

Breaking Barriers: Unraveling the Complexities of HR Tech Integration

Mendobrak Hambatan: Mengungkap Kompleksitas Integrasi Teknologi SDM

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ABSTRACT

This research aims to explore the factors that influence technology adoption by the Human Resources (HR) Department. The research method used is a systematic literature review using academic databases of international reputation over the last ten years. Research findings indicate that factors such as organizational culture, technology adoption, HR competencies, HR analytics, technology availability and accessibility, symbolic adoption, and organizational factors play an important role in HR technology adoption. An organizational culture that supports innovation and technology, as well as the technological competence possessed by HR personnel, are significant factors in influencing technology adoption. Additionally, adequate technology availability and strong organizational support were also found to contribute to higher technology adoption rates. The implications of this research indicate the need for organizations to pay attention to these factors in an effort to increase HR technology adoption. Suggestions for future research include longitudinal research to evaluate the long-term impact of HR technology adoption, as well as research across industries and cultural contexts to understand the factors that influence HR technology adoption more broadly.

Keywords: *Technology Adoption, Human Resources Department, Influence Factors, Organizational Culture, HR Competence.*

ABSTRAK

Penelitian ini bertujuan untuk mengeksplorasi faktor-faktor yang memengaruhi adopsi teknologi oleh Departemen Sumber Daya Manusia (HR). Metode penelitian yang digunakan adalah tinjauan pustaka sistematis dengan menggunakan database akademik bereputasi internasional dalam kurun waktu sepuluh tahun terakhir. Temuan penelitian mengindikasikan bahwa faktor-faktor seperti budaya organisasi, adopsi teknologi, kompetensi SDM, analitik HR, ketersediaan dan aksesibilitas teknologi, adopsi simbolik, dan faktor organisasi memainkan peran penting dalam adopsi teknologi HR. Budaya organisasi yang mendukung inovasi dan teknologi, serta kompetensi teknologi yang dimiliki oleh personel HR, merupakan faktor yang signifikan dalam mempengaruhi adopsi teknologi. Selain itu, ketersediaan teknologi yang memadai dan dukungan organisasi yang kuat juga ditemukan berkontribusi pada tingkat adopsi teknologi yang lebih tinggi. Implikasi penelitian ini menunjukkan perlunya organisasi untuk memperhatikan faktor-faktor tersebut dalam upaya meningkatkan adopsi teknologi HR. Saran untuk penelitian selanjutnya mencakup penelitian longitudinal untuk mengevaluasi dampak jangka panjang dari adopsi teknologi HR, serta penelitian lintas industri dan konteks budaya untuk memahami faktor-faktor yang mempengaruhi adopsi teknologi HR secara lebih luas.

Kata Kunci: *Adopsi Teknologi, Departemen Sumber Daya Manusia, Faktor-Faktor Pengaruh, Budaya Organisasi, Kompetensi SDM.*

Introduction

The digital transformation sweeping across industries has brought about significant changes in how HR departments operate. Technology has become a cornerstone in driving efficiency and productivity within HR functions, offering innovative solutions to traditional challenges (Deloitte, 2021) (Bersin, 2019) (SHRM, 2022) (Gartner, 2023).

Technology has had a significant impact on HR practices, transforming the way organizations manage their human resources. The adoption of technology has improved recruitment, training, and performance management, as well as facilitated remote work and enhanced communication within organizations (Silva, 2023) (Torres, et al. 2021). The integration of Artificial Intelligence (AI) into HR procedures has also transformed recruiting, talent management, employee engagement, and the broader HR function (Vishwanath, et al. 2023). AI has the potential to decrease prejudice, increase efficiency, and optimize HR decision-making, while also addressing ethical concerns that arise from this fundamental transition. However, challenges such as infrastructure, access to technology, and resistance to change exist. Overall, technology has the potential to transform HR practices, and it is critical for HR professionals to overcome their fears and handle these obstacles to ensure effective staff management.

To ensure that technology is effectively integrated into HR practices, companies need to take several steps. First, they need to identify the specific HR processes that can be improved through technology and select the appropriate tools that provide an adequate return on investment (Torres, et al. 2021). Second, they need to ensure that the technology is user-friendly and accessible to all employees, regardless of their technical expertise (JAIN, et al. 2014). Third, they need to provide adequate training and support to HR professionals to ensure that they can effectively use the technology and leverage its full potential (Papaevangelou, et al. 2023). Fourth, they need to establish clear policies and procedures for data privacy and security to prevent data breaches and protect employee information (Tsymbaliuk, et al. 2022). Finally, they need to regularly evaluate the effectiveness of the technology and make necessary adjustments to ensure that it continues to meet the needs of the organization and its employees (Singh, et al. 2021).

