DIGITAL TRANSFORMATION IN HUMAN RESOURCES MANAGEMENT: STRATEGIES FOR A COMPETITIVE FUTURE

TRANSFORMAÇÃO DIGITAL NA GESTÃO DE RECURSOS HUMANOS: ESTRATÉGIAS PARA UM FUTURO COMPETITIVO

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ABSTRACT

Digitization has significantly redefined the concept of human resources, reshaping traditional practices such as recruitment and selection to make processes more efficient and appealing to candidates. Furthermore, automation and digitization are clearly the new trends, optimising administrative procedures and consequently leading to strategic restructuring by managers and human resource managers. This competitive, globalized reality requires a new leadership profile that promotes an inclusive organizational culture and uses technology to empower employees rather than replace them. Taking a qualitative approach based on a literature review, this article analyses digital transformation and its direct impact on Human Resource Management (HRM), exploring the historical evolution of the phenomenon and the milestones that have driven technological integration within organizations. A proposal for the correct implementation of digital resources in recruitment and selection within an organization was presented. The article highlights the strategic repositioning of HRM as a critical thinking element adapted to organizational needs, thus consolidating its role as a strategic driver for the future of organizations. Notably, digital transformation redefines HRM practices, requiring employees trained to address emerging technological challenges and establishing itself as a critical factor in organizational competitiveness in a global context. Limitations and future suggestions are presented at the end.

Keywords: Digital transformation, Human Resources Management, Technology, Automation, Organizational Culture.

RESUMO

A digitalização tem provocado uma redefinição significativa do conceito de Recursos Humanos, remodelando práticas tradicionais como recrutamento e seleção, tornando os processos mais eficientes e atrativos para candidatos. Além disso, é possível verificar que a automatização e a digitalização são as novas tendências, o que permite otimizar os procedimentos administrativos e, por consequência, leva a uma reestruturação estratégica por parte dos gestores e gestores de recursos humanos. Esta realidade competitiva e globalizada requer um novo perfil de liderança, focado na promoção de uma cultura organizacional inclusiva e na utilização da tecnologia como uma ferramenta de capacitação e não como substituição dos colaboradores. Através de uma abordagem qualitativa, fundamentada na revisão de literatura, o artigo analisa a transformação digital e o seu impacto direto na Gestão de Recursos Humanos (GRH), explorando a evolução histórica do fenómeno e os marcos que impulsionaram a integração tecnológica nas organizações. Foi possível apresentar uma proposta para uma correta implementação dos recursos digitais ao nível do recrutamento e seleção numa organização. Evidenciou-se o reposicionamento estratégico da GRH como um elemento fundamental para o pensamento crítico e adaptado às necessidades organizacionais, consolidando-se como um motor estratégico para o futuro das organizações. Destaca-se ainda que a transformação digital redefine as práticas GRH e exige colaboradores capacitados para desafios tecnológicos emergentes, consolidando-se como fator essencial para a competitividade das organizações num contexto global. Limitações e sugestões futuras são apresentadas no final.

Palavras-chave: Transformação digital, Gestão de Recursos Humanos, Tecnologia, Automatização, Cultura organizacional.

1. INTRODUCTION

Toms (2019) defines accounting or business scandals as a scenario or occurrence that resulted Digital transformation has been profoundly reconfiguring human resource management (HRM), introducing new technologies and strategies that change the way organizations recruit, develop and manage their employees.

In this regard, technological advancement has brought with it its tools such as Artificial Intelligence (AI), machine learning, and predictive analytics, which facilitates decision-making, reduces operating costs, and allows for more efficient talent management and retention. Digital platforms have revolutionized the recruitment and selection process, making processes faster and more accessible, while People Analytics software enables detailed analysis of employee performance, promoting data-based management. However, despite the obvious advantages, digital transformation presents some challenges, namely the adaptation of workers to new technologies, the need for constant training and the balance between automation and humanization of people management. How organizations handle these changes determines the success of digital implementation in HRM (Silva, 2022).

Digital transformation in human resources management is a highly relevant topic, especially given the various changes that have occurred over the years, such as the COVID-19 pandemic, which has driven the adoption of remote working and the need for adaptation and flexibility. In addition, it is crucial to recognize the significant advances in technology, particularly AI, which influences and revolutionizes the various processes of each organization, promoting innovation and growth. Thus, it is essential that organizations can adapt to the new developments that digital transformation brings to effective and efficient functioning for good decision-making within organizations (Martins et al, 2023).

Considering the post-pandemic period, this phenomenon will leave its mark on all individuals who experienced lockdown, causing various changes in the way they live, both personally and professionally (Maia, 2022). Consequently, digital transformations in human resource management have also undergone changes, providing organizations with the opportunity to adopt a new perspective on the flexible use of new technologies. This context has generated increased curiosity about adapting technology to create simpler, more efficient, and more effective environments. That said, there has been an increase in the adoption of remote work, leading many companies to implement this practice, which has proven effective in various situations and allows for greater flexibility on the part of employees (Silva, 2021).

Regarding technology, this has been a widely debated topic among researchers. AI has demonstrated significant applications, namely the role that applications are playing in assisting decision-making in human resource management, particularly in recruitment and selection processes (Martins et al., 2023). In this sense, AI can enable the automation of tasks, allowing professionals to focus on more strategic activities, among other advantages (Silva et al., 2019). However, it is important to note that there will always be challenges, such as helping employees adapt to technology. Therefore, organizations must try to avoid resistance to cultural change (Ferreira, 2024).

