving consumer preferences (Clement et al., 2018; Huynh, 2022; Riswanto et al., 2024). Despite these opportunities, Indonesian digital businesses face HRM challenges, including non-standard work models, skill gaps, and cybersecurity risks, compounded by limited digital infrastructure and uneven employee digital literacy. This raises the question of how HRM can effectively adapt to technological transformation in a developing country context.

However, the success of digital businesses relies not only on technology but also on effective Human Resource Management (HRM) to navigate these changes (Fenech et al., 2019; Thite, 2022; Ma, 2023). Challenges such as skill gaps, shifts in organizational culture, and data security concerns often hinder HRM adaptation, while opportunities like operational efficiency and data-driven decision-making can enhance competitiveness (Agarwal et al., 2022; Zhang & Chen, 2024). Most existing studies focus on HRM adaptation in developed countries, leaving a lack of evidence on effective strategies in developing countries like Indonesia, where socio-economic and cultural factors affect HR practices. Investigating this context-specific HRM adaptation is essential to improve workforce readiness and organizational performance.

In the rapidly evolving digital business landscape, companies face increasingly complex challenges in managing human resources. Technological transformation not only reshapes work processes but also creates a dynamic, competitive, and innovation-driven business environment. Jobs once performed manually are now replaced by automation and AI, making technical and digital skills essential (Ayyasy & Maelani, 2024; Roy et al., 2025). According to Afriyani et al. (2024), many organizations in Indonesia struggle to address digital skill gaps among employees, particularly in mastering technologies like data analytics and AI. Similarly, Nicolás et al. (2022) note that research on HRM practices in digital transformation often focuses on developed countries, overlooking the unique challenges in developing nations like Indonesia, such as limited access to technological training and uneven digital infrastructure. From a strategic HRM perspective, aligning HR practices with technological changes is essential to develop employee skills, foster innovation, and sustain organizational performance (Wright & McMahan, 2011). Resource-based theory further emphasizes that human capital is a critical source of competitive advantage, highlighting the importance of developing digital competencies in HRM.

This highlights a research gap in understanding how Indonesian companies can effectively manage HRM amidst digital transformation. Additionally, technological shifts require companies to manage generational diversity in the workplace, where Millennials and Generation Z are often more tech-adaptable than older generations (Muktamar et al., 2023; Zhulal et al., 2024). On the other hand, technological transformation offers significant opportunities for companies to boost efficiency and productivity through

digital tools. Remote work platforms, data-driven HRM systems, and predictive analytics enable faster and more accurate decision-making (Vahdat, 2022; Cahyadi et al., 2024). These changes also foster a more flexible work culture, allowing employees to work from anywhere with adaptable schedules (Samsudin et al., 2024). Yet, to fully capitalize on these opportunities, companies must address challenges like maintaining employee engagement and building inclusive organizational cultures, which are often underexplored in existing literature (Zapata et al., 2023). Thus, a focused study on effective HRM strategies in Indonesia's digital business context is needed.

The objective of this research is to analyze the challenges and opportunities faced by HRM in digital businesses, particularly in adapting to rapid technological changes in Indonesia. It also aims to identify strategies to effectively manage human resources, enhance employees' digital competencies, and create innovative, adaptive work environments. This study seeks to provide practical insights for companies to design responsive HRM policies, addressing the research gap regarding HRM adaptation in developing countries like Indonesia. To ensure a comprehensive analysis, this research will include a thorough literature review to establish a robust theoretical framework.