The integration of technology has greatly enhanced several HR practices. For instance, in recruitment, technology has significantly improved efficiency by utilizing applicant tracking systems, online job boards, and AI-powered tools for resume screening and candidate matching. Moreover, in the realm of training and development, technology has revolutionized programs through e-learning platforms, virtual reality simulations, and personalized learning experiences tailored to individual employee needs. Furthermore, in performance management, technology has streamlined processes with digital performance appraisal systems, real-time feedback tools, and data analytics, enabling organizations to track employee performance and provide insights for improvement. Additionally, technology has facilitated better employee engagement by providing communication platforms, feedback tools, pulse surveys, and recognition programs, fostering stronger connections between organizations and their employees. Lastly, the integration of technology has enabled seamless remote work arrangements, supported by collaboration tools, video conferencing platforms, project management software, and cloud-based systems, thereby promoting virtual teamwork and communication. These examples underscore how technology integration has significantly enhanced various HR practices, resulting in heightened efficiency, effectiveness, and employee satisfaction within organizations (JAIN, 2014) (Torres, et al. 2021) (Silva, 2023).

While technology has brought many benefits to HR practices, there are also potential drawbacks to relying too heavily on technology. One of the main concerns is the loss of the human touch in HR processes, which can lead to a lack of empathy and understanding of employee needs (JAIN, 2014). Additionally, there is a risk of data breaches and privacy violations, which can have serious legal and financial consequences for organizations (Torres, et al. 2022). Another potential drawback is the cost of implementing and maintaining technology, which can be a significant investment for some organizations (Singh, et al. 2022). Finally, there is a risk of over-reliance on technology, which can lead to a lack of critical thinking and decision-making skills among HR professionals (Tsymbaliuk, et al. 2022). It is important for

organizations to strike a balance between technology and human interaction in HR practices to ensure that they are effective and efficient while also maintaining a human touch.

This study aims to comprehensively investigate and analyze the multifaceted factors that exert influence on the adoption of technology within HR departments. By delving into the intricate dynamics of technology adoption in HR, this research seeks to uncover the underlying determinants and barriers that shape decision-making processes within organizations. Through an in-depth exploration of these factors, this study endeavors to provide valuable insights and practical recommendations for HR practitioners, policymakers, and organizational leaders striving to enhance technological integration and optimize HR operations for greater efficiency and productivity.

The objectives and scope of this research are centered around understanding the intricate factors that influence the adoption of technology within HR departments. The primary aim is to delve into the organizational, individual, and technological aspects that play pivotal roles in shaping decisions regarding the integration of HR technology. This study seeks to uncover the challenges and barriers encountered by HR departments in effectively implementing technology into their operations. Moreover, it aims to explore the significance of leadership support, organizational culture, and change management strategies in either facilitating or impeding the adoption process. Additionally, the research endeavors to assess how technology adoption impacts HR efficiency, productivity, and overall organizational performance. By conducting a thorough examination of existing literature, case studies, and empirical research, supplemented by insights from industry experts, this study aims to provide actionable recommendations for HR practitioners, managers, and organizational leaders to enhance the successful implementation of technology within HR departments. While the primary focus is on internal organizational factors, the research acknowledges the interconnected nature of external influences, such as market trends and regulatory requirements, in shaping HR technology adoption decisions.

Literature Review

Definition of HR Technology

HR technology refers to the use of digital tools, software, and platforms to streamline HR processes, enhance decision-making, and improve overall efficiency in managing human resources within organizations. It encompasses a wide range of applications, including recruitment systems, performance management software, learning management systems, and employee engagement platforms.

HR technology refers to the use of digital tools, software, and platforms to streamline HR processes, enhance decision-making, and improve overall efficiency in managing human resources within organizations (JAIN, 2014). It encompasses a wide range of applications, including recruitment systems, performance management software, learning management systems, and employee engagement platforms. HR technology plays a crucial role in enhancing efficiency and productivity within organizations by automating repetitive tasks, providing data-driven insights for decision-making, improving communication and collaboration among employees, and enabling remote work capabilities (JAIN, 2014). By leveraging technology effectively, HR departments can optimize their processes, reduce manual errors, and focus on strategic initiatives that drive organizational success.

Role in Enhancing Efficiency and Productivity

HR technology plays a crucial role in enhancing efficiency and productivity within organizations by automating repetitive tasks, providing data-driven insights for decision-making, improving communication and collaboration among employees, and enabling remote work capabilities. By leveraging technology effectively, HR departments can optimize

their processes, reduce manual errors, and focus on strategic initiatives that drive organizational success.