In conclusion, digital transformations have a significant impact on organizations, making humans a central element of this change (Zara et al., 2019). The ability of employees to adapt and innovate

is essential for the success of this transition, in which digital transformation is not limited to technology but represents an opportunity for human and organizational development. Thus, continuous training and innovation are crucial for the future of companies.

This article builds on this argument to explore the research question "What is the influence of digital transformation on HRM?", analyzing how digitalization and automation impact organizational processes. Additionally, a suggestion for the implementation of digital media in an organization will also be presented. This study aims to contribute to a detailed reflection on the evolution of people management in the digital age and its impact on organizational culture. By analyzing current practices and emerging trends, we seek to understand how technology can be strategically integrated, ensuring efficiency without compromising the employee's role in corporate management.

To ensure a clear understanding, the article presents a literature review, followed by the description of the methods. Subsequently, the results and their discussion will be presented and, finally, a conclusion. Finally, limitations and future suggestions will be discussed.

2. LITERATURE REVIEW

2.1. DIGITAL TRANSFORMATION

According to Bensberg, et al., (2018), the digital age is rapidly revolutionizing social dynamics, using the creation of integrative links between the various areas responsible for the management of information, data, processes and technologies. Similarly, Ershova and Holov (2018) state that technological innovations profoundly alter socio-economic processes, visibly accelerating the dynamics of these transformations. On the other hand, many countries associate the current level of their development with Digital Transformation processes, which are based on the use of emerging digital technologies, such as artificial intelligence, predictive analytics, machine learning or the internet (Aguiar, et al., 2019).

Regarding the concept of digital transformation, Mazzone (2014) states that it consists of a planned and incessant digital evolution, which covers the adaptation of companies, business management, processes, ideas or methods, both strategically and tactically. Digital transformation, for PWC (2013), constitutes a profound change in the organizational universe, being driven by the adoption of innovative Internet-based technologies (Schallmo, et al., 2021). In the conception of Vial (2019), digital transformation (DT) consists of a process that aims to optimize organizations, promoting profound changes through the integration of information, computing, communication and connectivity technologies. This process promotes a distinction in behavior in the business environment, changing internal procedures and the organizational structure, which is based on the integrated management of three pillars of great prominence, such as, culture, processes and technology. For DT to be successful, according to Perides, et al., (2020), effective planning is needed combined with cultural change management, so that employees rethink their working methods in search of greater efficiency and new business opportunities (Froehlich, et al., 2023).

According to Strachota (2020), DT uses digital technologies that require changes in the organization in terms of processes and structures, or the adoption of new negotiation models. This phenomenon, which affects all aspects of life, aims to promote innovation. It should be noted that digital transformation implies that public services operate more efficiently, intelligently and

transparently to achieve a goal by exploiting the transformed potential of digital technologies and their strategic use of data (Soares, 2022).

To summarize, according to Silva (2021), management should not promote isolated actions, within the new digital transformations, since organizations are encouraged to create a culture of continuous learning, which aligns skills for the future with the global transformation of the company and the world, ensuring sustainable evolution (Froehlich et al., 2023).

2.2. DIGITAL TRANSFORMATION: HISTORICAL CONTEXTUALIZATION

Two historical moments radically altered the organization of human societies. At first, we alluded to the structure of hunter-gatherer communities, in which hierarchy was defined by the figure of a chief responsible for social order. With the emergence of agriculture, land ownership began to play a decisive role, transforming social dynamics and paving the way for the implementation of practices such as slavery. In contrast, the Industrial Revolution, which began around 1760, marked the shift from manual production and the use of natural sources of energy to mechanization based on the steam engine, profoundly altering the economic, social, and technological structure of modern societies (Carvalhão, 2024).

In addition, with the introduction of new technologies and mechanization, there was also a remodeling of labor relations and the distribution of wealth. The specialization of labor and the gradual replacement of labor by machines gave rise to an industrial order in which immense fortunes were amassed by tycoons such as Rockefeller, Vanderbilt, Ford and Carnegie, a phenomenon that is reflected today in the rise of figures such as Elon Musk, Bill Gates, Mark Zuckerberg e Jeff Bezos (Carvalhão, 2024). At the same time, innovations such as the invention of the printing press by Johannes Gutenberg in 1436 were fundamental for the dissemination of ideas and anticipated industrial transformation. Finally, in the context of the Information Revolution, which unfolded in a short space of just 140 years thanks to the massive production of books, newspapers and other media, we witnessed the replacement of repetitive tasks by machines, driven by the Internet, promoted a continuous reconfiguration of economic and social dynamics, personalizing the user experience and reaggregating labor practices with the advance of digitalization. In this way, collaboration between humans and machines transforms not only work dynamics (Carvalhão, 2024).

With the emergence of the COVID-19 Pandemic, digital transformation has accelerated notoriously in various sectors of society (Rosário, et al., 2021). Communication has benefited from greater interoperability between systems, enabling virtualization for remote control of processes, while decentralization enabled by computing has become accessible in any location. Simultaneously, data collection and analysis began to be carried out in real time, with the ability to guide customers through positioning systems, and the integration of virtual and augmented reality technologies was also verified (Pencarelli, 2020).

In 2017, the AlphaZero system, with the emergence of AI, was already making great strides in its development, surpassing Stockfish until then considered the most advanced chess software. AlphaZero developed innovative strategies that challenged the conventional principles of human logic in chess. Additionally, the ability of AI to promote significant advances in molecular analysis and automatic natural language generation, such as in the context of scientific research, has proven effective in detecting molecular properties with therapeutic relevance, such as antibiotic

activity (Albuquerque, et al., 2023). This ability comes from the analysis of large volumes of data and the identification of complex structural patterns, in parallel, language models such as GPT-3, developed by OpenAI in 2020, and later launched in 2022 to demonstrate competence in the production of texts with a high degree of coherence and naturalness, approaching human written expression at the level of sentence and discursive construction (Kissinger, et al., 2024). Finally, the evolution of search engines is highlighted, which are no longer limited to the simple extraction of information based on keywords but are now part of cognitive models capable of simulating user behaviors, preferences and patterns. This transition represents a paradigmatic shift in the relationship between humans and technology, in which AI takes an active role in mediating and building the contemporary digital experience (Kissinger et al., 2024).

