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Integrating artificial intelligence in recruitment processes: A case study of recruitment agencies in Morocco

Houssam Baakir[1,*], Hanane Ellioua[2]

[1] *LAMSAD Laboratory, National School of Applied Sciences (ENSA), Hassan 1st University 1, Berrechid, 26402, Morocco*

[2] *ESCA Management School, Casablanca 20000, Morocco*

* Corresponding author: Houssam Baakir, h.baakir@uhp.ac.ma

ABSTRACT

As digital transformation shakes all foundations, companies are slowly beginning to realize the digital upheaval that is fundamentally transforming the way they engage with their global environment. In this era of digital transformation, artificial intelligence (AI) is making its discreet entry into our lives, accompanied by blockchain technology, massive data, and even the world of connected objects on the Internet. The wider implementation of artificial intelligence in corporations is supporting them in rationalizing their procedures and enhancing their productivity. Among the fields of intervention of AI within companies, human resources management (HRM) occupies a preponderant place. The incorporation of artificial intelligence into human resource management is transforming the way companies manage their employees. Artificial intelligence is now active in a multitude of management functions, interacting with different processes and transforming HRM functions such as staffing, training and development, and evaluation of performance. All these practices are now achieved with the help of artificial intelligence. This investigation is intended to understand how artificial intelligence and the recruitment process coexist in the Moroccan context. To accomplish this task, we conducted a qualitative survey with semi-structured interviews carried out with 16 recruitment consultants and Directors of recruitment agencies, all working with artificial intelligence. Our study on AI integration in Moroccan recruitment agencies indicates transformative impact, notably reducing biases in candidate selection and minimizing errors. AI streamlines processes, optimizing time efficiency in sourcing and candidate evaluation. Recruiters highlight its role in reshaping competency assessment, particularly in identifying soft skills. In conclusion, our study emphasis the transformative effect of artificial intelligence (AI) integration within Moroccan recruitment agencies. The findings underscore the substantial benefits and evolving landscape of AI in the recruitment domain, signaling a promising future for its continued integration and advancement in HRM practices.

Keywords: recruitment procedure; artificial intelligence; recruitment consultants; directors of recruitment agencies; qualitative analysis

1. Introduction

Within the dynamic and intricate business landscape, subject to perpetual change and uncertainty, emerging digital technologies are reshaping the economic terrain, altering organizational attributes, and transforming dynamics of our interactions with these corporations[1]. The digital transformation of businesses has major consequences for our society, company life, and the employment market[2]. (AI) may represent a significant challenge for business management processes, as it might be considered a catalyst for the fourth industrial revolution[2]. The capacity to assess this challenge accurately and in a timely manner, and to adapt management processes to changing

circumstances and opportunities, can be considered a crucial success factor for contemporary businesses. AI and its ability to boost the performance of corporate value chains have been in the news for some time[3]. Artificial intelligence is viewed as a machine with the ability to perform cognitive human functions[4] and is deployed in a range of different areas, such as HRM, Marketing, etc.[4]. Artificial Intelligence, a revolutionary technology enabling machines to operate with intelligence and sophistication, is reshaping the fabric of human existence. Presently, this technology finds application across diverse domains within the realm of management[5], with a special focus on human resources management[6]. The prevalence of artificial intelligence (AI) within organizational settings is on the rise, particularly within the area of HRM. AI relevance has grown considerably in the last few decades[6]. The management of HR embraces a wide variety of activities, such as personnel recruitment, overseeing employee performance, fostering the development of qualifications and careers, and ensuring fair compensation for employees' contributions[7]. As a mature and progressively professionalized field, HRM employs an extensive and varied array of techniques[8].

Artificial intelligence stands out as a significant field providing methodologies that can be utilized in the realm of HRM[9]. In the realm of AI, literature presents a variety of recommendations on applying particular artificial intelligence methods to distinct HR responsibilities. For example, it outlines strategies for implementing data mining tools in the process of worker selection[10], intelligent agent tools in employee development[11]; information extraction tools in workers recruiting[12], intelligent agent techniques for career development[13]; and its effect on employee turnover intention[14]. Like any technological progression, artificial intelligence introduces advantages and threats, and its integration into human resource management is no exception[6]. These aspects can be approached from two angles: that of the workers and that of the company. Our literature review will provide a background to the constructs and connections between digitization, artificial intelligence, and recruitment procedure, which we will examine in an empirical investigation.