The integration of technology in HR practices has been shown to enhance efficiency and productivity in various ways. For example, technology has streamlined recruitment processes through the use of applicant tracking systems, online job boards, and AI-powered tools for resume screening and candidate matching (Torres, et al. 2021). It has also revolutionized training and development programs by enabling e-learning platforms, virtual reality simulations, and personalized learning experiences tailored to individual employee needs (Singh, et al. 2021). Additionally, technology has facilitated better employee engagement through communication platforms, feedback tools, pulse surveys, and recognition programs that help organizations connect with their employees on a more personal level[2]. The integration of technology has also enabled seamless remote work arrangements through collaboration tools, video conferencing platforms, project management software, and cloud-based systems that support virtual teamwork and communication (Silva, et al. 2023). By leveraging technology effectively, HR departments can optimize their processes, reduce manual errors, and focus on strategic initiatives that drive organizational success.

Resource-Based View (RBV)

This theory suggests that HR technology can be a source of competitive advantage for organizations by enabling them to leverage their human capital more effectively through the use of innovative tools and systems.

The Resource-Based View (RBV) is a theory that suggests that organizations can achieve a competitive advantage by leveraging their unique internal resources and capabilities (Ciszewska-, et al. 2015). In the context of HR technology, RBV suggests that organizations can gain a competitive advantage by leveraging their human capital more effectively through the use of innovative tools and systems (Chatterjee, et al. 2023). By investing in HR technology, organizations can improve their HR processes, enhance decision-making, and optimize their use of human resources, leading to increased efficiency and productivity.

Human Capital Theory

According to this theory, HR technology enhances the skills, knowledge, and abilities of employees, leading to increased productivity and organizational performance. Human Capital Theory is a theory that suggests that investing in human capital, such as education and training, can lead to increased productivity and organizational performance (Jelonek, 2021). The theory posits that individuals who acquire more human capital, such as skills, knowledge, and abilities, are more valuable to organizations and can command higher wages and better job opportunities. HR technology can play a significant role in enhancing human capital by providing employees with access to training and development programs, personalized learning experiences, and performance management systems that help them improve their skills and knowledge (Kertechian, et al. 2023). By leveraging HR technology effectively, organizations can enhance their human capital and improve their overall productivity and performance.

Efficiency Theory

HR technology is rooted in the concept of improving operational efficiency by automating tasks, streamlining processes, and optimizing resource allocation within HR functions. Efficiency Theory is a theory that emphasizes the importance of improving operational efficiency by automating tasks, streamlining processes, and optimizing resource allocation within HR functions (Nauges, et al. 2013). The theory suggests that by leveraging technology effectively, organizations can reduce manual errors, eliminate redundant tasks, and focus on strategic initiatives that drive organizational success. HR technology plays a crucial role in enhancing efficiency by automating repetitive tasks, providing data-driven insights for

decision-making, improving communication and collaboration among employees, and enabling remote work capabilities (Kertechian, et al. 2023). By leveraging HR technology effectively, organizations can optimize their processes, reduce costs, and improve their overall efficiency and productivity. This conceptual framework and basic theories provide a foundation for understanding the definition of HR technology and its critical role in enhancing efficiency and productivity within organizations.

The adoption of HR technology is influenced by various factors, including organizational culture, employee attitudes, perceived usefulness, ease of use, and top management support (Jain, 2014) (Noutsas, et al. 2019). The Unified Theory of Acceptance and Use of Technology (UTAUT) is a theoretical framework that explains technology adoption by considering these factors (Noutsas, et al. 2019). The UTAUT model suggests that four key factors influence technology adoption: performance expectancy, effort expectancy, social influence, and facilitating conditions (Noutsas, et al. 2019). Performance expectancy refers to the degree to which individuals believe that using technology will improve their job performance. Effort expectancy refers to the degree to which individuals believe that using technology will be easy and require minimal effort. Social influence refers to the degree to which individuals perceive that others in their social network support the use of technology. Facilitating conditions refer to the degree to which individuals believe that the organizational and technical infrastructure supports the use of technology (Noutsas, et al. 2019).

Factors Influencing Technology Adoption by HR Departments

1. Organizational Factors

The search results reveal several critical organizational factors that significantly influence technology adoption within the Human Resources Department. Foremost among these factors is organizational culture, which plays a pivotal role in shaping technology adoption. Cultures that prioritize innovation and technological advancement are more inclined to embrace HR technology initiatives. Additionally, the impact of technology adoption on organizational performance is closely tied to organizational culture, HR competencies, and HR analytics. Notably, technology adoption yields positive outcomes for organizational performance when supported by a conducive organizational culture. Moreover, the symbolic adoption of Human Resource Information System (HRIS) emerges as a significant mediator, particularly in small to medium-sized IT organizations. This symbolic adoption influences the relationship between performance expectancy, creativity, effort expectancy, and work-life balance, further emphasizing the importance of organizational culture in technology adoption processes. Furthermore, management support and resource commitment are identified as strong determinants of technology adoption within organizations. The support provided by management, along with resource allocation and the quality of human resources, plays a crucial role in facilitating successful technology adoption initiatives. These findings underscore the critical role of organizational factors in shaping the adoption of HR technology within the Human Resources Department, highlighting the need for fostering supportive cultures, garnering management backing, and ensuring resource commitment to drive successful technology integration efforts (Jain, 2014) (Penpokai, et al. 2023) (Srivastava, et al. 2022) (Mouakket, et al. 2021).