2.3. The evolution of HR with the integration of technology

The field of Human Resources has undergone significant change in recent decades, driven mainly by the integration of technology into its practices. Digitization, for example, has enabled greater efficiency, agility, and personalization in people management, reflected in the adoption of innovative systems, namely HRIS (Human Resource Information Systems), electronic recruitment, and virtual training.

Because of the Industrial Revolution, which took place in 1760, several technological changes emerged that had a major impact on manufacturing, with manual labor eventually being replaced by machines in large factory facilities (Chantre, 2024). In response to this development, the first personnel departments were created, particularly between the 19th and 20th centuries, a period in which there was significant investment in scientific management, as advocated by Frederick Taylor. It is important to reiterate that Taylor had a mechanistic view, believing that only economic factors motivated workers (Pacheco, 2009). In line with this thinking, the department's work focused on guiding and training workers, not only in their professional performance but also in personal areas such as finances, family life, health, and nutrition (Chantre, 2024).

Subsequently, to fill the gaps in Taylorism principles, the Human Relations School was founded in 1930, marking a transformation accompanied by a paradigm shift in the dominant concepts (Britto, et al., 2023). As the founder of this theory, Elton Mayo became recognized as an Australian psychologist, professor, and organizational researcher (Santos, et al., 2020). Thus, this phase represented a historical milestone between the 1930s and 1940s, corresponding to the initial phase of human resource management (HRM), a time when the value of people's emotions, motivations, and expectations was triggered (Chantre, 2024). Among the various reasons that triggered the emergence of HRM are the 1970 oil crisis, emerging technological challenges, and the transformation of professional and educational profiles, marking the beginning of a reorganization of productive structures and people management practices (Chantre, 2024).

Faced with organizational demands and the complexity of people management, HRM began to integrate technological systems such as HRIS, driven by globalization and digital transformation. According to Bangura (2024), HRIS is a strategic system that combines HRM principles with technological innovation, allowing for the centralization, automation, and optimization of functions such as recruitment, performance evaluation, benefits management, training, and professional relations. However, considering these systems under analysis, electronic recruitment emerges, stimulated by contemporary HRM theories, as a response to the demands of the digital market (Santos, 2024). In this context, virtual training, supported by technological advances, also stands

out as a strategic tool in HRM, as it allows for more flexible and effective learning experiences. It is important to note that recent studies, namely that of Borba, Bassan, and Oliveira (2023), show that the use of virtual reality in the context of professional training increases employee motivation and engagement, ensuring their safety and contributing to the development of skills in a more dynamic way in each context.

2.4. HUMAN RESOURCES MANAGEMENT: EVOLUTION OF PEOPLE MANAGEMENT IN THE DIGITAL AGE

At the beginning of the twentieth century, organizations were structures, composed of a low-skilled workforce, whose main requirement was physical effort and manual dexterity. Over the decades of that same century, a change in HRM began to take place, in which companies began to feel the need to adapt their strategies (Rua & Carvalho, 2017). This means that HRM is no longer based on just a traditional component, but rather on an approach in which members are integrated and involved, with a clear intention to improve overall results. Thus, HRM begins to be considered a fundamental element in supporting organizations, regarding their main objectives (Carvalheiro, 2011). From this perspective, "the essence of the evolution process lies in the fact that workers are now seen as a resource to be valued and not just as a cost to be minimized, being considered as one of the competitive factors of the organization" (Santos et al., 2022. p. 58).

That said, it is possible to see that HRM has been the target of an evolution, following "the change in societies, cultures, organizations and individuals" (Rua & Carvalho, 2017, p. 24), which implies, duly, an efficient management of workers, with a view to achieving the organization's goals. It cannot be evident that adapting workers to continuous transformations represents one of the main challenges of organizations, requiring high levels of proactivity, autonomy and versatility.

Thus, the application of HRM, whether "at the operational or strategic level" (Oliveira & Oliveira, 2011, p. 652), focuses, above all, on specific practices aimed at the members of the organization. That said, the importance of "external conditions (industry dynamics, economic and political conditions and the culture of the countries" and "internal (company size, competitive strategy and structural" (Rua & Carvalho, 2017, p. 28) is highlighted, which must be duly weighed and analyzed by HRM. To conclude this point, HRM plays a crucial role in the evolution of organizational performance, being a key piece for the achievement of the organization's objectives, by aligning the needs of employees with institutional goals.

After briefly understanding HRM, it is also necessary to consider the evolution of people management in the digital age. Understanding how the field of human resources has evolved over time, tracing its development to the present day, is essential to appreciating its current role within organizations. That said, during the first four decades of the twentieth century, the management of human resources in administrations focused on administrative tasks, such as recruitment and the distribution of salaries (Rua & Carvalho, 2017).