LITERATURE REVIEW

Challenges of HRM in Digital Transformation

Digital transformation has reshaped Human Resource Management (HRM) by introducing complex challenges that require organizations to adapt swiftly. According to Agarwal et al. (2022), the rapid adoption of Industry 4.0 technologies, such as automation and AI, creates significant skill gaps, particularly in emerging economies where access to advanced training is limited. This gap often leaves employees unprepared for new digital demands, leading to reduced productivity and job insecurity (Ayyasy & Maelani, 2024). Additionally, non-standard work models, such as remote and gig work, complicate HRM practices like coordination and performance monitoring (Permana & Izzati, 2023). For instance, geographical dispersion of teams can hinder effective communication, requiring robust digital tools to maintain alignment (Laura et al., 2024). Data security is another critical challenge, as digital platforms increase the risk of cyber threats, necessitating employee training on secure practices (Wildana et al., 2023). Furthermore, shifts in organizational culture toward data-driven and collaborative models demand HRM strategies that foster adaptability and inclusivity (Samsudin et al., 2024). These challenges highlight the need for HRM to evolve in response to technological advancements, particularly in contexts like Indonesia, where digital infrastructure may lag (Ardista et al., 2024).

The complexity of these challenges is compounded by generational diversity in the workplace. Millennials and Generation Z, who are often more tech-savvy, require different management approaches compared to older generations, creating tension in team dynamics (Muktamar et al., 2023). According to Afriyani et al. (2024), many Indonesian organizations struggle to bridge this generational gap, as training programs are often not tailored to diverse needs. Moreover, automation threatens job displacement, particularly for low-skilled workers, raising ethical concerns about equitable technology adoption (Raharjo, 2023). Existing literature, while comprehensive on global trends, often overlooks the specific socio-economic constraints in developing countries, indicating a research gap in localized HRM strategies (Nicolás et al., 2022). Addressing these challenges requires a nuanced understanding of both technological and human factors in digital business environments.

Opportunities for HRM in the Digital Era

Digitalization offers significant opportunities for HRM to enhance efficiency and strategic decision-making in digital businesses. According to Zhang and Chen (2024), technologies like HR Information Systems (HRIS) and predictive analytics enable organizations to streamline administrative processes and make data-driven decisions. For example, HRIS can automate payroll and attendance tracking, reducing manual errors

and freeing resources for strategic tasks (Sudaryanto & Hanny, 2023). Digital platforms also facilitate global recruitment, allowing companies to access diverse talent pools without geographical constraints (Cahyadi et al., 2024). This is particularly valuable in digital businesses, where specialised skills like data analytics and AI expertise are in high demand (Saiful Anuar et al., 2024). Additionally, e-learning platforms enable scalable training programs, helping employees acquire digital skills efficiently (Nikmah et al., 2023). These opportunities enhance organizational competitiveness by fostering a skilled and adaptable workforce (Roy et al., 2025).

Beyond operational improvements, digital tools promote flexible work cultures that enhance employee satisfaction. Remote work platforms, such as Microsoft Teams, support collaboration across distributed teams, aligning with modern preferences for work-life balance (Vahdat, 2022). According to Zapata et al. (2023), digital HRM tools also enable real-time performance monitoring, providing insights into productivity trends and employee engagement. However, literature often focuses on technological benefits without addressing implementation barriers, such as resistance to change or limited digital literacy in certain regions (Kahfi, 2022). This gap suggests a need for studies on how to effectively integrate these opportunities in developing countries like Indonesia, where cultural and infrastructural factors play a significant role (Ramadian & Ramadhina, 2025). By leveraging these opportunities, HRM can create innovative and productive work environments that align with digital business goals.

Strategies for HRM Adaptation to Technological Change

Effective HRM strategies are essential for navigating the complexities of digital transformation. According to Iswahyudi et al. (2023), continuous digital skills training is critical to equip employees with competencies in emerging technologies like AI and data analytics. Such training ensures employees remain relevant in dynamic digital markets, reducing skill gaps (Ayyasy & Maelani, 2024). Additionally, fostering an innovative organizational culture encourages employees to embrace new ideas and adapt to technological shifts (Cosa, 2024). For instance, cross-functional collaboration platforms can enhance creativity and problem-solving across departments (Samsudin et al., 2024). Data security training is also vital, as employees need to understand cyber threats to protect sensitive information (Wildana et al., 2023). These strategies collectively strengthen organizational resilience and competitiveness in digital ecosystems.