1.1. Organizational Culture

The search results indicate several key factors that influence technology adoption within the Human Resources Department, particularly concerning organizational culture. Firstly, the concept of symbolic adoption of Human Resource Information System (HRIS) emerges as a significant mediator within small to medium-sized IT organizations. This symbolic adoption serves as a crucial link, impacting the relationship between performance expectancy, creativity, effort expectancy, and work-life balance (Srivastava, et al. 2022). Secondly, organizational culture emerges as a central determinant, with cultures that prioritize

innovation and technological integration being more inclined towards embracing HR technology (Penpokai, et al. 2023). Lastly, the impact of technology adoption on organizational performance is found to be intricately linked with organizational culture, HR competencies, and HR analytics. Notably, technology adoption yields positive outcomes for organizational performance when supported by a conducive organizational culture (Penpokai, et al. 2023). These findings underscore the pivotal role of organizational culture in driving the adoption of HR technology within organizations, emphasizing the need for fostering an environment that values innovation and embraces technological advancements.

1.2. Organizational Structure

Based on the provided search results, factors that influence technology adoption by the Human Resources Department in terms of organizational structure are not explicitly mentioned. However, some of the studies suggest that factors such as organizational culture, technology adoption, and HR competencies can impact organizational performance, which can indirectly influence technology adoption by the HR department (Penpokai, et al. 2023).

1.3. Leadership and Management Support

In terms of leadership and management support, several factors significantly influence the adoption of technology by the Human Resources Department. Foremost among these factors is the presence of top management support. Organizations benefit from a positive correlation between the adoption of HR technology and the endorsement it receives from top-level executives. When leaders actively champion technology adoption initiatives, they foster a culture of innovation within the organization and encourage employees to embrace new technological tools and processes (Jain, 2014). Additionally, the leadership style employed within the organization plays a crucial role. Managers who exhibit openness to change and innovation are more likely to support the adoption of HR technology, thereby facilitating smoother integration processes. Furthermore, organizations can significantly influence technology adoption by prioritizing training and development initiatives for their employees (Noutsas, et al. 2019). By investing in enhancing employee skills and knowledge, organizations cultivate a culture of continuous learning and improvement, which, in turn, fosters a more conducive environment for the adoption of new technologies within the HR department (Srivastava, et al. 2022). These factors underscore the importance of leadership and management support in driving successful technology adoption efforts within organizations, highlighting the need for proactive endorsement, supportive leadership styles, and ongoing investment in employee development initiatives.

2. Individual Factors

Factors influencing technology adoption within the Human Resources Department, particularly concerning individual factors, encompass several crucial elements. Firstly, perceived usefulness emerges as a significant determinant, reflecting the extent to which employees believe that utilizing technology will enhance their job performance. Similarly, effort expectancy holds importance, representing employees' perceptions regarding the ease and minimal effort required in using technology. Moreover, social influence plays a pivotal role, indicating the degree to which employees perceive support for technology adoption from others within their social network. Notably, HR competencies are identified as influential factors impacting technology adoption and organizational performance. Employees' competencies in HR-related tasks can significantly influence their readiness to adopt new technologies and adapt to changing HR practices. These individual factors collectively underscore the importance of considering employees' perceptions, beliefs, and competencies in shaping the adoption of HR technology within the Human Resources Department. Efforts to prioritize perceived usefulness, streamline ease of use, foster supportive social networks, and

enhance HR competencies can significantly enhance employees' readiness to embrace new technologies, driving successful technology integration efforts and ultimately contributing to organizational efficiency and effectiveness (Jain, 2014) (Srivastava, et al. 2022) (Penpokai, , et al. 2023).

2.1. Knowledge and Skills

Based on the provided search results, factors that influence technology adoption by the Human Resources Department in terms of knowledge skills are not explicitly mentioned. However, it can be inferred that employee knowledge and skills play a crucial role in technology adoption. Organizations need to ensure that employees have the necessary knowledge and skills to effectively use HR technology. Training and development programs can help enhance employee competencies and increase their readiness to adopt new technologies (Torres, et al.2021). Additionally, factors such as performance expectancy, effort expectancy, and social influence can impact employee creativity and work-life balance, which are influenced by the symbolic adoption of HRIS in small to medium-size IT organizations (Srivastava, 2022).