During the 1960s, in addition to administrative and union functions, the area began to dedicate itself to the definition and implementation of policies and practices related to "employee management". There is now the responsibility to create "selection methods, training programs and reward awarding systems". Thus, performance evaluation, the planning of "future labor needs greater union freedom" begins to gain importance. (Santos et al., 2022, p.57). In the 1980s, in response to transformations such as "globalization, deregulation and rapid changes" (Santos et

al., 2022, p. 58), Companies found themselves in the need to adopt strategic planning, in order to anticipate future changes and align various organizational elements, promoting increased efficiency and effectiveness of the organization. Finally, in the 1990s, the way companies organized themselves began to contribute to the evolution of HRM. Greater relevance began to be given to strategic management, which means that decisions, which are related to employees, are now directly linked to organizational planning. That is, the "adoption of human resource management practices must be consistent with the business strategy" (Santos et al, 2022, p. 58). At the same time, the incorporation of technologies in companies, driven by the increasing accessibility of the internet, contributed significantly to management and production methods.

Currently, the human resources sector makes extensive use of technology to strengthen the management and skills of the organization's members. For example, "recruitment and selection software equipped with artificial intelligence to video interview systems, with the facial recognition mechanism, being a reflection of the strong digital transition" (Santos et al, 2022, p. 29). In this context, with the evolution of technologies, which can also be referred to as the fourth industrial revolution, the main objectives are: aligning the organizational culture to facilitate changes; develop and coordinate a leadership that acts actively, aligned as an agent of transformation; and create an employee experience based on the organization's mission and values. Given this, with the introduction and evolution of technologies, the world has experienced several significant changes (Camilo, 2021).

2.5. Technology and people management

The current context is in a new era, a digital age, where technology is not just a support tool, but a partner in the management of people, talents and skills. This transformation is causing profound changes in the way organizations manage their teams, optimize processes and make decisions, making people management more agile, intelligent and oriented towards the development of employees' skills. Through the analyses of contemporary literature, it is noticeable that technology is currently used not only to automate processes, but also to improve decision-making, with a great focus on valuing human capital (Cova & Portes, 2025).

In the first instance, regarding the idea of people management, it can be understood as a set of strategic practices and policies aimed at the development, motivation and retention of employees within the organization (Chiavenato, 2014). As a central theme of this article, technology has been directly impacting on the most varied sectors, so it is important to emphasize that employees become an essential strategic factor for the organization, driving the concept of Strategic People Management (SPM) (Ribeiro & Ferreira, 2023). This approach advocates the guarantee of competitiveness, through the enhancement of good organizational performance, subsequently influencing the recruitment and selection process (Ribeiro & Ferreira, 2023). As a result, it becomes increasingly pertinent to understand how technology is based on people management, impacting organizational practices, strategies, and decisions.

In this line of work, a strategic management of people, from a technological perspective, has caused a transformation in organizational management, adhering to more up-to-date mobilities (Oliveira & Oliveira, 2024). As a result of this model, the global market enables the recruitment and retention of talent, the reduction of operating costs and the promotion of a better quality of life for employees, promoting a more competitive and adapted environment. That said, there are

new opportunities both in terms of benefits and in terms of investments in technological and digital dynamics, to keep up with the current market (Oliveira & Oliveira, 2024).

2.6. DIGITAL RECRUITMENT AND SELECTION

With the expansion of technological tools, digital recruitment and selection emerge as an efficient process for attracting and evaluating candidates. The digitalization of Human Resources processes has driven the adoption of specialized platforms, social networks, and AI, allowing organizations to modernize and optimize the search for new talent (Melo & Andrade, 2023). This new model has significantly transformed the way companies identify and select the right profiles, making processes faster and more accessible (Aguiar, et al., 2019).

Primarily, it is notorious that there is a growing number of suitably qualified candidates competing for a decreasing set of job vacancies, which intensifies the need for effective strategies that help organizations select the best profiles for their teams (Corrêa, 2021). Within this progression of ideas, in the 1990s, the concept of "e-recruitment" appears for the first time in specialized Human Resources publications, and since then it has been widely adopted both by organizations and by society in general (Corrêa, 2021).

Contemporary literacy characterizes digital recruitment as a recruitment process that uses job platforms and corporate websites to advertise vacancies and access information about potential candidates. However, this technique goes beyond the use of these tools, and it is essential to adopt strategies to attract and engage the best talents (Corrêa, 2021). In consonance, digital communication emerges as one of the great references of e-recruitment, as it is verified that "candidates are able to permanently monitor their application status for a vacancy" (Corrêa, 2021, p. 14). In this context, digital recruitment has brought a range of new trends evidenced by Sánchez, et al., (2019), namely: corporate websites (effective tools to attract candidates, by providing vacancies and relevant information about organizations); job portals (Bring together job offers from various organizations, facilitating the relationship between candidates and employers, e.g. NetEmprego and SapoEmprego); social networks (Allow you to advertise vacancies for free, in order to reach the general public) and the Video resume (Digital recruitment trend that allows the candidate to present their skills in a creative and personalized way). To start this aspect, it is considered that the main objective of e-recruitment is to attract more qualified candidates, whose profile is carefully suited to a vacancy available (Brandão, et al., 2019). It is important to highlight that it is essential that the organization provides an online form, facilitating registration and application by candidates (Brandão, et al., 2019).

As for digital selection, this, in turn, involves the use of advanced technologies to analyze and choose candidates. In this new environment, innovative forms and techniques of evaluation emerge, giving rise to the concept of digital selection or "e-selection", recognized as the electronic selection process (Alexandre, 2016). According to the authors under analysis, e-selection uses various technologies to assist companies in collecting data and assessing candidates' knowledge, skills and abilities (Corrêa, 2021). Thus, some authors refer to the existence of an intermediate phase, called "pre-selection", between recruitment and selection. This stage includes the processing of applications, communication with candidates and validation of profiles that meet the requirements of the available position. After this stage, the "e-selection" process begins, which is triggered through online tests and interviews through digital platforms (Corrêa, 2021). Firstly, regarding online interviews, they are often used by today's organizations, through phone calls or

videoconferencing (Stone et al., 2015). In addition to these types of interviews, a new concept was created, the asynchronous video interview as an alternative to traditional interviews.