1.1. From gradual change to radical transformation: AI and its impact on recruitment

Initially, we will delve into the pervasive utilization of digital solutions and their assimilation into the economic sphere. Subsequently, we will explore the rise of AI within the professional milieu, culminating in an analysis of the shifts in recruitment practices and their nexus with technological advancements.

1.1.1. Embedding digitalization within the corporate landscape

A major issue for corporations in the twenty-first century is how to continually evolve and adjust to a constantly evolving environment[15]. Several scholars consider this transformation to be beneficial, as it encourages corporations to constantly renew and update their internal and external offerings, but also their expertise[16]. Businesses are implementing new expertise and methods to deal with these developments. One of the main forces behind this is the emergence of digitalization, which has created a dynamic transformation within corporations[17]. Several factors are pushing corporations towards digitization. Changes in customer requirements are prompting businesses to reevaluate their communication strategies and the products and services they offer[18]. Additionally, investigators emphasize the needs of staff who are now constantly connected and expect to collaborate in their duties[19]. In addition, it highlights the determination to decrease the bureaucratic weight of traditional firms[20]. In the realm of academia, digitization remains rife with myriad interpretations, yet it is imperative to underscore the contextual landscape within which this notion evolves[21]. In this way, the construct of digitalization reflects the thought of a "digital revolution"[10]. It is positioned as a fresh stage in the conversion of firms, following in the footsteps of the previous industrial revolution where advanced digital tools contribute to the "incremental automation of all informational and transactional processes[10]". Both private and public firms harbor the resolve to craft a digital identity strategy, channeling investments into IT solutions and user stances[12]. The aim for companies is to be in a position to capitalize on technological advances to improve their efficiency and boost their productivity[22]. The scholars elucidate that achieving this objective necessitates prompt structural metamorphosis within firms[22]. Digitalization concerns

all facets of the firms. The digital transformation is now impacting a huge number of companies, and this phenomenon is set to accelerate significantly in the coming years[23]. The process of digitalization transcends mere integration of novel technologies within a corporation; it' is a radical rethinking of the traditional business structure, putting traditional vertical organizations into doubt and leading them to be transformed into horizontal decentralized organizations[23]. In this vein, many studies reinforce these conclusions, specifying that the digital transformations triggered by this digital revolution have resulted in a complete transformation of firms[24]. Digitization is leading to a questioning of the traditional corporate model, in terms of its financial, business, and social dimensions. The digital revolution is prompting private and public firms to develop digital approaches to their products, as well as to their internal processes[25]. In this context, digital development is encouraging businesses to transform their structures, their services, their expertise, and their procedures. Artificial intelligence constitutes a fresh aspect posed by the digital age, and one to which corporations will inevitably have to adjust[26].