2.2. Attitudes toward Technology

In terms of attitudes toward technology, several key factors significantly influence the adoption of technology within the Human Resources Department. Firstly, performance expectancy plays a pivotal role, reflecting the extent to which employees believe that utilizing technology will enhance their job performance. Similarly, effort expectancy is crucial, representing employees' perceptions regarding the ease and simplicity of using technology, with minimal required effort. Moreover, social influence emerges as a significant determinant, indicating the degree to which employees perceive support for technology adoption from others within their social network. Additionally, the concept of symbolic adoption of HRIS emerges as a noteworthy mediator, particularly within small to medium-sized IT organizations. This symbolic adoption serves as a crucial link, influencing the relationship between performance expectancy, creativity, effort expectancy, and work-life balance. Collectively, these factors underscore the importance of fostering positive attitudes toward technology among employees, as they play a vital role in shaping the adoption of HR technology within organizations. Efforts to cultivate a supportive environment, address concerns related to effort expectancy, and harness the potential of symbolic adoption can significantly enhance the successful integration of technology within the HR department, ultimately driving organizational efficiency and effectiveness (Srivastava, et al. 2022) (Noutsas, et al. 2019).

2.3. User Experience

Factors influencing technology adoption within the Human Resources Department, particularly concerning user experience, encompass various critical elements. Firstly, perceived usefulness plays a significant role, reflecting employees' beliefs regarding the extent to which utilizing technology will enhance their job performance. Similarly, ease of use is paramount, representing employees' perceptions of the simplicity and minimal effort required in using technology. Moreover, the provision of training and development opportunities emerges as a crucial influencer. By investing in enhancing employee skills and knowledge, organizations foster a culture of continuous learning and improvement, thereby supporting the adoption of new technology. Additionally, the concept of symbolic adoption of HRIS holds importance, particularly in small to medium-sized IT organizations, as it mediates the relationship between performance expectancy, creativity, effort expectancy, and work-life balance. These factors collectively underscore the significance of user experience in shaping the adoption of HR technology within organizations. Efforts to prioritize perceived usefulness, streamline ease of use, invest in employee training and development, and leverage the potential of symbolic

adoption can significantly enhance user experience and, consequently, drive successful technology integration within the HR department. Ultimately, fostering positive user experiences is essential for maximizing the benefits derived from HR technology adoption and ensuring organizational efficiency and effectiveness (Srivastava, et al. 2022) (Penpokai, et al. 2023) (Noutsas, et al. 2019).

3. Technological Factors

Various technology factors significantly influence the adoption of technology within the Human Resources Department, playing a pivotal role in shaping HR practices and organizational performance. Firstly, the impact of technology on HR practices is substantial, enhancing efficiency across recruitment, maintenance, development, and decision-making functions within HR operations. Additionally, the utilization of HR analytics is crucial, with organizational factors such as Organizational Culture (OC), Technology Adoption (TEA), and HR Competencies (HRC) positively influencing HR analytics and subsequent organizational performance. Moreover, the symbolic adoption of Human Resource Information System (HRIS) serves as a mediator, particularly in small to medium-sized IT organizations, impacting the relationship between technology adoption factors, work-life balance, and employee creativity. Furthermore, the adoption of Green Information Technology (GIT) is influenced by factors such as management support, resource commitment, and the quality of human resources within organizations. Finally, technology plays a vital role in enhancing various HR practices, including recruitment, retention, employee evaluation, and operational efficiency within family-owned firms. Collectively, these factors underscore the critical role of technology in shaping HR practices and organizational performance, emphasizing the need for effective adoption strategies to harness the full potential of technology within the Human Resources Department (Jain, 2014) (Penpokai, et al. 2023) (Srivastava, et al. 2022) (Mouakket, et al. 2021) (Torres, et al. 2021).

3.1. Availability and Accessibility of Technology

Several factors concerning the availability and accessibility of technology significantly influence its adoption within the Human Resources Department. Firstly, the Technology-Organization-Environment (TOE) Framework suggests that the availability and accessibility of technology, alongside organizational and environmental factors, play crucial roles in shaping technology adoption within organizations. Moreover, the Task Technology Fit (TTF) model indicates that the degree of fit between technology and tasks performed by employees affects adoption rates. When technology aligns well with job tasks, employees are more inclined to adopt it. Additionally, the Unified Theory of Acceptance and Use of Technology (UTAUT) model emphasizes the impact of technology availability and accessibility, alongside other factors such as performance expectancy and effort expectancy, on technology adoption by employees. Furthermore, the symbolic adoption of Human Resource Information System (HRIS) serves as a mediator, particularly in small to medium-sized IT organizations, influencing the relationship between technology adoption factors, work-life balance, and employee creativity. Overall, these factors underscore the critical importance of ensuring the availability and accessibility of technology in driving the adoption of HR technology within the Human Resources Department. Efforts to prioritize technology availability, alignment with job tasks, and consideration of adoption frameworks can significantly enhance technology adoption rates and ultimately contribute to organizational efficiency and effectiveness within HR operations (Mouakket, et al. 2021) (Jain, 2014) (Noutsas, et al. 2019) (Srivastava, et al. 2022).

