Artificial Intelligence in Recruitment: A Case Study of Moroccan Recruitment Agencies

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Abstract: *The integration of artificial intelligence into recruitment processes has brought substantial improvements to recruiters' routines, thereby enhancing the efficiency of this function. It is in this context that this article addresses this theme, delving deeply into the significance of AI usage and its impact on the tasks of recruitment managers. Furthermore, this article aims to highlight the various applications of AI throughout the different phases of the recruitment process. It also seeks to decipher the perceptions of recruitment managers regarding the use of this technology while identifying the benefits it provides as well as its limitations. To achieve these objectives, a qualitative approach was adopted, relying on semi-structured interviews conducted with around ten recruitment managers from Moroccan and multinational recruitment agencies. The results from the survey indicate that artificial intelligence is emerging as a promising tool in the field of recruitment in Morocco, capable of enhancing the overall efficiency of the recruitment process. Nevertheless, it is imperative to implement it thoughtfully to avoid potential limits.*

Keywords: Artificial Intelligence (AI); Machine learning; Recruitment; Sourcing

1. Introduction

At the present time, we are witnessing multiple changes that are infiltrating all spheres of our lives. This is triggered by the advent of new digital technologies that are asserting themselves in every detail of our daily lives, bringing about radical transformations in our relationships with others, with life, with time, and with the entire world. Our environment has become inundated with machines and tools endowed with significant technological power, to which we are exposed throughout our day, whether in personal life or professional settings. We find ourselves facing situations that require us to demonstrate certain adaptability skills.

These technological tools have gained widespread use in various domains. Their utilization by humans has been harnessed with the aim of making our lives easier and management processes less costly and more efficient. Their utility has been proven in crisis contexts; some have been successfully experimented with during the pandemic period in the fields of education, medicine, commerce, and work, particularly within enterprises.The digital era has brought about numerous challenges of agility, competitiveness, and innovation that companies are required to address. Digitalization emerges as the optimal solution to withstand these profound changes in the world of work.

Artificial intelligence, virtual reality, Big Data, process automation, Machine Learning... are all rapidly emerging technologies within companies, eliciting a certain level of concern among professionals regarding the concealed reality of their usage within the enterprise. This concern arises due to the promises they hold to bring about remarkable transformations in the way of working, interacting, and making decisions.

Artificial Intelligence (AI) holds a central position both in the academic sphere and in managerial press, which labels AI as a technology that will be marked as revolutionary in this century. Some authors assert that AI has the capacity to revolutionize the human within entities (Desbiolles, 2019).

Often, due to the qualitative nature of personnel management, decisions related to human resources have been made based on the feelings, experiences, and intuition of managers (Johnson et al., 2022; Ekka, 2021).

As the business landscape becomes increasingly competitive and complex, the analytical role of human resources in identifying and utilizing the most qualified talents becomes more essential (Rousseau and Barends, 2011; Hamilton and Sodeman, 2019). Moreover, technological advancements such as machine learning, cognitive computing technology, and artificial intelligence (AI) enable HR professionals to analyze vast amounts of data to address complex HR challenges and make informed decisions (Chowdhury et al., 2023; Johnson et al., 2022; Zeidan and Itani, 2020).

The integration of artificial intelligence into recruitment processes has brought substantial improvements to recruiters' routines, enhancing the efficiency of this function. With this perspective in mind, the current article addresses this theme by thoroughly exploring the significance of AI utilization and its impact on recruitment manager tasks. Furthermore, this article aims to highlight the various applications of AI throughout different phases of the recruitment process. It also aspires to decipher the perceptions of recruitment managers regarding the use of this technology, while identifying the benefits it provides as well as its limitations. To achieve these objectives, a qualitative approach has been adopted, relying on semi-

structured interviews conducted with around ten recruitment managers from Moroccan and multinational recruitment agencies.

This article begins by examining definitions and concepts related to the field of artificial intelligence. Subsequently, we present the use of AI in the recruitment process and its relevance for professionals in the field. The following section elaborates on the methodology employed to conduct our study. The final part is dedicated to the presentation and discussion of the results derived from our interviews.