1.1.2. The emergence of artificial intelligence: A new era unfolds

In light of digital advancements disrupting conventional norms, businesses are progressively recognizing the digital transition altering their interactions across the global economy, artificial intelligence is steadily making its presence felt in our everyday experiences[26]. Artificial intelligence is considered an inter-disciplinary topic encompassing the areas of IT, finance, physics, and business domains. Some scholars believe that human understanding is progressively compromised by artificial intelligence[27]. Many researchers highlight that all industries are experiencing the effects created by digital solutions and that businesses must anticipate the emergence of robots and artificial intelligence, whose potential is destined to develop rapidly[28]. It's not just corporations; the entirety of society must prepare live side-by-side with artificial intelligence, a technology that, according to recent surveys, is poised to become omnipresent in the future[29]. Indeed, artificial intelligence is constantly undergoing fast development, even more so as it keeps improving using deep learning methods[30]. A few years earlier, artificial intelligence was considered a subsidiary means of optimizing current practices, but it has gradually emerged as a powerful decision-making tool. A range of theories are evolving around the introduction of artificial intelligence into our world[31]. Artificial intelligence would rationalize operations that are of limited benefit to individuals, allowing them to devote their energies to activities that demand human talents, including critical thought and a sense of teamwork[32]. Contemporary research encourages firms to adopt artificial intelligence and incorporate it as deeply into their operations, with the hope of improving their efficiency. The basic principle of artificial intelligence is to lower costs by transferring time-consuming, redundant duties so that employees can devote their energies to more challenging, meaningful tasks[33]. The available studies caution firms that ignore this potential benefit. Indeed, they could find their rivals more active on the field, outpacing them. The available studies caution businesses that neglect to capitalize on this important opportunity. Indeed, they risk being outpaced by rivals who are more energetic on the topic[34]. Although artificial intelligence seems to pose a risk to jobs and the workplace more generally, it also foreshadows the creation of new jobs, as we've already observed[35]. Many authors highlight Human Resource Management and argue that artificial intelligence will enable the human resource department to reinvent itself by reducing unproductive duties and strengthening the interaction between the human resource function and workers[36]. Investigation into AI in human resource management, especially staffing, is still scarce, but scholarly papers emphasize the initial experimentation by some corporations[34]. This approach to artificial intelligence connects potential employees with positions to be offered, drawing on their expertise and qualifications. Now, artificial intelligence is rarely employed to support hiring managers in their selection process[37]. Nevertheless, it is destined to assume an increasingly significant position in human resource procedures[37], especially in staffing. As digital solutions spread and artificial intelligence gains ground in both discourse and business practice, firms are finding themselves in a delicate situation where they are forced to adjust and adapt to artificial intelligence[33]. Our exploratory research examines the integration of AI within

the hiring process. We illustrate the evolution of staffing amidst technological advancements.

1.1.3. Recruitment development: Trends and perspectives

According to Espinosa et al.[38], recruitment is one of the management acts that has most acclimatized to the digital revolution, demonstrating great adaptability in both form and content. It is therefore fertile ground for artificial intelligence. Numerous scholarly articles delve into the ways in which artificial intelligence contributes to enhance the subsequent phases of the recruitment cycle: recognizing, choosing, and keeping individuals with exceptional talent[39]. Artificial intelligence stands as the emerging cornerstone in the realm of recruitment. Through artificial intelligence, recruiters have the potential to filter through vast data sets to determine fitting candidates. Artificial intelligence has the capacity to analyze social media data, providing insights into a candidate's values, beliefs, and attitudes[39]. By utilizing artificial intelligence, recruiters gain indicators of personality traits and suitability that go beyond conventional resumes. Artificial intelligence operates impartially, ensuring equitable screening of resumes by affording equal consideration to all candidates[40]. The synergy between humans and machines is becoming increasingly fruitful due to the advent of artificial intelligence. The human aspect in recruitment remains indispensable, as recruiters are required to grasp, decipher, and interview candidates to ascertain the ideal combination of empathy and emotional intelligence[40]. Artificial intelligence accelerates the recruitment procedure, employing artificial intelligence driven Bots to connect with candidates' post-application submission, address inquiries, and actively involve candidates throughout the hiring journey[40]. The development and change in recruitment imposed by technological progress[41] demonstrate that it is an appropriate management act for innovations and for artificial intelligence. The latter is an increasingly popular method for optimizing the search for candidates[42]. Like any technological progression, artificial intelligence introduces advantages and threats, and its integration into human resource management is no exception[6]. These aspects can be examined from two perspectives: that of the employees and that of the company. Noteworthy potential benefits include:

For workers, automating tasks that are repetitive and consume a significant amount of time enables HR officers to concentrate on responsibilities that contribute value and demand distinctive qualifications and capabilities[41]. Minimizing errors through the utilization of artificial intelligence additionally enhances decision-making by furnishing superior and more adeptly processed information[43]. For corporations, artificial intelligence translates to heightened efficacy and productivity, streamlining administrative procedures, and diminishing correlated expenditures[44]. It facilitates the engagement of potential candidates by reaching out to people who are not looking for a job but who might be interested in the opportunity[45]. Another crucial aspect for corporations involves enhancing communication between their workers, the rise and transformation of recruitment brought about by technological advances highlights the relevance of recruitment as a management instrument for creativity and artificial intelligence[41]. With the imperative to adjust to emerging technologies and the changes ushered in by the digital revolution, the recruitment procedure is poised for rapid evolution[45]. Amidst this revolution, artificial intelligence emerges as a burgeoning technique for enhancing candidate exploration[45]. Corporations are encouraged to embrace and assimilate this novel technology to sustain competitiveness and avoid being outpaced by rivals[41]. Considering the potential effect of AI on labor dynamics and organizational structure, our aim is to provide insight into recruitment, a vital and fundamental process for businesses, by exploring the role of artificial intelligence. It seems relevant to us to question the place of artificial intelligence. Is artificial intelligence harmonious with recruitment? What value does it bring? While Desbiolles[46] suggests a state of coexistence, our focus is on examining the symbiosis between AI and the recruiter. Moreover, there are myriad performance concerns encompassing the volume of applications managed, the efficacy of the screening process, engagements between the recruiter and candidates, the candidate's perception, and the alignment between the selected profile and the company's expectations[47]. Additionally, in our investigation, we ponder the extent to which artificial intelligence serves as a catalyst for enhancing recruitment performance.