3.2. Features and Functionality of Technology

Factors that influence technology adoption by the Human Resources Department in terms of features and functionality of technology are not explicitly mentioned in the provided

search results. However, it can be inferred that the impact of technology on HR practices is significant, and technology has the potential to increase the efficiency of recruitment, maintenance, development, and decision-making functions within HR practices (Jain, 2014)

3.3. Implementation Costs and Technical Support

Factors that influence technology adoption by the Human Resources Department in terms of implementation costs and technical support are not explicitly mentioned in the provided search results. However, it can be inferred that the impact of technology on HR practices is significant, and technology has the potential to increase the efficiency of recruitment, maintenance, development, and decision-making functions within HR practices (Jain, 2014).

Research Method

A. Research Design

This study adopts a systematic literature review approach to investigate factors influencing technology adoption by the Human Resources Department. The systematic literature review methodology allows for a comprehensive and structured examination of existing research literature within a specific field or topic area. By systematically searching and synthesizing relevant academic articles, this research design aims to provide a thorough understanding of the factors influencing technology adoption in HR over the past decade. The systematic approach ensures transparency, replicability, and rigor in the review process, thereby enhancing the reliability and validity of the findings.

B. Data Collection Methods

The data collection process involves accessing and retrieving academic articles from reputable international academic databases covering the past 10 years. A systematic search strategy is employed to identify relevant studies using predefined keywords and search strings related to technology adoption in HR. The selected databases include prominent platforms such as Scopus, Web of Science, and PubMed, which provide access to a wide range of peer-reviewed scholarly journals across various disciplines. Additionally, manual searches are conducted to ensure comprehensiveness, including the examination of reference lists of relevant articles and citation tracking. The inclusion criteria for selecting articles are based on relevance to the research topic, publication in peer-reviewed journals, and alignment with the specified time frame. Through meticulous data collection methods, this study aims to gather a comprehensive dataset of scholarly literature that addresses the factors influencing technology adoption by the Human Resources Department.

C. Data Analysis and Research Approach

The data analysis for this study adopts a systematic and meticulous approach to comprehensively review and synthesize existing literature on factors influencing technology adoption within the Human Resources Department. Initially, retrieved articles undergo a thorough screening process, where they are assessed based on predefined criteria to ensure relevance to the research topic. Articles meeting the inclusion criteria are further evaluated for methodological rigor and validity through a quality assessment process. Following this, relevant data from the selected articles are systematically extracted and organized into a structured format, capturing key information such as study objectives, methodologies, findings, and conclusions pertaining to technology adoption factors.

Subsequently, the extracted data are subjected to a synthesis and interpretation phase, where common themes, patterns, and trends across the literature are identified and analyzed. This synthesis process involves categorizing and summarizing findings related to various factors influencing technology adoption, including organizational, individual, technological, and

environmental factors. Additionally, if feasible, a meta-analysis may be conducted to quantitatively analyze aggregated data from selected studies, providing insights into effect sizes and relationships between variables.

The synthesized findings are then interpreted within the context of the research objectives and existing theoretical frameworks. Conclusions are drawn regarding the key factors influencing technology adoption by the Human Resources Department, accompanied by implications for practice and suggestions for future research directions. Through this systematic and structured approach to data analysis, this study ensures rigor, transparency, and reliability in synthesizing the existing literature on technology adoption in HR, thereby contributing valuable insights to the field.

Results and Discussions

Review of Studies on Factors Influencing Technology Adoption by HR Departments

The reviewed studies suggest that technology adoption by the Human Resources Department is influenced by various factors, including organizational culture, technology adoption, HR competencies, and HR analytics. The impact of technology on HR practices is significant, and technology has the potential to increase the efficiency of recruitment, maintenance, development, and decision-making functions within HR practices. The task technology fit (TTF) model suggests that the degree of fit between the technology and the tasks performed by employees can impact technology adoption. The availability and accessibility of technology, along with organizational and environmental factors, can influence technology adoption within organizations. The symbolic adoption of Human Resource Information System (HRIS) can mediate the relationship between technology adoption factors, work-life balance, and employee creativity in small to medium-size IT organizations. The availability of technical support can impact the adoption of HRIS technology by employees. Organizational factors such as management support, resource commitment, and quality of human resources have been identified as strong determinants of technology adoption within organizations. Finally, the success of the digital transformation HRM project is influenced by the active participation of the HR department and the application of HR metrics.