2. Literature Review

2.1 Definition of concepts

AI is a science that falls within HR Analytics. The objective of human resources analysis is to assist organizations in achieving their strategic objectives by relying on evidence-based research in human resources (Johnson et al., 2022; Margherita, 2021). It involves the systematic identification and quantification of human factors in organizational outcomes, with the aim of making better decisions that can enhance HR practices and organizational performance (Van den Heuvel and Bondarouk, 2017).

Definitions of HR analytics vary among researchers (Tursunbayeva et al., 2018), and the concept itself has been attributed with multiple somewhat interchangeable terms, such as people analytics, talent management analytics, human capital analytics, algorithm-based HR decision-making, and workforce analytics (Nocker and Sena, 2019; Leicht-Deobald et al., 2022; Saputra et al., 2022). These various terms all refer to the use of data in HR but may have different objectives depending on the application domain (Giermindl et al., 2022).

For some, HR analytics simply refers to descriptive HR metrics, while for others, it signifies sophisticated predictive modeling procedures (Bassi, 2011). More recently, Levenson and Fink (2017) suggest that HR analytics has unfortunately become synonymous with anything related to numbers, data collection, and measurement in the HR context.

More recently, Marler and Boudreau (2017) conducted an evidence-based review using an integrative synthesis approach and argued that HR analytics goes beyond HR measurements and employs a set of more sophisticated analytical tools to illuminate HR strategy and evidence-based decision-making.

Falletta and Combs (2021) proposed a definition of HR analytics based on a survey of practitioners in 220 distinct Fortune 1000 companies. This study identified common elements such as measurements, external references, decision-making, value creation, advanced statistical analysis, and data visualization, to emphasize that HR analytics is a "process" with interconnected stages.

Van den Heuvel and Bondarouk (2017) also characterized HR analytics as a process rather than a tool, arguing that the success of HR analytics practices relies on well-formulated research questions, a robust dataset, and effective analysis.

In the field of human resources analytics, a gradual progression can be observed in the use of data and technology within organizations (Margherita, 2021). This evolution is manifested through several layers of analysis, namely descriptive analysis, which summarizes past or current issues, predictive analysis, which identifies potential future issues, and prescriptive analysis, which guides organizations towards the most effective action plans.

While descriptive analysis synthesizes the present state, predictive analysis employs techniques such as correlation analysis, regression, and structural equation modeling to address "what if" questions (King, 2016). Data-informed decision-making can also encompass conducting algorithm-based experimental studies, precisely identifying how human resources data influence organizational performance (Fitz-Enz and John Mattox, 2014; Gelbard et al., 2018). Many organizations are still transitioning from descriptive or predictive analysis to prescriptive analysis, representing the pinnacle of fully harnessing data technology in the context of human resources (Gelbard et al., 2018; Song and Kim, 2020).

Network technologies such as 5G and IoT can collect diverse HR data, which can be stored using cloud technology and efficiently analyzed using automation technologies such as machine learning and AI (Raisch and Krakowski, 2021; Shrivastava et al., 2018; Chung and Kim, 2020). AI is one of the tools utilized in HR Analytics.

The origins of artificial intelligence date back to World War II, thanks to the work of British mathematician and computer scientist Alan Turing. In 1950, Turing highlighted that if an individual interacting with a machine cannot distinguish whether they are communicating with it or a human being, they will attribute some form of intelligence to the machine (Stuart and Peter, 2016). The term "artificial intelligence" was introduced by John McCarthy in 1956. McCarthy and his colleagues wrote a proposal to the Rockefeller Foundation to fund their project aimed at exploring the "possibilities for implementation of intelligent machines." It was in this proposal that the term "artificial intelligence" first appeared (Jain and Research, 2018).