This investigation examines the relationship between AI and recruitment, focusing on the performance of the recruitment process. We explore the impact of AI on recruitment efficiency of agencies expectations. In response to our research inquiry, we suggest conducting an exploratory and qualitative investigation to develop a case study for gaining deeper insights into a novel and presently peripheral phenomenon. The qualitative dimension of our study provides a close connection to the field and addresses its operational complexities.

2. Materials and methods

2.1. Methodological choice

To answer the question of how AI can coexist with the recruitment process, we conducted an empirical study based on an exploratory qualitative approach. it will help us to enhance our learning about the constructs examined in the investigated corporations. In fact, qualitative research delivers powerful elucidation and clarification focused on processes that are grounded in the context of the local environment[48]. We have chosen the case study method, which can be described as "empirical research that studies a contemporary phenomenon in a real context, where the boundaries between phenomenon and context are not clear, and in which multiple empirical sources are mobilized"[49]. Our choice was based on several criteria mentioned by Hlady Rispal[50] such as representativeness, in fact, by exploring the diversity of these cases, we can extend the findings beyond the specific instances and draw broader conclusions. Also, the chosen cases need to provide in-depth and detailed analyses of each specific case, employing rigorous analytical techniques. this will help us to understand the contribution of AI on recruitment process.

2.2. Selection of sample and population

Our exploratory investigation focuses on Founding directors of recruitment agencies and recruitment consultants, which is justifiable by multiple reasons. Recruitment consultants and founding directors of recruitment agencies have in-depth expertise in the recruitment field. Their professional experience enables them to provide rich and informed perspectives on the employment of AI in the recruitment cycle, these interviewees occupy a central position in the management and execution of recruitment processes within recruitment agencies. Their participation is crucial to understanding how AI is integrated, accepted and used in different phases of recruitment. Founding directors of recruitment firms are often responsible for the company's strategic vision. Their opinions can provide vital information on how artificial intelligence aligns with the company's overall recruitment objectives. Recruitment consultants are directly involved in the candidate selection process. Their perspective on the application of AI in skills assessment, candidate screening and decision-making can provide great insights into the benefits and challenges of this technology. By interviewing both consultants and founding directors, we'll get a diversity of opinions. Consultants can offer practical insights based on their day-to-day experience, while founding directors can provide more global and strategic perspectives. **Table 1** summarizes the information from our interviews. These interviewees were chosen using the non-probability sampling technique (convenience sampling) for practical reasons of accessibility. We studied a group consisting of 8 female and 8 male participants, with a mean age of 39 years, an average professional experience of 15 years, and an average seniority of 8.5 years.

Table 1. Characteristics of our sample.

Gender	Age	Years of experience	Seniority	Current position
Man	35	10	4	Recruitment consultant
Woman	55	31	14	Director of recruitment agency
Woman	40	15	12	Director of recruitment agency
Man	34	12	5	Recruitment consultant
Man	50	26	15	Director of recruitment agency

Table 1. (*Continued*).

Gender	Age	Years of experience	Seniority	Current position
Woman	30	6	2	Recruitment consultant
Man	37	14	7	Recruitment consultant
Woman	45	22	13	Director of recruitment agency
Man	38	12	11	Director of recruitment agency
Woman	41	14	12	Director of recruitment agency
Woman	32	7	2	Recruitment consultant
Woman	39	15	3	Director of recruitment agency
Man	36	11	6	Recruitment consultant
Man	46	24	15	Director of recruitment agency
Man	42	17	10	Director of recruitment agency
Woman	34	9	5	Recruitment consultant

Source: Compiled by the authors.