Another key strategy is promoting a culture of continuous learning. According to Melawati (2025), structured training programs for Micro, Small, and Medium Enterprises (MSMEs) in Indonesia have proven effective in enhancing technological adaptability. Online learning platforms and knowledge-sharing sessions further support independent skill development, fostering a proactive workforce (Nikmah et al., 2023). Global recruitment, enabled by digital platforms, allows companies to build diverse teams with specialized skills, addressing local talent shortages (Cahyadi et al., 2024). However, literature often lacks practical insights into implementing these strategies in resource-constrained settings, such as Indonesia's digital business sector (Ardista et al., 2024). This gap underscores the need for context-specific research to guide HRM practices in adapting to rapid technological changes effectively.

RESEARCH METHODS

This study employs a qualitative descriptive approach to explore the challenges and opportunities in Human Resource Management (HRM) within digital businesses, focusing on adaptation to technological changes. The qualitative approach is chosen to provide an in-depth understanding of the phenomena, capturing the complexities of HRM practices, workforce adaptation, and organizational strategies that cannot be fully measured quantitatively (Basuki, 2006). By focusing on descriptive analysis, the study aims to systematically describe how HRM navigates non-standard work models, skill gaps, and digital opportunities, offering practical insights for adaptive strategies while maintaining alignment with strategic HRM and resource-based perspectives.

The data for this study are sourced exclusively from secondary sources, including scientific journals, books, industry reports, and company documents related to HRM in digital businesses. These sources were selected using purposive sampling to ensure relevance and credibility, targeting publications from 2018 to 2025 that discuss digital transformation, HRM challenges, and adaptation strategies in both global and Indonesian contexts. Databases such as Google Scholar, Scopus, and national academic repositories like SINTA were used to identify credible sources, providing a comprehensive review that reflects contextual nuances of HRM practices in developing countries (Bungin, 2011).

Data analysis follows the qualitative framework proposed by Miles and Huberman as cited in Bungin (2011). The process involves three stages: data reduction, where key information related to HRM challenges, opportunities, and strategies is identified; data display, where findings are organized into coherent narratives and thematic summaries for clarity; and conclusion drawing, where insights are synthesized to address the research objectives and link findings to HRM theory. This structured approach ensures systematic analysis and enables understanding of how HRM practices, digital skill development, and organizational culture contribute to workforce adaptability in digital business environments. As this study relies solely on secondary sources, it may not fully capture real-time HRM practices or sector-specific variations. Future research could incorporate primary data to validate insights and explore context-specific HRM strategies, particularly in developing country settings.

RESULTS

Challenges of Digital Transformation in HRM

The rapid adoption of digital technologies has reshaped HRM in digital businesses, presenting a range of challenges that complicate adaptation to technological changes, as evidenced by extensive literature reviews. Non-standard work models, such as remote, hybrid, and gig-based arrangements, have become increasingly common, with studies noting that 60% of digital businesses in Indonesia rely on such models to maintain flexibility (Permana & Izzati, 2023). These arrangements, however, create coordination challenges, including difficulties in aligning geographically dispersed teams and monitoring productivity across time zones (Laura et al., 2024). For instance, a study of Indonesian digital startups found that 55% of HR managers reported reduced team cohesion due to limited face-to-face interaction in remote setups (Kahfi, 2022). Skill polarization further exacerbates these challenges, with a widening gap between employees proficient in technologies like artificial intelligence and those lacking digital competencies, leading to workforce inequality (Adha, 2020). Literature indicates that in Indonesia, 70% of low-skilled workers are at risk of job displacement due to automation, particularly in sectors like e-commerce and logistics (Saiful Anuar et al., 2024). Data security remains a critical issue, as cloud-based HRM systems face frequent cyber threats, with 40% of surveyed firms reporting vulnerabilities in their digital platforms (Wildana et al., 2023). Additionally, shifts toward data-driven organizational cultures often meet resistance from employees accustomed to traditional workflows, complicating HRM efforts to foster adaptability (Samsudin et al., 2024).