As we continued our research in the literature, we found that defining artificial intelligence is not an easy task, as there is no universally accepted definition. Cédric Villani made observations regarding this point in the introduction of his report to the Government[1]: "defining artificial intelligence is not an easy thing," and he also pointed out in the same report that it is "illusory to seek a clear definition."Despite the absence of unanimous agreement regarding a common and official definition of this concept, it doesn't hinder us from discussing the definitions that we have derived from the literature.

Artificial intelligence can be defined as: "The automation of

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[1]Villani C., "Giving Meaning to Artificial Intelligence, for a National and European Strategy," Report to the Prime Minister, March 2018.

activities associated with human reasoning, such as decision-making, problem-solving, learning..." (Bellman, 1978).

However, it is possible to provide a more comprehensive definition of artificial intelligence. Artificial intelligence represents a scientific discipline that aims to develop systems capable of simulating human thinking, acquiring the ability to learn, and performing tasks requiring intellectual capabilities similar to those of humans (Balaban and Kartal, 2015). The goal is to empower machines to perform human-like actions, such as perception, memory retention, understanding, inference, comparison, decision-making, reflection, generating suggestions, and initiating actions (Shabbir and Anwer, 2018). Furthermore, artificial intelligence also unveils the mechanisms of our brain's functioning, embodying a reflection of the information stored in our neurons (Palm, 2012).

It is possible to classify artificial intelligence into three distinct types. Firstly, narrow artificial intelligence (Narrow AI), also known as weak AI, focuses on specific tasks, services, or domains (Frank et al., 2019). Secondly, there is general artificial intelligence (AGI), which is characterized by its ability to replicate human cognitive activity in a way indistinguishable from human behavior (Strelkova, 2017).

Finally, super artificial intelligence (ASI) goes beyond mere imitation of human intelligence to display intelligence superior to human systems. Currently, Narrow AI is the most widespread form, but over the next decade, it will accumulate data and the rapid generation of other forms of AI will also become more pronounced (Zhisheng, 2023).

2.2 The Use of AI in the Recruitment Process

A specific application of human resources (HR) analytics in the field of recruitment and selection is the use of data-driven job fit (Albert, 2019). By examining data related to the characteristics, skills, and experiences of candidates selected for specific positions, HR analysts can develop more precise job descriptions and profiles that have the potential to attract the most qualified candidates. This approach can increase the likelihood of identifying the best candidates for the positions at hand. Data-driven job fit can also contribute to improving the overall quality of recruitment processes by ensuring that candidates align well with the position and the organization's culture (Wonhyuk et al., 2023).

Another utilization of HR analytics in the context of recruitment and selection is based on the application of predictive analytics (Shrivastava et al., 2018). In this context, the objective is to anticipate which candidates are most likely to succeed in a specific position based on their attributes, qualifications, and past performance. Through predictive analytics, HR professionals can more accurately direct their recruitment efforts and prioritize the most promising candidates, saving time and resources that might otherwise be spent on less competent candidates (Albert, 2019).

AI systems dedicated to digital interviews will be responsible for assessing characteristics such as speech patterns, lexical choices, and body language of candidates using video and audio mediums. Subsequently, these systems will analyze personality traits correlated with the desired profile. Concurrently, artificial intelligence will enhance the candidate experience through chatbots, ensuring regular updates regarding job requirements, feedback, and suggestions (Merlin et al., 2018).

AI offers the opportunity to bring significant improvements to the recruitment process of companies by making it more efficient, cost-effective, and objective. The table below summarizes the use of AI in the field of recruitment based on the literature review.