After the tests and interviews, the "e-selection" process continues with the analysis of the data, where it is verified that the candidates are properly prepared for the role. In this way, candidates who have demonstrated the ability to meet the established requirements are selected (Corrêa, 2021). Once the candidates have been selected, the onboarding phase begins, in which new employees are inserted into the organization and begin to adapt to the organizational culture. In this way, those chosen are subjected to the medical admission tests. At the end of this part, a comprehensive evaluation of the entire digital Recruitment and Selection process is carried out, with the aim of identifying opportunities for improvement for future processes (Monteiro, et al., 2019).

Therefore, as technological advances become increasingly present in everyday life and in the work environment, e-selection stands not only as a trend, but as an essential strategy for organizations seeking to improve their processes and ensure the most efficient selection of talent (Monteiro, et al., 2019). By adopting these digital solutions, organizations can not only speed up the identification of qualified candidates (Monteiro, et al., 2019).

2.7. Strategic Implications

To better understand how Human Resources makes processes more efficient through digital technologies, a concrete example will be presented. Recruitment and selection platforms allow companies to quickly identify suitable candidates, while professionals apply for available positions. Meanwhile, the HR department can devote more time to analyzing profiles, selecting those most compatible with the positions in question. These platforms also facilitate talent acquisition by organizing interviews and providing online tests, eliminating the need for physical documentation (Ferreira, 2021).

When it comes to salary management, digital systems offer greater speed and accuracy in calculating salaries. They also allow recording hours worked by each employee, applying the necessary deductions and calculating the gross salary, ensuring that the figures are always organized and correct. This avoids errors that could harm both the employer and the employees themselves (Silva et al., n.d.).

The digitization of processes allows HR professionals to focus on leadership development and talent retention, while reducing the time spent on routine tasks, thus favoring a focus on actions that generate direct value for the organization (Nunes, 2025).

The standardization of processes also represents a significant added value, as it allows for the rapid implementation of changes, such as the introduction of new technologies or adjustments to procedures to respond to legal requirements. This agility is essential for multinational companies to remain competitive and be able to react quickly to market changes.

By recognizing that the employee experience reflects the organizational culture, HR leaders and managers can convert this experience into a strategic advantage, promoting employee well-being in alignment with the company's objectives. Thus, the concept of employee experience is no longer an exclusively operational issue but becomes a fundamental pillar of sustained success (Nunes, 2025).

Based on the above reflection, we can conclude that digital HR plays a strategic role in strengthening organizational agility and increasing business competitiveness. By integrating digital tools into recruitment, salary management, and talent tracking processes, companies gain operational efficiency, reduce the time spent on routine tasks, and focus their efforts on actions that generate direct value for the business. In addition, standardization and automation enable rapid responses to legal requirements and market dynamics, which is essential in an increasingly globalized and volatile business environment. By promoting practices aligned with employee well-being and a solid organizational culture, digital HR becomes not only a process manager but also an ally of sustainable growth and strategic innovation.

2.8. Automation and organizational efficiency

The automation of processes in human resources management has been an essential factor for the modernization of organizations. The advancement of digital technologies has allowed several administrative functions to be automated, reducing operational errors and improving the overall efficiency of companies.

In the present day, information and communication technologies (ICT), together with people, tools and tasks are very interconnected. According to Feldman (2003), individuals and organizations reanalyse network-based functionality modules to achieve a wide variety of objectives. Some examples are mobile phones that allow you to capture images and GPS systems that make it easier to get directions (Manzueto, 2016).

Automation consists of using technology to perform repetitive tasks automatically, without the need for human intervention, such as a program that automatically sends notifications or a system that processes payments without manual actions (Gonçalves, 2024). As a result, business process management Business Process Management Suite or System (BPMS) involves systems such as Customer Relationship Management (CRM), Enterprise Resource Planning (ERP) or even workflows, which help companies structure and optimize their operations. According to Wesk, Aalst and Verbeek (2004), a BPMS is a generic software, which means that it can be adjusted according to the design of the process. Consequently, it represents an improvement over the workflow systems popular in the 1990s, as a BPMS offers greater flexibility and control over different processes within a company (Manzueto, 2016).

Thus, Mohapatra (2009) highlights challenges of process automation, such as pressure from stakeholders, who may have high expectations; focus on essential requirements, ensuring that automation adds value; lack of management support, which can hinder implementation; lack of follow-up, which can compromise the effectiveness of automated processes (Manzueto, 2016). On the other hand, automation offers benefits such as reduction in the time needed to perform tasks; better project management, with more organized processes; high availability, because automated systems work without depending on manual intervention, that is, process automation can be extremely advantageous but requires adequate planning and support to avoid difficulties (Manzueto, 2016).

In human resources management, automation has allowed the digitization of recruitment, performance evaluation, and talent management processes. Among the main advantages of implementing automated systems, the following stand out: the reduction of errors and greater accuracy in the management of employee data (Ferreira, 2021); agility in recruitment processes,

through the use of Applicant Tracking Systems (ATS), such as Workday and Taleo (Medeiros, 2022); the automation of payrolls and benefits, ensuring greater transparency in calculations and payments (Silva, 2020); and the use of Big Data and Artificial Intelligence in strategic decision-making about talent retention and development (Santos, 2024).