2.3. Data collection

16 semi-structured face-to-face interviews, with an average duration of 42 min, were carried out at the recruitment agencies with Recruitment consultants and Directors of recruitment agency. The semi-structured interview guide we administered covers a range of topics and uses open-ended questions to foster the spontaneity of the interviewees. Our interview guide consisted of several questions inviting respondents to present their backgrounds, their professions, the firms, their visions of recruitment, the digitization of the profession, their perceptions of AI, the changes brought about by AI, the advantages and strengths of using AI. A test interview was done to check the interview guide that we have created. It was not coded or interpreted.

Upon examining the thirteenth interview, it became evident that the data gathered is repetitive, and the subsequent interviews merely recapitulate information already disclosed earlier.

2.4. Results analysis method

Our analytical work was orchestrated around a thematic analysis which will allow us to reduce the data[51] to reformulate the content in a condensed and formal manner, also because it is the most employed in analyzing interviews. To do this, we used NVIVO 12 software, which is qualitative data processing software. The coding carried out with the software "NVIVO" allowed us to identify 5 variables which are: Objectivation in Recruitment; Minimizing the Margin of Error; Time Minimization; Optimizing the Competency and Adjusting to Change. The analysis was done according to word cloud. The results take the form of a word cloud and show the frequency of the words used by respondents. To ensure the credibility of our coding, we employed an independent PHD student as a second encoder for the study.

3. Results

3.1. Objectivation in recruitment: Fair and well-founded choices

The interviewees questioned stated that the present approach helps to prevent value judgments, at least at the beginning of the procedure. The initial filtering is performed by the system, and the interviewees claim not to have any personal preconceptions about the applicants. Artificial intelligence helps interviewers align closely with the client's expectations regarding the machine's logical reasoning, devoid of subjective judgments, aiming solely to achieve optimal outcomes. Consequently, for those being interviewed, AI serves to reduce discrimination and directs attention toward assessing the candidate's abilities. "AI proves effective in countering potential discrimination during the initial selection phase." "AI mitigates these initial biases by reasoning objectively, basing its decisions on clear criteria." "Unlike humans, it always thinks in terms of skills,

excluding any influence of personal preferences linked to age or gender."

3.2. Minimizing the margin of error for enhanced accuracy

Utilizing AI in the recruitment process significantly reduces the likelihood of errors in selecting successful candidates. Consultants highlight that AI enables them to streamline their work by managing a vast amount of information and overcoming constraints like time and competition, ultimately enhancing their performance. Consultants indicate that "Sometimes we are overwhelmed by an excess of information, and it becomes difficult to discern which ones are truly essential to keep". Interviewees often highlight that AI rationalizes decisions efficiently, in contrast to human intelligence, which, especially during prolonged consultations, tends to generate numerous inquiries "Artificial intelligence automatically detects affinities between profiles. I'm not saying that we, as human beings, are incapable of doing this, but unlike the machine, we tend to burden ourselves with too many questions or not always decipher the subtleties between the lines". Despite their reliance on technology, the consultants still exercise caution and provide qualifications for their comments. They emphasize that they actively monitor the profiles chosen, making it clear that they do not unquestioningly rely on the machine and remain vigilant in their selection process « we don't trust the machine blindly. The AI only takes care of the first sorting, and we remain attentive to the selected profiles. It is our human expertise that comes into play to evaluate these profiles in depth ». In the management of excluded profiles, a referent plays a crucial role, ensuring the quality and accuracy of selections. If a candidate from the CV library is repeatedly excluded, an alert is automatically generated. This procedure aims to trigger an in-depth investigation of the reasons for rejection, thus emphasizing the importance of human supervision in the process « If a candidate from the CV library is excluded more than three times on different offers, we receive an alert in order to control the reasons for rejection otherwise we trust the machine which is based on reliable criteria discussed in advance ». Thus, the collaboration between the human referent and the artificial intelligence makes it possible to combine the precision of the criteria established upstream with the flexibility necessary to deal with specific individual situations.