Comparison and Analysis of Findings from Those Studies

The reviewed studies suggest that technology adoption by the Human Resources Department is influenced by various factors, including organizational culture, technology adoption, HR competencies, HR analytics, task technology fit, availability and accessibility of technology, implementation costs, and technical support. The impact of technology on HR practices is significant, and technology has the potential to increase the efficiency of recruitment, maintenance, development, and decision-making functions within HR practices. The symbolic adoption of Human Resource Information System (HRIS) can mediate the relationship between technology adoption factors, work-life balance, and employee creativity in small to medium-size IT organizations. The availability of technical support can impact the adoption of HRIS technology by employees. Organizational factors such as management support, resource commitment, and quality of human resources have been identified as strong determinants of technology adoption within organizations. The success of the digital transformation HRM project is influenced by the active participation of the HR department and the application of HR metrics. The reviewed studies were conducted in different contexts, including Thailand, India, the United Arab Emirates, and the clinical research industry. However, they all provide valuable insights into the factors that influence technology adoption by the Human Resources Department.

Research Framework

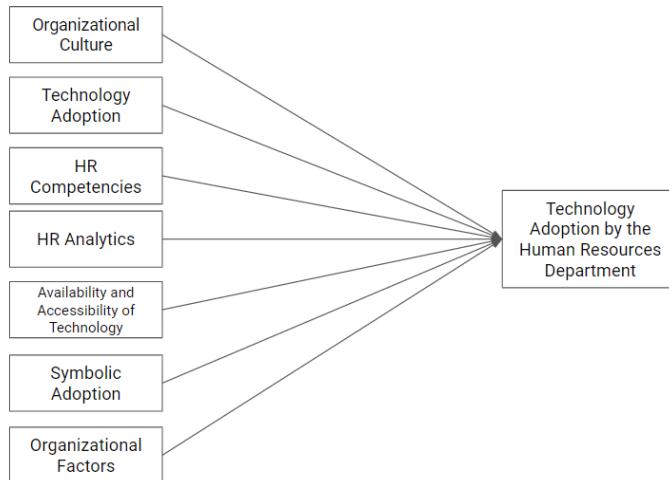


Figure 1 The Use of Technology to Improve HR Efficiency and Productivity

Hypothesis:

1. There is a positive relationship between Organizational Culture and Technology Adoption by the Human Resources Department. the stronger the organizational culture that supports innovation and technology, the higher the likelihood of the Human Resources Department adopting new technology.
2. There is a positive relationship between Technology Adoption and Technology Adoption by the Human Resources Department. The higher the overall level of technology adoption in the organization, the higher the likelihood of the Human Resources Department to adopt new technology
3. There is a positive relationship between HR Competencies and Technology Adoption by the Human Resources Department. The higher the technological competence possessed by Human Resources personnel, the higher the possibility of the Human Resources Department to adopt new technology
4. There is a positive relationship between HR Analytics and Technology Adoption by the Human Resources Department. The stronger the use of HR analytics in the organization, the higher the likelihood of the Human Resources Department to adopt new technology.
5. There is a positive relationship between Availability and Accessibility of Technology and Technology Adoption by the Human Resources Department. The higher the level of availability and accessibility of technology in the organization, the higher the likelihood of the Human Resources Department to adopt new technology.
6. There is a positive relationship between Symbolic Adoption and Technology Adoption by the Human Resources Department. The higher the level of symbolic adoption of technology by the Human Resources Department, the higher the likelihood that they will adopt HR technology in real terms.
7. There is a positive relationship between Organizational Factors and Technology Adoption by the Human Resources Department. The stronger the organizational factors such as management support, resource commitment, and quality of human resources in the organization, the higher the likelihood of the Human Resources Department to adopt new technology.

Implications and Recommendations**Implications for Managerial Practices**

1. Organizational leaders should prioritize fostering a culture of innovation and technological acceptance within the organization to facilitate HR technology adoption.
2. HR managers should invest in developing the technological competencies of HR professionals to ensure effective utilization of HR technology.
3. Organizations should allocate sufficient resources and provide adequate technical support to enhance the availability and accessibility of HR technology.
4. Managers should consider the symbolic adoption of HR technology as a precursor to actual adoption and implement strategies to cultivate positive attitudes towards technology within the HR department.

Implications for Further Research

1. Future research could explore the impact of specific organizational factors, such as leadership styles and organizational structure, on HR technology adoption.
2. There is a need for longitudinal studies to assess the long-term effects of HR technology adoption on organizational performance and employee outcomes.
3. Comparative studies across different industries and cultural contexts could provide valuable insights into the universal applicability of factors influencing HR technology adoption.
4. Research could also delve deeper into the role of change management strategies in facilitating successful HR technology adoption initiatives.