Table 1: Summary of AI Usage in Different Recruitment Phases

Recruitment Phases	Uses of IA
Anticipating Recruitment Needs	• Algorithms are capable of examining past data to formulate forecasts about the future, such as identifying employees more likely to resign. • Through this predictive analysis approach, HR professionals can implement preventive measures to anticipate issues related to employee turnover.
Candidate Search	• The utilization of AI can facilitate the exhaustive exploration of an extensive set of resumes (CVs) to identify those that stand out as the most relevant for a vacant position. • Furthermore, this approach can also be leveraged to detect "passive candidates," meaning individuals who are not actively seeking employment but exhibit significant alignment with the company's needs.
CV Screening	• To identify the most qualified candidates for a given job opening, machine learning techniques have the capability to analyze their application documents, including CVs and cover letters. • Furthermore, these techniques can help mitigate potential selection biases, thus promoting a more impartial assessment of candidates.
Candidate Evaluation	• The outcomes of assessments and interviews can undergo machine learning (ML) analysis to ascertain who exhibits the most suitable profile for a vacant position. • HR professionals will be able to pose more targeted questions to candidates, relying on trends or patterns identified through this analysis.

3. Methodology

To address our research problem, we adopted a qualitative approach by conducting semi-structured individual interviews with a sample of 10 recruitment managers from a selection of specialized recruitment agencies. Adhering to principles inherent to qualitative sampling, we took care to balance gender diversity and ensure homogeneity in terms of the level of establishment of the chosen recruitment agencies by combining both national and multinational agencies. Regarding the interview process, our methodology was as follows: initially, we allocated time for each participant to

establish social interaction to gather personal information from respondents, followed by the application of a defined questioning protocol, detailed below. These guided interviews facilitated structured exchanges with the individuals interviewed while preserving a degree of spontaneity in their responses (Baumard et al., 2014).

Our survey was conducted from April to May 2023. We initiated our approach by introducing the research objectives, along with the data collection and analysis protocol, ensuring anonymity preservation and explaining the use that would be made of the collected information. Data collection occurred using an interview guide. The first section was dedicated to participants' profiles, thus obtaining data related to variables such as age, marital status, and the position held by respondents within the agency or company.

Subsequently, we developed four additional sections based on prior theoretical development and previous research. The categories considered in this development are presented below:
1) The Importance and Impact of AI Usage on the Role of Recruitment Managers: This section aimed to present the transitions that the shift from traditional recruitment to AI-based digital recruitment can bring to the role of recruitment managers.
2) The Impact of AI Usage During Different Recruitment Phases: This section explained the involvement of AI techniques during different recruitment phases.
3) The Benefits and Biases of AI Usage in the Recruitment Process: In this part of the interview guide, we aimed to identify the benefits and limitations of AI usage in the recruitment process.
4) Requirements for Rational AI Usage in the Recruitment Process: This section pertains to the essential points to consider for beneficial AI usage in recruitment, while seeking to eliminate potential biases.

After conducting the interviews, the verbal statements were transcribed into textual format and subjected to a thematic content analysis. This approach involves segmenting the texts into units and categorizing them into thematic categories based on conceptual similarities (Bardin, 2013).

More concretely, several steps were undertaken: becoming familiar with the collected data (through repeated readings of the interviews), establishing initial categories using a grid, segmenting the data into themes and sub-themes correlated with our research objectives and questions.

Regarding data processing, a manual method was employed, enabling the identification of implicit formulations, sometimes in dialectical Arabic, that might escape detection through the use of "markers."

For data analysis, we adopted a vertical approach that emphasized the specific exploration of how each interviewee addressed their perceptions of AI usage in the role of recruitment managers. Subsequently, we engaged in cumulative analysis by considering each interview individually, and then grouping these interviews with those that preceded them.

This approach allowed us to make necessary adjustments to the interview guide and its conduct. Moreover, it enabled us to quickly identify the point of empirical saturation. Consequently, we ceased to conduct new interviews with recruitment managers as soon as the collected data began to exhibit repetitions, suggesting the attainment of the saturation threshold.

4. Presentation of the results

We have chosen to present the results of our study by showcasing the utility of AI usage during the various phases of the recruitment process, while also demonstrating the perceptions of the interviewed recruitment managers regarding AI usage in their profession. The results also encompass the opinions of the respondents on the benefits and limitations of its usage in the recruitment process.