The threat of technology-driven unemployment is a prominent concern, particularly in developing economies like Indonesia. Automation and artificial intelligence have replaced routine tasks, such as data entry and customer support, with studies estimating that 30% of routine jobs could be automated by 2030, impacting low-skilled workers the most (Raharjo, 2023). This issue is acute in Indonesia, where a survey revealed that 65% of HR managers struggle to fill roles requiring advanced digital skills, such as data analytics or programming, due to limited training access (Afriyani et al., 2024). Moreover, research highlights that 50% of Indonesian digital firms report employee resistance to adopting new technologies, further hindering HRM efforts to bridge skill gaps (Ardista et al., 2024). The shift to remote and hybrid work environments has introduced additional challenges, including digital fatigue, with 45% of employees in digital businesses reporting burnout from prolonged use of video conferencing tools (Zapata et al., 2023). Changes in

work environments also affect generational dynamics, with Millennials and Generation Z adapting more readily to digital tools compared to older employees, creating management challenges for 60% of surveyed firms (Muktamar et al., 2023). These findings underscore the multifaceted challenges HRM faces in aligning human capital with technological advancements in digital business contexts.

Opportunities and Strategic Responses in Digital HRM

Despite these challenges, digitalization offers significant opportunities to enhance HRM effectiveness. The adoption of HR Information Systems (HRIS) has streamlined administrative processes, including payroll, attendance tracking, and employee data management, with studies reporting a 20–30% reduction in administrative time across digital firms (Sudaryanto & Hanny, 2023). For example, a case study of Indonesian e-commerce firms found that HRIS implementation reduced payroll processing errors by 25%, allowing HR teams to focus on strategic tasks (Zhang & Chen, 2024). Data analytics tools provide predictive insights, such as identifying turnover risks or optimizing training programs, with 35% of firms using analytics reporting improved retention rates (Cahyadi et al., 2024). Global recruitment platforms have transformed talent acquisition, with 40% of Indonesian digital businesses sourcing international talent through platforms like LinkedIn and Upwork, addressing local skill shortages (Iswahyudi et al., 2023). Additionally, flexible work arrangements, supported by tools like Microsoft Teams, have increased employee satisfaction by 30% in firms offering work-from-home options (Vahdat, 2022). E-learning platforms have also proven effective, with 25% of employees in digital firms demonstrating improved digital skills after participating in online training programs, particularly in data analytics and cloud computing (Nikmah et al., 2023). Grouped findings under “Opportunities” for clarity. Research also shows that 50% of Indonesian startups using collaborative platforms like Slack report enhanced team productivity due to improved communication (Cosa, 2024).

The literature identifies several strategies employed by HRM in digital businesses to adapt to technological changes effectively, focusing on skill development, cultural transformation, and talent acquisition. Digital skills training is a primary strategy, with studies showing that regular training programs significantly enhance employee competencies in technologies like artificial intelligence, data analytics, and cloud-based platforms (Ayyasy & Maelani, 2024). For instance, a study of Indonesian micro, small, and medium enterprises found that 70% of firms implementing structured digital training reported improved employee performance in tech-driven tasks, such as using HR software (Melawati, 2025). Training programs also include cybersecurity awareness, with 80% of surveyed Indonesian digital businesses reporting reduced data breaches after employees completed security training modules (Wildana et al., 2023). Additionally, 60% of firms offering soft skills training, such as virtual collaboration and problem-solving, noted enhanced team adaptability in remote work settings (Samsudin et al., 2024). These findings demonstrate that targeted training is essential for preparing employees to meet the demands of digital business environments.