Recommendations for Organizations Seeking to Enhance HR Technology Adoption

1. Develop comprehensive training programs to upskill HR professionals in utilizing HR technology effectively.
2. Foster a supportive organizational culture that values innovation and encourages experimentation with new HR technologies.
3. Invest in user-friendly HR technology solutions and provide ongoing technical support to ensure smooth adoption and integration.
4. Establish clear communication channels and involve HR professionals in the decision-making process regarding technology selection and implementation to enhance buy-in and ownership.

Conclusion

1. The research findings indicate that several factors influence technology adoption by HR departments, including organizational culture, technology adoption, HR competencies, HR analytics, availability and accessibility of technology, symbolic adoption, and organizational factors.
2. Organizational culture plays a significant role in shaping attitudes toward technology adoption within HR departments. A culture that fosters innovation and embraces technology tends to facilitate the adoption of HR technology.
3. HR competencies and HR analytics are crucial for successful technology adoption, as skilled HR professionals can effectively leverage technology to enhance HR practices and organizational performance.
4. The availability and accessibility of technology, along with organizational support and resources, significantly influence the adoption of HR technology within organizations.
5. Symbolic adoption serves as a precursor to actual adoption, highlighting the importance of cultivating positive attitudes toward technology within HR departments.

6. Organizational factors such as management support, resource commitment, and the quality of human resources play a crucial role in determining the success of HR technology adoption initiatives.

References

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press.

Bersin, J. (2019). HR Technology Disruptions for 2020: Productivity, Empathy, and Employee Experience.

Chatterjee, S., Chaudhuri, R., Vrontis, D., & Thrassou, A. (2023). Revisiting the resource-based view (RBV) theory: from cross-functional capabilities perspective in post COVID-19 period. *Journal of Strategic Marketing*.

Ciszewska-Mlinarić, M., & Wąsowska, A. (2015). Resource-Based View (RBV).

Davenport, T. H., & Harris, J. (2007). *Competing on analytics: The new science of winning*. Harvard Business Press.

Deloitte. (2021). *Global Human Capital Trends: The social enterprise at work - Paradox as a path forward*.

Gartner. (2023). *Hype Cycle for Human Capital Management Technology*.

Jain, D.V. (2014). Impact of Technology on HR Practices.

Jelonek, M. (2021). Human capital theory. *Universities and the Labour Market*.

Kertechian, K.S., & El-Farr, H. (2023). *Human Capital Theory*.

Nauges, C., O'Donnell, C., & Quiggin, J. (2013). Risk and Uncertainty Program TITLE : Uncertainty and Technical Efficiency in Finnish Agriculture : A State-contingent Approach.

Noutsa, F.A., Wamba, S.F., & Kamdjoug, J.R. (2019). Exploring Factors Affecting the Adoption of HRIS in SMEs in a Developing Country: Evidence from Cameroon. *Lecture Notes in Information Systems and Organisation*.

Papaevangelou, O., Syndoukas, D., Kalogiannidis, S., & Chatzitheodoridis, F. (2023). Efficacy of embedding IT in human resources (HR) practices in education management. *Journal of Infrastructure, Policy and Development*.

Penpokai, S., Vuthisopon, S., & Saengnoree, A. (2023). The causal factors that affect the organizational performance of large-size companies in Thailand through HR analytics. Nurture.

Sallu, S., Sianturi, N. M., Purwoko, B., Herliansyah, Y., & Manuhutu, M. A. (2023). Learning in Higher Education Based on Artificial Intelligence (AI) with Case Based Reasoning (CBR). *Journal of Namibian Studies: History Politics Culture*, 34, 1049-1064.

Silva, A.C. (2023). The Impact of Technological Advancements on HR Practices and Leadership in Brazil. *Journal of Human Resource and Leadership*.

Singh, A., & Shaurya, A. (2021). Impact of Artificial Intelligence on HR practices in the UAE. *Humanities and Social Sciences Communications*, 8.

Society for Human Resource Management (SHRM). (2022). *The Role of Technology in HR Transformation: A Strategic Perspective*.

Srivastava, S., & Bajaj, B. (2022). HRIS Symbolic Adoption, Its Relationship With Technological Adoption Factors, WLB, and Creativity. *Int. J. Hum. Cap. Inf. Technol. Prof.*, 13, 1-15.

Torres, K.M., & Statti, A.L. (2021). Utilizing Technology to Enhance Human Resource Practices. *Advances in Human Resources Management and Organizational Development*.

Tsymbaliuk, S., Vasylyk, A.V., & Bilyk, O. (2022). Artificial Intelligence in HR: Practices and Prospects of the Spread in Ukraine. *The Eurasia Proceedings of Science Technology Engineering and Mathematics*.

INishwanath, D.B., & Vaddepalli, D.S. (2023). The Future of Work: Implications of Artificial Intelligence on Hr Practices. Tuijin Jishu/Journal of Propulsion Technology.