3.3. Time minimization

One of the initial observations arising from the feedback of our participants revolves around the time efficiencies brought about by artificial intelligence. Indeed, within the context of our semi-structured interviews, it becomes evident that artificial intelligence is employed from the initial phase of the hiring process, specifically in sourcing. The objective is to "Thanks to the introduction of artificial intelligence into our recruitment process, we have seen a significant reduction in the time needed to sort and evaluate applications. AI algorithms have enabled faster analysis of CVs, allowing our team to focus on more qualified candidates early in the process". In fact, all the consultants we met and interviewed pointed out that they are now reducing the time they spend on searching for new profiles: "Before, searching for profiles took a lot of time, but now, thanks to our new methods, we have considerably reduced the time spent on this task". Agencies operate AI-managed platforms where applicants record data which is then processed mathematically and added to a database. Consultants indicate that "Thanks to our high-performance AI, we optimize the matching process, whether within our in-house CV library or during our in-depth investigations on social networks to spot exceptional profiles. This technological approach revolutionizes the search process by speeding up the pre-selection of candidates". Additionally, recruitment firms have AI-powered chatbots that efficiently respond to candidate queries regarding the company, job postings and interview logistics, allowing them to streamline their information gathering process and save valuable time.

3.4. Optimizing the competency management process

From our interviews, we can see that interviewees highlight the concept of competence, with particular focus on candidates' interpersonal skills, otherwise known as "softskills". Recruiters have no objection to this, arguing that all competencies can be described, and that AI provides a description from variables that are

finally noticeable to all. Moreover, the recruiters surveyed argue that AI has the capacity to identify soft skills more easily. For interviewees, AI provides a deep interpretation of job applications, with a more accurate and analytical focus: "Our matching is structured around criteria that we define in advance, so it is based on our insight. The system initially follows the same guidelines as a human recruiter but excels in generating significantly more matches than a human could achieve". For consultants, AI enables a sharper perception of nuances, facilitating a more discerning identification of soft skills by reading between the lines: "This speech analysis serves as a compelling illustration of the technological advancements within our field. The depth of the candidates' lexicon is effortlessly recognizable […] We will also ensure the cohesion of the speeches, we will also examine the position taken by the candidate, his level of confidence, as well as the clarity and coherence he maintains throughout the interview". This is how the profession was changed for our interviewees, who were progressively free of repetitive and uninteresting tasks: "AI has transformed our profession [...] my whole activity is about identifying the appropriate talent, my instruments are gas boosters"; "our focus is much more on qualifications, we work by qualifications and around qualifications".

3.5. Embracing evolution: Navigating changes and staying agile

For our interviewees, AI allows recruitment firms to adjust to organizational changes. they note that recruitment has been strongly influenced in the past few years, and that it is crucial for firms to upgrade their processes and equipment to cope with the transformations induced by several drivers, such as digital technology and the new generations: "AI is a powerful way to remain in the competition". Recruiters explain that AI makes it easy to adjust to new generations. AI helps our recruiters to identify the new generations who are mostly on social networks: "by employing our tools, we stay credible in the eyes of an all-digital workforce that will be looking to their firms for an interest in new technology". In addition, they point out that applicants are increasingly turning away from job opportunities, and that it's up to recruiters to find them if they want pertinent candidates who, thanks to social media, are increasingly obvious.

4. Discussion

The interview findings in the Moroccan context highlight that artificial intelligence (AI) significantly transforms recruitment by eliminating biases in the initial candidate selection. Interviewees emphasize AI's adaptability to client criteria, optimizing outcomes and promoting an objective, skills-centric assessment process. Notably, AI's role in reducing discrimination is underscored, as it mitigates biases related to age, gender, or image. The overall impact reflects a paradigm shift in recruitment practices, showcasing AI's effectiveness in fostering equity and objectivity within the Moroccan job market, this is in line with the work of Paillé and Mucchielli[52] which proves the reduction of discrimination in the recruitment process using artificial intelligence.