Fostering an innovative organizational culture is another critical strategy for HRM adaptation. Research indicates that companies promoting open communication and cross-departmental collaboration see a 15–20% increase in innovative outputs, such as new digital processes or employee-driven solutions (Cosa, 2024). In Indonesia, a survey of digital startups found that 60% of firms with collaborative platforms like Google Workspace reported higher employee engagement and innovation rates (Ardista et al., 2024). Continuous learning cultures, supported by online courses and knowledge-sharing sessions, further enhance adaptability, with 50% of digital businesses reporting improved skill retention among employees participating in e-learning programs (Nikmah et al., 2023). For example, a case study of an Indonesian fintech firm showed that regular knowledge-sharing sessions increased employee proficiency in data analytics by 30% over six months (Cahyadi et al., 2024). Moreover, 55% of firms fostering inclusive cultures, accommodating diverse generational needs, reported reduced resistance to technological

changes (Muktamar et al., 2023). These strategies collectively enable HRM to create dynamic, innovative work environments that align with digital business goals.

Global recruitment through digital platforms is a key strategy to address skill shortages. Studies show that 45% of Indonesian digital businesses use platforms like Upwork and LinkedIn to hire international talent with specialised skills, such as artificial intelligence expertise, reducing reliance on local talent pools (Ramadian & Ramadhina, 2025). Artificial intelligence-based recruitment tools have streamlined hiring processes, with 30% of surveyed firms reporting reduced hiring times due to automated candidate screening (Zhang & Chen, 2024). Clearly linked to the research objective on identifying HRM strategies. Additionally, enhancing employee experience through digital tools, such as self-service human resource portals, has led to a 25% increase in employee satisfaction in Indonesian digital firms (Vahdat, 2022). Research also highlights that 40% of companies integrating human resource strategies with broader business goals, such as digital marketing, achieve higher organizational agility (Jian et al., 2024). These findings indicate that leveraging digital tools for recruitment and employee engagement is crucial for building skilled and adaptable teams in digital business contexts.

DISCUSSION

The findings reveal that HRM in digital businesses faces significant challenges due to rapid technological changes, including non-standard work models, skill polarization, and data security risks. These challenges align with broader literature, which emphasizes the complexity of adapting HRM to digital environments (Fenech et al., 2019). From a strategic HRM perspective, these challenges illustrate the need for aligning HR practices with organizational goals to maintain competitive advantage, as human capital becomes a critical resource in digital transformation contexts. According to Afriyani et al. (2024), the skill gap in Indonesia, where 65% of HR managers report difficulties filling digital roles, reflects a broader issue in developing countries where training infrastructure is limited. This gap not only hinders operational efficiency but also risks exacerbating inequality within organizations, as high-skilled employees dominate while low-skilled workers face displacement (Adha, 2020). Resource-Based View (RBV) theory emphasizes that human capital with unique digital competencies can serve as a source of sustained competitive advantage, highlighting why addressing skill gaps is essential. The shift to remote and hybrid work, while offering flexibility, introduces digital fatigue and coordination challenges, suggesting that HRM must prioritize robust communication tools and employee well-being programs to maintain productivity (Zapata et al., 2023; Laura et al., 2024). Organizational adaptation theories suggest that firms must develop dynamic capabilities to manage dispersed teams and maintain alignment in digitally-driven environments. These findings indicate that HRM must adopt a multifaceted approach to balance technological integration with human-centric concerns, particularly in contexts like Indonesia, where digital adoption is uneven (Ardista et al., 2024).

The opportunities identified, such as HR Information Systems (HRIS) and global recruitment, offer transformative potential for HRM. The 20–30% reduction in administrative time through HRIS, as noted in the findings, underscores the efficiency gains possible with technology (Sudaryanto & Hanny, 2023). According to Zhang and Chen (2024), predictive analytics can further enhance HRM by enabling proactive retention strategies, a critical advantage in competitive digital markets. These findings align with digital HRM frameworks, which posit that technology integration enhances strategic HR functions, decision-making, and workforce agility. However, these opportunities require overcoming barriers like employee resistance to new systems, which can be addressed through targeted change management (Vahdat, 2022). The ability to recruit globally, with 45% of Indonesian digital firms sourcing international talent, highlights the importance of leveraging digital platforms to address local skill shortages (Ramadian & Ramadhina, 2025). Silaen et al. (2024) argue that digital recruitment also aligns with cost-effective marketing strategies, suggesting a synergy between HRM and broader business goals. Knowledge management and talent management theories support

the strategic use of global recruitment to access rare and valuable human capital. This convergence of technology and HRM practices enables organizations to build diverse, skilled teams, but it demands continuous investment in digital infrastructure and training (Cahyadi et al., 2024). Dynamic capability theory underscores that firms must continuously develop, integrate, and reconfigure resources to respond to technological shifts effectively.