According to Silva (2022), the introduction of People Analytics in HR management has allowed a detailed analysis of employee behavior, making recruitment and retention processes more efficient. Artificial Intelligence applied to talent management enables predictive and personalized assessments, allowing organizations to maintain high levels of productivity and satisfaction of their workers.

2.9. Solutions and trends

The development of new digital tools has been essential for the evolution of human resource management, promoting innovative and efficient practices. According to Silva (2022), organizations that adopt advanced technology in talent management can significantly improve employee retention and strengthen organizational culture.

The digitalization of HR processes has been supported by several solutions that automate operational and strategic tasks, the main ones being: People Analytics – Allows the analysis of large volumes of data on employee behavior, identifying patterns that can be used in strategic decision-making; Talent Management Systems – Platforms such as SAP SuccessFactors and Oracle HCM Cloud assist in the performance evaluation and professional development of employees; Robotic Process Automation (RPA) - the use of RPA in HR management allows to automate repetitive tasks, such as payroll processing and resume screening, reducing costs and time spent on administrative activities. Artificial Intelligence in Talent Management – AI applied to human resource management facilitates predictive analysis of employee performance, allowing companies to implement more effective strategies for talent retention and improvement of organizational culture; and Blockchain in Contract Management. According to Manzueto (2016), Blockchain technology ensures security and transparency in the administration of contracts and benefits, reducing fraud and administrative errors (Silva, 2022).

2.10. Challenges and barriers

2.10.1. Resistance to change and gaps in digital literacy

Resistance to change and gaps in digital literacy continue to be significant barriers to technological transformation in various social and educational contexts. Digital literacy, understood as the set of technical, cognitive, and social skills necessary to interact critically with digital environments, is not distributed equally among different population groups. Santos, Azevedo, and Pedro (2016) emphasize that digital literacy is not limited to the technical domain but also involves the ability to understand, evaluate, and produce digital content in an ethical and responsible manner. The absence of these skills generates insecurity and resistance to the adoption of new technologies, especially in educational and professional contexts where continuing education is neglected. Faria, Ramos, and Faria (2015), in conducting a systematic review of literature, demonstrate that the diversity of definitions of the concept of digital literacy hinders its operationalization, which contributes to fragmented and ineffective approaches. Lopes et al. (2021), in a comparative study between Portuguese and Spanish students, reveal that even after the pandemic, significant gaps persist in the use of mobile technologies, both by students and teachers, evidencing institutional resistance to change and pedagogical innovation.

2.10.2. Budget constraints and integration issues

Budgetary constraints and challenges in integrating planning instruments continue to compromise the effectiveness of public policies, especially in contexts of austerity or economic crisis. The coordination between the Multi-Year Plan (PPA), the Budget Guidelines Law (LDO), and the Annual Budget Law (LOA) is often hampered by technical, political, and administrative barriers. Galiza (2014), in a case study on the municipality of Nilópolis/RJ, identifies institutional fragmentation that leads to duplication of efforts and loss of efficiency in public management. Braz and Campos (2021), in analyzing the budgetary effects in Portugal, highlight that fiscal policy orientation and automatic stabilizers have a direct impact on the deterioration of the budget balance, especially in periods of crisis such as 2020. Ferreira (2024), in turn proposes reforms to the European framework for budgetary policies, advocating greater flexibility and coordination among Member States, with an emphasis on instruments such as Next Generation EU, which aim to promote sustainable and integrated economic recovery.

2.10.3. Concerns about cybersecurity and data privacy

Concerns about cybersecurity and data privacy have become central in the digital age, especially after the General Data Protection Regulation (GDPR) came into force. Protection of personal data requires an integrated approach that combines technology, legislation, and organizational culture. Alves (2022) argues that cybersecurity is an essential condition for accountability in the context of the GDPR, as it is fundamental to ensuring the confidentiality, integrity, and availability of information. Correia et al. (2017), in analyzing perceptions of cybersecurity in Portugal, reveal gender inequalities and gaps in public awareness of digital risks, which compromise the effectiveness of protection policies. Silva and Razzolini Filho (2023), in turn, warn of the ethical and legal risks of digital surveillance, especially in virtual environments where excessive monitoring can compromise fundamental rights such as privacy and informational freedom. The growing supply of digital services and the increase in data volume require critical reflection on the limits of surveillance and the need to ensure ethical practices in the handling of information.

2.10.4. New trends in human resource management

The HR sector, which was once characterized by its bureaucratic and operational nature, has started to assume a strategic role, with AI being a determining factor for the growth of companies in the context of continuous transformations. With the advancement of technologies, HR can now optimize its effectiveness, simplify tasks, and make management more agile and efficient. The implementation of AI in HR allows for a data-centric approach, improving both the decision-making process and talent management. This technology enables the automation of processes, a deeper understanding of the profile of employees and the creation of a business environment that Favors organizational growth, thus becoming an essential tool for the sustainable evolution of companies (Mendonça, et al., 2018). Technology has proven to be an indispensable solution for HR professionals involved in recruitment and selection. Studies indicate that hiring through the internet considerably reduces the costs and time involved in the process, making it possible to advertise vacancies online, digitize resumes, and search for profiles on specialized platforms (Arman, 2023; Pires et al., 2023). Although it increases the speed and effectiveness in choosing candidates, experts point out that these technological resources should not be used in isolation, and the active participation of recruiters is essential. In addition, some companies have begun to grant greater autonomy to managers in making decisions about hiring, decentralizing the function of the HR sector with the help of the internet has become an indispensable resource for the

modernization of recruitment and selection (RS) processes, enabling the use of tools such as simulations, online games, software for assessing competencies and voice analysis and diction technologies via telephone (Rankings, 2023).