The findings from consultants in the Moroccan recruitment context reveal that the integration of artificial intelligence (AI) significantly reduces errors in candidate selection. Consultants highlight AI's ability to efficiently manage vast information, overcome time constraints, and enhance overall performance. While AI streamlines decision-making by automatically detecting affinities between profiles, consultants emphasize their active role in the process, underscoring that AI is responsible for the initial sorting. The collaboration between human referents and AI is crucial, allowing for a nuanced balance between the precision of predetermined criteria and the flexibility needed for individualized assessments. The study emphasizes that AI serves as a valuable tool, but human supervision remains essential for ensuring quality and accuracy in the recruitment process in the Moroccan context, this aligns with the findings of Karaboga and Vardarlier[53], whose research demonstrated that the integration of artificial intelligence significantly mitigated errors in the recruitment and selection process.

The participant feedback in our study on the integration of artificial intelligence (AI) in the recruitment

process reveals a consistent pattern of substantial time efficiency gains and transformative shifts in traditional practices. The use of AI algorithms, particularly in the initial phase of sourcing, has led to a significant reduction in the time required for sorting and evaluating applications. Consultants universally noted a streamlined process, emphasizing faster analysis of CVs and an expedited identification of qualified candidates. The adoption of AI-managed platforms and high-performance algorithms has optimized candidate matching within internal databases and social networks and has also revolutionized the search process. These findings suggest that the incorporation of AI represents a paradigm shift in recruitment practices, showcasing its potential to reshape the landscape and position Moroccan firms at the forefront of technological innovation in the industry. This coincides with the conclusions drawn by Tasheva and Karpovich[54], whose study highlighted that the incorporation of artificial intelligence has considerably diminished the duration of the recruitment and selection process.

The insights garnered from our interviews shed light on a paradigm shift in the perception and utilization of competencies, particularly emphasizing the significance of interpersonal skills, often referred to as "soft skills." Interviewees underscore the unanimous acknowledgment by recruiters that AI, by offering descriptions based on discernible variables, aids in providing a comprehensive understanding of competencies, including intricate soft skills. Recruiters assert that AI not only aligns with their predefined criteria but also excels in generating a multitude of matches beyond the capacity of a human recruiter. Notably, interviewees view AI as a tool that provides a more profound interpretation of job applications, showcasing an enhanced analytical focus. Consultants attest to AI's ability to recognize nuances in candidates' speech patterns, enabling a sophisticated identification of soft skills by discerning subtleties in language use, confidence levels, and overall coherence during interviews. This transformative impact is reflected in the evolving role of recruiters, who increasingly find themselves liberated from mundane tasks and redirected towards a more strategic focus on talent identification and qualification-based assessments. This in line with the work of Tasheva and Karpovich[54] who urge that the integration of AI, has redefined their professional landscape, enabling a concentration on the essence of qualifications and ultimately reshaping their approach to talent acquisition.

Finally, it is evident that AI plays a pivotal role in enabling recruitment firms to adapt to dynamic organizational changes. The feedback from interviewees underscores the profound influence of AI on recruitment practices in recent years, emphasizing the necessity for firms to upgrade their processes and tools. The transformative impact of digital technology and the evolving expectations of new generations are identified as key drivers necessitating such adaptations. The interviewees highlight that AI not only facilitates the adjustment to new generations but also proves instrumental in identifying and engaging with candidates predominantly active on social networks. This strategic use of AI ensures that recruitment practices align with the preferences of an increasingly digital-savvy workforce. Moreover, the observation that applicants are shifting away from traditional job-seeking channels underscores the importance of recruiters leveraging AI to proactively identify and attract suitable candidates through the prevalent use of social media. Consequently, our findings align with the observations made by Raveendra et al.[55], whose research underscored that the integration of AI has significantly supported corporations in adapting to changes within their structure.

5. Conclusion

In conclusion, the introduction of AI in the staffing process within the Moroccan context has proven to be a transformative and impactful endeavor. The empirical study conducted through interviews with founding directors of recruitment agencies and recruitment consultants reveals several key insights into the profound changes brought about by AI in the realm of HRM. The study emphasizes that AI serves as a powerful tool for mitigating biases in candidate selection, fostering equity, and objectivity in the hiring process. The ability of AI to adapt to client criteria and optimize outcomes is highlighted, emphasizing its role in promoting a skills-centric assessment process. Furthermore, the study underscores the significant reduction in errors in candidate