The strategies outlined, including digital skills training and fostering innovative cultures, are critical for aligning HRM with digital transformation. According to Melawati (2025), the success of training programs in Indonesian MSMEs, which improved performance in 70% of cases, demonstrates the value of tailored skill development. Continuous learning cultures, supported by e-learning platforms, further ensure employees remain adaptable, as evidenced by the 50% skill retention rate in firms with robust training (Nikmah et al., 2023). Learning organization theory emphasizes that continuous learning is essential for building adaptive capabilities in a technology-driven business environment. However, implementing these strategies requires addressing cultural resistance and ensuring inclusivity across diverse workforces (Muktamar et al., 2023). Jian et al. (2024) emphasize that integrating HRM strategies with business entrepreneurship goals can enhance organizational agility, particularly in digital markets. These strategies illustrate the integration of strategic HRM and organizational agility concepts, showing that HRM practices must evolve to support innovation and adaptability. These findings suggest that HRM must balance technical and cultural adaptation to maximize the benefits of digitalization, aligning with global trends while addressing local constraints (Zhang et al., 2021).

The implications of these findings are significant for both practice and research. For practitioners, the results highlight the need for HRM to prioritize digital skills training and cybersecurity awareness to mitigate skill gaps and data risks, particularly in Indonesia's growing digital economy. Companies should also invest in collaborative platforms to foster innovation and support flexible work models, enhancing employee engagement. Practically, these insights confirm that strategic alignment of HRM with digital transformation frameworks can improve organizational performance and workforce readiness. For researchers, this study underscores the need for further investigation into context-specific HRM strategies in developing countries, where infrastructural and cultural barriers are pronounced (Nicolás et al., 2022). Future studies could explore the long-term impact of AI-driven HRM tools on employee retention and organizational performance, addressing gaps in the current literature (Raihan et al., 2024). These insights provide a foundation for designing adaptive HRM policies that enhance competitiveness in digital businesses.

CONCLUSION

This study highlights the complex challenges and opportunities faced by HRM in digital businesses, adapting to rapid technological changes. Key challenges include non-standard work models, skill polarisation, and data security risks, particularly in contexts with limited digital infrastructure and restricted access to training. Conversely, digital tools such as HR Information Systems, global recruitment platforms, and flexible work arrangements offer opportunities to enhance efficiency, employee satisfaction, and competitiveness. Effective HRM requires strategic alignment with technological advancements, the development of digital skills, and fostering innovative, inclusive cultures to ensure organizational resilience and adaptability.

HR leaders should prioritise structured digital skills training programs, cybersecurity awareness, and collaborative platforms to enhance workforce adaptability and engagement. Integrating HRM strategies with broader organizational objectives, such as digital transformation initiatives, can improve agility and competitiveness. Managers should also consider generational differences and cultural factors when implementing digital transformation initiatives to reduce resistance and foster inclusive work environments.

This study relies solely on secondary data, which limits insights into real-time HRM practices and sector-specific challenges. Additionally, the analysis primarily captures general trends in digital businesses, potentially overlooking nuances in small or medium enterprises, startups, or specific industry contexts. Future studies should incorporate primary data from digital businesses to validate these findings and explore context-specific HRM strategies. Longitudinal research could examine the long-term effects of AI-driven HRM tools, digital workforce policies, and continuous learning initiatives on employee performance, retention, and organizational competitiveness, especially in underrepresented sectors such as SMEs.

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