Technological advancements, including AI, machine learning, computer vision, and blockchain, have profoundly influenced the market by the digitalization of processes. Within the scope of the RS process, it is evident that this innovative technology contributes to greater transparency, minimization of bias in the selection and guarantee of equal opportunities for all candidates (Rankings, 2023).

Therefore, AI has been transforming recruitment by simplifying administrative processes and increasing the effectiveness of candidate selection. Digital platforms allow you to automatically store and organize candidate information, significantly reducing the time spent by both recruiters and professionals themselves searching for opportunities. Professional social networks, such as LinkedIn, use advanced algorithms to find compatible profiles based on user interactions, eliminating the need for time-consuming searches. In addition, AI optimizes internal communication by centralizing data and avoiding repetitive requests between employees and managers. Another relevant innovation is the use of chatbots, which facilitate employee engagement by offering fluid interaction and collecting feedback on the team's concerns and expectations. AI also contributes to more personalized training, and in this way adjusts training programs to the individual needs of each employee. Through data analysis, managers are able to better assess the impact of investments on professional qualification, while digital assistants act as mentors, helping leaders to improve management (Castro & Hervé, 2023).

3. METHODES

To conduct this investigation, a qualitative and documentary approach was used, supported by two fundamental pillars: literature review and data triangulation. Introductory, in its broadest sense, qualitative research concerns a detailed analysis of real phenomena, focusing not only on data collection, but on its careful interpretation (Bogdan & Biklen, 1994). According to Flick (2004), this approach adapts to the nature of the object of study, ensuring flexibility in the choice of methods. As for literature review, it is essential in scientific research, as it allows the construction of a solid theoretical framework and deepening the understanding of a given topic (Lakatos & Marconi, 2021). Content analysis is added to this methodological review, which allows organizing and interpreting information in a systematic way, making it possible to understand the explicit and implicit meanings in the analyzed data (Bardin, 2013). Finally, regarding data triangulation, it is considered a fundamental technique in qualitative research, improving the reliability and validity of the results by combining several sources of information (Holanda & Farias, 2020).

4. RESULTS AND DISCUSSION

The analysis and discussion of the data represents an essential step in understanding the results obtained, allowing the identification of trends, patterns and implications. The information collected shows that DT has caused changes in organizational management models, particularly in HRM. According to Ershova and Holov (2018), technological innovations have reconfigured socio-economic processes, driving an acceleration in their dynamics. This phenomenon, observed in

other contexts, requires a strategic restructuring of HRM practices, particularly in the areas of recruitment and selection.

A total of 73 relevant articles were selected from various sources, including academic publications, scientific articles, and books. These sources were critically analyzed, according to the topic under study, through advanced research, which was carried out using the following descriptors: Digital Transformation and concept; Digital Transformation and relevance; Digital Transformation and Human Resource Management; Digital Transformation and history; Evolution of human resources and integration of technologies; Human resource management and evolution; Technology and people management; Digital recruitment and selection; Strategic implications and human resources; Automation and organizational efficiency; Tools and trends; Challenges and barriers; New trends and human resource management and artificial intelligence; Methods and qualitative research; Methods and literature review; Methods and content analysis; Methods and data triangulation. Most sources correspond to full text, via publisher, published in the last 5 years (2020–2025). Regarding the expanders used, these correspond to the application of related words, a search also carried out in the full text of the articles with the application of equivalent subjects. This was carried out mainly in Portuguese and English. Therefore, regarding the platform used, Google Scholar stands out as the most widely used.

4.1. Impact of AI on HRM

The emergence of AI represents a decisive milestone in technological evolution, driving advances in various areas of knowledge, especially in organizations with the creation of software and digital platforms. As Kissinger et al. (2024) argue, AI plays a key role in mediating and building contemporary digital experience, redefining the way employees and managers relate to information systems.

In the context of HRM, AI-based solutions, such as applicant tracking systems, algorithms, and behavioral analysis platforms, have transformed the recruitment process, making them more efficient and strategic (Melo and Andrade, 2023). The same authors say that the adoption of specialized platforms, social networks and AI enables organizations to modernize and optimize demand. The use of these technologies contributes not only to the automation of screening processes, but also to the personalization of the candidate's experience and talent retention.

4.2. Digital tools applied to recruitment and selection

The digitalization of processes has allowed the presentation of several technological solutions that streamline processes in the organizational environment. Among the various solutions with the greatest impact, People Analytics stands out, which allows the processing and analysis of data about candidates, facilitating the informed decision-making process by HR managers (Silva, 2022). This technology, associated with the use of digital platforms and social networks, consolidates a predictive and behavioral approach in the e-recruitment process.

In this context, a proposal for the practical application of digital transformation in the recruitment and selection process was prepared, through the implementation of the TalentHub platform.