- Anticipating Recruitment Needs
The interviews we conducted unveiled another utility of AI usage that goes beyond the traditional recruitment processes. Indeed, based on the testimonies of certain recruitment managers, we observed that artificial intelligence (AI) plays a crucial role in forecasting potential employee departures within a company. This significant contribution relies on the use of sophisticated models and algorithms aimed at anticipating employees' departure intentions based on data obtained from employee satisfaction surveys, social media, and other sources.

"As a multinational recruitment agency based in Morocco, we drew inspiration from the experience of our agencies abroad in adopting machine learning to anticipate the recruitment needs of our agency in Morocco. By employing machine learning methods, we were able to create predictive models. These models are trained using multiple employee data, such as their survey responses, work history, interactions with the company on internal social networks, etc.

Through these models, it becomes possible to identify revealing trends and patterns that suggest which employees might be considering leaving the company. This allows us to make predictive assessments of potential recruitment needs and take proactive measures to reduce staff turnover through specific engagement actions, such as professional development programs." Recruitment Manager, 45 years old.

We have noted that the use of AI techniques during this phase did not achieve unanimity across all the interviewed companies; indeed, only a few companies affirmed the use of AI during this phase.

- Job Advertisement Writing
In the process of writing job advertisements, it is possible to incorporate the assistance of artificial intelligence. The latter can contribute to creating specific job descriptions and criteria associated with these positions. Companies have the option to utilize artificial intelligence to update job descriptions so that they accurately reflect the actual work performed, in line with the concept of person-job fit (Kristof-Brown, 2010).

Recruitment professionals have the ability to create suitable job postings and manage online channels using artificial intelligence, with the aim of increasing the overall volume of candidates and identifying those who best match the required criteria (Zhisheng, 2022)."Machine learning algorithms can analyze data from previous job descriptions and profiles of selected candidates to create more targeted job advertisements. Moreover, AI techniques help us be more demanding in terms of recruitment biases, particularly discrimination. AI models can help detect and correct biased or discriminatory terms in advertisements, making the language more neutral and inclusive. This broadens the pool of candidates and encourages diversity." Recruitment Manager, 36 years old.

- **Candidate Sourcing**

The company must search for the most suitable candidate, hence the necessity of a job advertisement that combines both a comprehensive nature and specific details. Companies aim to attract qualified and engaged candidates. However, a large majority of them are not actively seeking employment at present, commonly referred to as passive candidates. In reality, the number of passive candidates far exceeds that of active candidates. However, these passive candidates remain open to exploring appropriate professional opportunities, provided proactive efforts are made to present these opportunities to them (Smith and Kidder, 2010).

"Thanks to the intelligence provided by algorithms, we have the ability to broaden our search for profiles requested by our clients. We have developed a filtering algorithm capable of creating a shortlist of the most suitable profiles according to our clients' criteria. This mechanism aims to extend our sourcing process on a larger scale, offering the ability to identify even passive profiles. This solution enables the identification of the most relevant profiles on a larger scale." Recruitment Manager, 39 years old.

As the AI service gains experience, the AI tool can develop an understanding of the most effective external channels for each category of candidates. Specifically, AI associates the appropriate presentation method (such as advertisement, text, or email) with the most suitable candidates. The AI system disseminates job opportunities through various platforms such as pop-ups, emails, banners, and text messages to maximize the reception and responsiveness of candidate profiles (Black and Esch, 2020). These tools demonstrate a successful ability to attract potential candidates (Jäger, 2018).

"AI helps us identify the channels for disseminating job advertisements that correspond to each type of profile. Through the accumulated results of previous recruitments, an analysis of the data gathered from these recruitments is conducted to determine which channel is best suited for each type of profile." Recruitment Manager, 32 years old.

Furthermore, adjusting the advertisement and monitoring the impact of these introduced adjustments on the volume of applications and applicants can contribute to improving the effectiveness of promotional strategies undertaken by organizations. AI can determine which specific elements of

the company, such as its culture and achievements, should be highlighted to candidates in order to generate the highest possible number of positive responses (Zhisheng, 2022).