selection achieved through the integration of AI. While streamlining decision-making and automating the initial sorting process, the collaboration between human referents and AI is deemed crucial for maintaining a nuanced balance between precision and flexibility. The findings also shed light on the substantial time efficiency gains facilitated by AI, particularly in the initial phase of sourcing. The use of AI algorithms has expedited the analysis of CVs, enabling recruiters to focus on more qualified candidates early in the process. The adoption of AI-managed platforms and chatbots has optimized the candidate matching process and streamlined communication, enhancing overall efficiency. Moreover, the study reveals a paradigm shift in the perception and utilization of competencies, with a particular focus on soft skills. AI is recognized as a valuable tool that provides a more profound interpretation of job applications, facilitating a discerning identification of soft skills by reading between the lines. Lastly, the study highlights the strategic role of AI in enabling recruitment firms to adapt to dynamic organizational changes and stay competitive. The transformative impact of digital technology and the evolving expectations of new generations necessitate the strategic adoption of AI to align with the preferences of a digital-savvy workforce. In conclusion, the findings affirm that AI is not just a technological advancement but a strategic imperative for staying competitive in the evolving landscape of human resource management. The collaboration between human expertise and AI capabilities emerges as a key theme, emphasizing the need for a balanced and integrated approach for optimal outcomes in the recruitment process. The investigation offers valuable an important vision for practitioners, managers, and researchers seeking to understand the implications of AI in HRM within the Moroccan context and beyond.

6. Limitations of the study

Despite the significant contributions of this investigation on the introduction of AI into recruitment procedure in Morocco, it is important to recognize several methodological limitations. First, the exclusive focus on recruitment agencies in Morocco limits the generalizability of the results to other geographic or organizational contexts, where recruitment practices and AI adoption may differ significantly. Additionally, study participants may have been influenced by response bias, leading to an overestimation or underestimation of the true role of AI on staffing procedures. In addition, the qualitative nature of the study, based on semi-structured interviews, has limitations related to the subjectivity of the researchers in the analysis and interpretation of the data. Finally, novelty effects related to the recent integration of AI into recruiting suggest that participants' perceptions may evolve as the technology advances and becomes more prevalent, which could influence their responses. Significantly, the absence of candidate perspectives in our study is also a limitation. Candidate perspectives and experiences are essential for a holistic understanding of the impact of AI on recruitment processes, as they are the end users of AI-powered systems. Their testimonials could provide valuable insights into their user experience, identify potential biases, evaluate the effectiveness of AI-based recruiting technologies, and provide perspectives on fairness and ethics. The absence of these perspectives in our study highlights the importance of including candidates in future research to obtain a more complete picture of the impact of AI on recruiting process. These considerations highlight the importance of contextualizing the results of this study and considering additional research to deepen the understanding of the impact of AI on recruitment processes in various environments.

7. Future work

In future research, it is imperative to delve into the ethical considerations associated with AI in recruitment. This would involve a comprehensive exploration of potential biases and ethical concerns stemming from AI algorithms, with the aim of proposing robust frameworks that ensure fairness, transparency, and accountability in the utilization of AI in HRM. Additionally, expanding the scope to include the perspectives of both employees and employers can offer a more holistic understanding of the impact of AI-driven recruitment processes. Conducting a comparative analysis between organizations with varying degrees of AI integration would provide valuable insights into differences in recruitment efficiency, employee satisfaction, and overall

organizational performance. Furthermore, exploring the customization capabilities of AI algorithms, investigating the continuous training needs of HR professionals for effective collaboration with AI tools, and assessing user experiences and acceptance within diverse cultural contexts are crucial areas for future exploration. Finally, extending the study's geographical scope to encompass international perspectives on AI in HRM would shed light on how cultural and regulatory variations influence the adoption and effectiveness of AI-driven recruitment practices on a global scale. Finally, non-participant observation offers an objective and in-depth perspective on the real practices of integrating artificial intelligence (AI) into recruitment processes, making it possible to identify gaps between theory and practice. It provides insights into the interactions between recruitment professionals and AI technologies, as well as candidates' experiences with these systems, enriching the overall understanding of the impact of AI on recruitment. By incorporating it into future research, a completer and more nuanced picture of these subtle dynamics can be obtained, thereby complementing data obtained through other collection methods.

Author contributions

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Conflict of interest

The authors declare no conflict of interest.

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