4.3. Proposal for the implementation of digital transformation at HRM

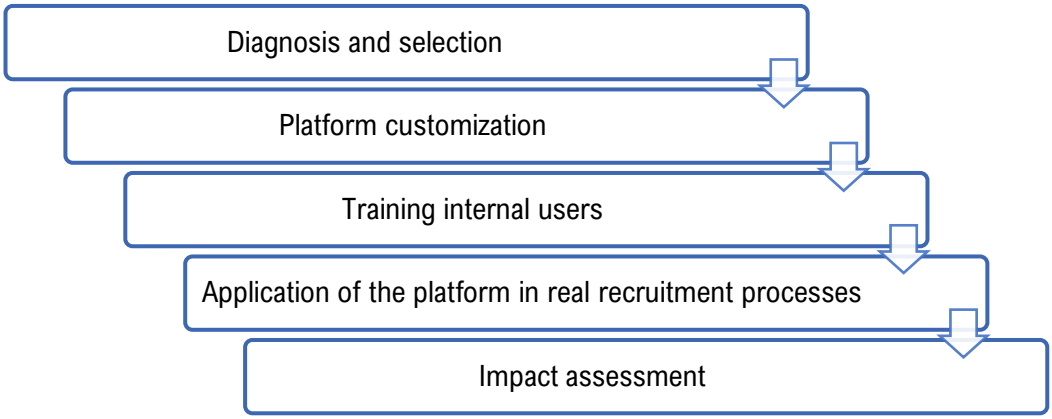
In the current context of digital transformation, it is emerging for organizations to implement innovative digital platforms in the HRM sector, aiming to optimize e-recruitment and e-selection processes. The TalentHub platform was selected as a digital solution representative of the

integration between AI and HRM. It presents itself as a solution that allows the real-time evaluation of candidates' soft skills, through behavioral analysis algorithms, promoting greater accuracy and equity in talent selection.

4.3.1. PROPOSAL DESCRIPTION

Considering the benefits associated with the adoption of innovative digital solutions in the e-recruitment and e-selection sector, the proposal consists of the experimental implementation of the TalentHub platform in a real organizational context, according to the following steps shown in Figure 1:

Figure 1 - Flowchart of the proposal for the implementation of the TalentHub platform.



Source: Owen elaboration

At an early stage, it would be necessary to select a pilot entity, chosen based on its institutional openness and demonstrated capacity to incorporate technological solutions in the field of human resources management. After formalizing the partnership, the implementation phase would begin, based on the preliminary configuration of the platform. This step would include the first adjustments, designed to ensure a progressive integration of the solution into existing workflows. The technology solution must adjust organically to the organization's practices, respecting its internal culture and the previously established decision and operation mechanisms. Later, the training of employees to operate the platform would be promoted. This training will focus on core aspects of its functioning, including the automated processing of applications, conducting digital interviews, and assessing candidates' people skills, ensuring that users are properly prepared for the effective application of technology in the professional context. The training would address key components such as automated screening of applications, conducting digital interviews and analysing candidates' people skills. This investment in the preparation of teams would be crucial for effective adoption and consolidation of practices consistent with the objectives of the initiative. After this phase, the platform would apply it in real recruitment processes, allowing us to observe, in an operational environment, its contribution to the optimization of existing practices. The analysis of their performance would be based on concrete indicators, namely the reduction of the average recruitment time, the suitability of the selected candidates with the desired profile and the retention rate verified after integration. Finally, the evaluation of the results would make it possible to systematically assess the impact of the implementation, considering both the effectiveness of the solution and its degree of acceptance among internal users and candidates. This analysis would support improvements, both in the configuration of the platform and in the methodology used, reinforcing its applicability and its added value for the organization in a real context.

7. FINAL CONSIDERATION

This research showed that digital transformation has been significantly redefining the concept and practices of HRM. It is essential to recognize that digital transformation has redefined the concept of HRM, stimulating innovation and automation of organizational processes. Among the various articles selected and analysed, it is possible to understand how technology, when well-integrated, enhances the efficiency of talent recruitment, selection and retention processes in organizations, where the use of digital platforms and using AI is witnessed (Aguiar, et al., 2019).

It was verified, more than replacing the human factor, technology should be used to enhance, requiring, however, a new profile of employee professionally trained for technological innovation and flexibility in communication and teamwork. This evolution also imposes a new strategic role for HRM professionals, as enablers of the digital transition and promoters of innovative and inclusive cultures. The proposal presented aims not only to demonstrate the functional feasibility of implementing AI-supported technologies in the recruitment and selection process but also aims to promote a global reflection on the role of digital innovation in the management and retention of an organization's talent (Silva, 2022). By integrating AI technologies into e-recruitment and e-selection processes, it promotes not only a modernization of practices, but also a strengthening of organizational capacity to attract and retain talent in a competitive and globalized environment. The data analysed suggest that the adoption of these technologies, when well implemented, represent a factor of competitive advantage and an opportunity for strategic repositioning of HRM (e.g. Kissinger et al. 2024; Melo & Andrade, 2023).

However, despite the adequacy of the qualitative approach to the object of study, there are limitations to consider. Subjectivity, inherent to content analysis, can influence the interpretation of data, requiring a critical and systematized reading. In addition, the restriction of the number of sources and the analysis of specific phenomena limits the generalization of the results to the entire organizational fabric. Thus, another of the limitations found was the use of data triangulation, considered a valuable strategy to increase the validity of research, but which can present challenges, particularly when there are discrepancies between information from different sources, making its integration complex (Holanda & Farias, 2020). To this end, a careful approach is required in the interpretation of the data, considering the context of each source and looking for strategies to justify the results obtained. Regarding the temporal and thematic delimitation of this study, the selection of articles followed previously defined inclusion and exclusion criteria, resulting in the analysis of 39 scientific studies. The prioritization of recent literature ensured an up-to-date approach that was consistent with the constantly evolving technological reality (Melo and Andrade, 2023).

Thus, this study contributes to a deeper understanding of the implications of digital transformation on HRM and paves the way for future empirical research, which can text, in a real context, the effectiveness of the digital solutions analysed, namely applied to e-recruitment and e-selection (Manzueto, 2016; Silva, 2022).

The TalentHub implementation proposal, presented here, constitutes a solid basis for pilot projects and organizational interventions oriented towards sustainable innovation and global competitiveness.

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ETHICAL PROCEDURES

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