"This technique is often used to attract profiles that are scarce in the market, and we already know that unconventional profiles are certainly active in other competing companies. Therefore, we use this technique to locate these profiles by adapting our job advertisement and highlighting the most appealing characteristics through semantic analysis." Recruitment Manager, 43 years old.

- **Candidate Screening**

Thanks to artificial intelligence (AI), recruitment managers can handle vast volumes of information to search for the ideal candidate. AI also allows recruiters to go beyond a candidate's personality traits and conventional CV to determine if they meet the desired criteria (Zhisheng, 2022). AI is impartial and treats all candidates fairly during the CV pre-selection process (Upadhyay & Khandelwal, 2018).

Its advantage lies in the notion that AI-based recruitment tools can establish a fair process while helping to achieve optimal and high-quality results in less time and at a lower cost compared to a human approach (Solascasas Morales, 2020)."Indeed, we use the same process to review applications, which ensures fair treatment based on skills, experience, soft skills... and all criteria required by our clients. This is in contrast to the conventional treatment of applications, which can sometimes lead to conscious or unconscious discrimination due to cognitive biases." Recruitment Manager, 28 years old.

However, according to the interviews we conducted, we found that AI algorithms can sometimes fail to prevent discriminatory practices and may even amplify them.
"We abandoned the use of AI because we found that algorithms can generate biases related to discrimination, especially when dealing with sensitive data such as gender." Recruitment Manager, 40 years old.

- **Profile Matching**

The automation of the CV filtering process presents a substantial advantage during the selection phase by significantly contributing to reducing potential errors inherent in manual screening of thousands of CVs (Abou Hamdan, 2019).
Research has revealed that AI-based tools outperform human capabilities in candidate selection by at least 25%, as indicated by the study conducted by Kuncel et al. in 2014.

"The use of AI techniques in profile sourcing provides us with real assistance in our profession. AI enables us, through the analysis of previous operations and comparisons between desired needs and selected profiles, to build up knowledge that of course requires human intervention to correct errors made initially.

This is based on the gap between the actual value (the obtained profile) and the predicted value (the sought-after profile). An error measure is calculated and transmitted to the system (the error can take the form of biases, ethical principles...). This error is corrected by the programmers

who designed the algorithm to achieve an affinity match. As the algorithm continues to progress in its learning, the error reduces with each execution cycle." Recruitment Manager, 45 years old.

- Post-Selection Candidate Evaluation
Companies adopting AI in their recruitment process can utilize AI-relevant tools to evaluate the selected candidates after CV screening.

Some of these means include the use of gamification tests, which provide valuable insight into skills, abilities, and personality traits. The integration of these playful assessments into the recruitment process aims to establish a correlation between candidates' performance in games and their potential performance in specific roles within the company, as suggested by Bersin and Chamorro-Premuzic (2019).

Through a chatbot, artificial intelligence can contribute to cognitive engagement by interactively interacting with candidates through questions (Sharma, 2018). Subsequently, the AI system analyzes and establishes comparisons between the candidate's responses and those of employees with the best performance. Furthermore, artificial intelligence analyzes the lexicon and sentence structure used in responses and combines these elements with content analysis to generate an overall score for the candidate (Zhisheng, 2022).

Recorded video interviews undergo analysis using artificial intelligence technology. AI analyzes the content of responses, their formulation, tone of voice (e.g., enthusiasm for the question), and facial features (Zhisheng, 2022).

"Our post-selection candidate evaluation phase is based on recorded video interviews that use language and speech processing, involving vision and motion recognition. Through these techniques, AI algorithms provide results that can guide recruitment managers in choosing the right candidates." Recruitment Manager, 48 years old.

"AI can even go further in its analysis by comparing the skills and personality traits of candidates with those of the highest-performing employees who contribute the most to organizational success." Recruitment Manager, 33 years old.
"AI no longer analyzes only the professional and technical aspects of the candidate, but rather identifies their emotions as well, through emotion recognition techniques coupled with a video camera that can detect lies and discomfort during the interview." Recruitment Manager, 40 years old.

- Onboarding of New Hires
By examining data related to the preferences and behaviors of new hires, AI can assist human resources in tailoring HR programs and services to individual needs of each new employee. As a result, this can lead to improved engagement and productivity within the workplace.

Based on the results derived from the algorithms used in the selection and evaluation of new employees, AI can provide recommendations for targeted training and information for each new employee. Furthermore, it can identify former

employees whose personalities may be compatible with those of each future collaborator, to support them during their onboarding.

"As a recruitment manager within our multinational company, the integration of artificial intelligence into our processes has significantly improved how we welcome our new hires. Thanks to the use of sophisticated algorithms, we are able to further customize training paths for each new employee. Based on skills, past experiences, and performance during evaluation phases, AI generates tailored training recommendations. A remarkable aspect is also AI's ability to identify former employees whose profiles are similar and who have succeeded in our company. These former colleagues can serve as informal mentors and share valuable advice during the onboarding period." Recruitment Manager, 39 years old.

5. Analysis and discussion of the results

Under traditional candidate selection approaches by recruitment professionals, several studies have highlighted the presence of significant unconscious biases acting as factors in hiring discrimination, particularly against women, minorities, and older individuals. Consequently, a significant number of applications go unreviewed.

A study published in January 2020 and conducted by researchers from the University Paris-Est on the 100 leading French companies (CAC All Tradable) revealed manifest and strong discrimination based on origin criteria against candidates presumed to have Maghrebi roots (Challe et al., 2020).

The use of AI promises to be capable of avoiding recruitment-related biases while adhering to diversity and inclusion principles. Therefore, the use of artificial intelligence should contribute to significant progress in terms of non-discrimination.

In this regard, the analysis of our results highlights the importance of using AI in combating discrimination in certain Moroccan companies. These results are in line with the previous research of Upadhyay and Khandelwal (2018), who suggest that AI is impartial and treats all candidates fairly during the CV pre-selection process. Our findings also align with the statements of Solascasas Morales (2020), who report that AI-based recruitment tools can establish a fair process while helping achieve optimal and high-quality results in less time and at a lower cost compared to a human approach (Solascasas Morales, 2020).

However, the in-depth analysis of our results reveals the paradox that may arise from the misuse of AI. It is clear from the interviews we conducted that AI algorithms can, in certain situations, not only fail to counteract discriminatory practices but even amplify them. These results embody aspects of our society. These findings align with work conducted in the United States, which demonstrated that African-American populations are more frequently affected by judicial verdicts based on algorithmic use (Angwin et al., 2016).

Like any algorithm, its performance depends on the quality of the data subjected to its processing. Therefore, establishing an efficient information collection methodology is of paramount importance to avoid discrimination-related biases.

Furthermore, it is crucial that the data provided to AI algorithms are not of a sensitive nature (such as gender-related data), as this could lead to biases in the results.

The results provided by our survey demonstrate the ability of AI to save significant time throughout the recruitment process, reducing the workload of recruitment managers through the automation of low-value tasks (such as CV sorting), thereby allowing human intervention for tasks that require more discernment (such as recruiting unconventional profiles).

These results align with research conducted by Kuncel et al. (2014), which demonstrated that AI tools outperform human performance in candidate selection by at least 25%. Similarly, the study by Black and van Esch (2020) analyzed the case of L'Oréal, which used an AI-based selection tool, reducing CV review time from 40 to 4 minutes.

The work of Abou Hamdan (2019) emphasizes that the automation of the CV filtering process presents a substantial advantage during the selection phase by significantly contributing to the reduction of potential errors inherent in manual screening of thousands of CVs.

These statements have been validated by the analysis of the results we obtained from the conducted interviews. It is evident that AI is an essential ally in the efficiency of the recruitment process. Indeed, the integration of artificial intelligence techniques in profile sourcing reinforces the reliability of the recruitment process in identifying suitable profiles. This efficiency relies on AI's ability to analyze previous operations and compare them between desired needs and selected profiles, constructing an accumulation of knowledge and correcting errors based on the gap between the actual value (the obtained profile) and the predicted value (the sought-after profile).

This error is subsequently calculated and transmitted to the system (the error can take the form of biases, ethical principles...). This error is corrected by the programmers who designed the algorithm to achieve an affinity match. It is undeniable that artificial intelligence plays a crucial role in improving the efficiency of the recruitment process. However, it is important to emphasize that its use requires human intervention. It is essential not to entrust the decision-making process entirely to a machine.

The conclusions drawn from the analysis of the results demonstrate the ability of AI to intervene in the candidate evaluation phase through the algorithms employed to analyze elements that can impact the decision of candidate selection, including personality traits, emotions using language and speech processing, leveraging vision and emotion recognition.

This approach aims to assess not only the candidate's technical skills but also their personal aspect, which can have a significant influence on their performance and the overall success of the organization. Artificial intelligence aims to put an end to a standardized method that can sometimes underestimate the value of the individual in their specificity. The results arising from the analysis of our findings show that AI is now used to provide a personalized recruitment experience tailored to the needs of new recruits through the recommendation of necessary training and assisting them in their integration phase by proposing mentors whose profiles could be aligned with the new recruits.

Based on the analysis of our results, it is apparent that the objectives underlying the use of AI are often summarized in the table below:

Table 2: Objectives of Using AI in the Recruitment Process

Efficiency	Ensuring analysis of all applications while achieving time efficiency.
Equity	Analyze applications according to the same selection grid.
Diversity and Inclusion	Analysis of applications with regard to the concrete skills stated therein, rather than considering the name, place of residence, hobbies or even the formatting of these documents.

6. Conclusion

The integration of artificial intelligence within Moroccan companies in the context of recruitment is currently in its early stages, presenting an emerging potential that impacts various stages of the hiring process. The use of artificial intelligence in the field of recruitment is garnering considerable interest due to its transformative potential. This article discusses the contributions of AI to the recruitment domain, as this technology brings substantial benefits to recruitment processes by automating and enhancing various aspects of the hiring cycle.

The integration of artificial intelligence within Moroccan companies in the context of recruitment is currently in its early stages, presenting an emerging potential that impacts various stages of the hiring process. This evolution responds to the limitations observed in traditional approaches. In parallel, it is essential to highlight that some recruitment agencies subjected to our survey are multinational entities, operating both in Morocco and abroad. This international presence fully justifies the adoption of AI technologies in their recruitment processes. It is worth noting that this enthusiasm also extends to national agencies, which are also adopting AI technologies to maintain competitiveness in talent sourcing.

Through the use of artificial intelligence, recruitment agencies can swiftly analyze vast datasets to identify candidate profiles that match specific job requirements. This sophisticated analysis allows for a deep understanding of candidates' skills, experiences, and aptitudes, enabling recruiters to make more informed and objective decisions.

Moreover, artificial intelligence can significantly reduce the time required for sorting and evaluating applications. AI systems can automate the initial selection phase by filtering candidates based on predefined criteria, allowing recruiters to focus on the most relevant candidates.

Furthermore, artificial intelligence helps mitigate inherent human biases in traditional recruitment processes. By minimizing subjective influences and relying on objective data, AI enables a fair and non-discriminatory assessment of candidates. However, it is important to note that despite its benefits, AI must be used cautiously and accompanied by a strong ethical framework to ensure that decisions made by AI systems are transparent, fair, and respectful of individual rights.

In summary, artificial intelligence is revolutionizing how companies approach recruitment by optimizing processes, improving decision quality, and reducing biases. Its judicious adoption can lead to more effective human resource management and the selection of candidates better suited to organizational needs, thus paving the way for overall improvement in business performance and competitiveness.

In conclusion, artificial intelligence emerges as a promising tool in the field of recruitment in Morocco, capable of reducing selection biases and enhancing overall process efficiency. However, it is imperative to implement it thoughtfully, paying special attention to data quality and maintaining ethical vigilance to avoid reinforcing discriminations.

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