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ORIGINAL

Evaluating Inclusivity and Fairness of AI Recruitment Tools for Hiring People with Disabilities in the United Arab Emirates(UAE)

Evaluación de la Inclusividad y la Equidad de las Herramientas de Reclutamiento de IA para la Contratación de Personas con Discapacidad en los Emiratos Árabes Unidos (EAU)

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ABSTRACT

Introduction: this research aims to explore the effectiveness and inclusivity of AI-powered recruitment tools in hiring people with disabilities within the United Arab Emirates. Such is the situation where AI integration into the arena of recruitment is increasingly rapid, while there are vital issues on the side of bias, accessibility, and fairness for applicants of diverse needs.
Method: this study was a mixed-methods approach, examining sentiment analysis, emotion detection, and HR analytics of feedback from applicants with a disability, 415 in total. The research focused on scores referring to sentiment, the progression rate, and the outcome of the final hiring.
Results: the sentiment score varied significantly across disability types (p-value <0,05). The applicants with cognitive disability expressed the highest sentiment sore while applicants with hearing impairment had the lowest, which indicated the varying adaptability of AI. The emotion analysis depicted a mix of positive and negative emotions. A few applicants liked technology and have trust in it, while others report fear. Clearly, the applicants, both disabled and non-disabled did not differ in their rate of progression (p-value >0,05), hence never indicating any significant difference within the initial steps of the process. The final hiring stage showed significant differences in results with (p-value <0,05), where the proportionate number of disabled applicants was recorded to be lower than that of non-disabled applicants.
Conclusions: the findings have indicated that while AI-powered recruitment tools are efficient in nature, they are not very inclusive for applicants with diversifying disabilities. Regular audits of its biases, more inclusive designing of AI, and human oversight are some recommendations that go a long way in ensuring fairness and accessibility in AI-powered recruitment processes.

Keywords: AI-Driven Recruitment; Disability Inclusion; Sentiment Analysis; HR Analytics; Bias in AI.

RESUMEN

Introducción: esta investigación tiene como objetivo explorar la efectividad y la inclusividad de las herramientas de reclutamiento impulsadas por IA en la contratación de personas con discapacidad en los Emiratos Árabes Unidos. La integración de la IA en el ámbito del reclutamiento es cada vez más rápida, mientras que persisten problemas importantes relacionados con el sesgo, la accesibilidad y la equidad para los solicitantes con diversas necesidades.
Método: este estudio utilizó un enfoque de métodos mixtos, examinando el análisis de sentimientos, la detección de emociones y la analítica de RRHH a partir de la retroalimentación de 415 solicitantes con discapacidad. La investigación se centró en puntajes relacionados con el sentimiento, la tasa de progreso y el resultado final de la contratación.
Resultados: el puntaje de sentimiento varió significativamente entre los tipos de discapacidad (valor p<0,05). Los solicitantes con discapacidad cognitiva expresaron el puntaje de sentimiento más alto, mientras que los solicitantes con discapacidad auditiva tuvieron el más bajo, lo que indicó la variabilidad en la adaptabilidad de la IA. El análisis de emociones mostró una mezcla de emociones positivas y negativas. Algunos solicitantes apreciaron la tecnología y confiaron en ella, mientras que otros manifestaron miedo. Claramente, los solicitantes, tanto con como sin discapacidad, no mostraron diferencias en su tasa de progreso (valor p >0,05), lo que indica la ausencia de diferencias significativas en las etapas iniciales del proceso. La etapa final de contratación mostró diferencias significativas en los resultados (valor p<0,05), con una proporción menor de solicitantes con discapacidad contratados en comparación con los solicitantes sin discapacidad.
Conclusiones: los hallazgos indican que, aunque las herramientas de reclutamiento impulsadas por IA son eficientes, no son muy inclusivas para los solicitantes con diversas discapacidades. Se recomiendan auditorías regulares de sesgos, un diseño más inclusivo de la IA y la supervisión humana para garantizar la equidad y accesibilidad en los procesos de reclutamiento impulsados por IA.

Palabras clave: Reclutamiento Impulsado por IA; Inclusión de la Discapacidad; Análisis de Sentimientos; Analítica de RRHH; Sesgo en la IA.

INTRODUCTION

The use of artificial intelligence in the recruitment process is making that fantastical leap forward-it has reshaped the ways in which organizations would locate, sift through, and assemble talent. Efficiency, scalability, and objectivity in the hiring process come with AI-driven tools through automation in resume screening, candidate assessments, and interview scheduling. Along with these benefits come questions about issues such as inclusivity and equity, particularly relating to the treatment of people with disabilities. While AI-powered recruitment tools are supposed to make hiring easier and more democratic, there is growing evidence that it might inadvertently reinforce biases, especially among application incumbents with disabilities.[1,2,3]

Our research goes on to study the inclusivity and effectiveness of AI-driven recruitment tools within the United Arab Emirates(UAE) on applicants with disabilities. By investigating the experiences of disabled candidates in AI-mediated recruitment processes, this paper reveals possible biases and contributes to a broader understanding of the implications involved in using AI hiring technologies. Although AI in recruitment is not a very new concept, its rapid movement to the mainstream has been felt within the last few years as companies strive for efficiency and reduction of human bias in hiring.

AI-powered recruitment tools usually depend on the machine learning algorithms which are trained on vast datasets to look for patterns in applications submitted by candidates and predict the success possibility of a candidate in a certain role.[4,5,6] These tools can do everything from resume parsing to qualification evaluation, and even video interviewing, using natural language processing and facial recognition software. The argument by its proponents is that AI reduces subjectivity in hiring since decisions are based on data, not intuition that may be prone to unconscious biases.

However, numerous studies have also challenged AI recruitment tools for issues of equity and inclusion. According to Mujtaba and Mahapatra,[1] AI technologies, while intended to be neutral, often reveal biases in the underlying data that served to train them. Once the historical hiring data is biased or incomplete, there are chances that algorithms in this regard may replicate and compound such biases. They have resulted in disparate outcomes for underrepresented groups-including those with disabilities.

It is stated that AI tools may rank job applicants who have specific manners of communication or even face expressions more characteristic of non-disabled people higher, at the cost of applicants with a disability.[7,8,9,10] That is an issue of bias in AI recruitment, which may become all the more acute in the case of applicants with disabilities. Studies show that AI systems are often not optimized for accommodating diverse needs in the case

of disabled individuals, whether related to accessibility or the assessment of their capabilities.

For instance, AI-powered hiring tools may not be able to conduct an adequate assessment of the candidate's skills if they have any visual or hearing impairment, since these solutions often operate based on visual or auditory clues to execute screening.[11] This creates grave concerns over the inclusivity of AI-powered recruitment processes and whether such solutions could promote or even amplify the current inequalities within the labour market.

Sentiment analysis, leveraging NLP techniques, has attempted to explain how applicants describe the inclusivity of AI recruitment tools. This is, consistent with many other studies that have always cautioned that recruitment from AI systems may be biased. For example, Raghavan et al.[12] note that AI tools, even while designed to eliminate the possibility of human biases, do tend to result in new forms of bias unless there is proper design and monitoring. Along similar lines, Mills and Whittaker[13] further emphasized that such systems need auditing to ensure that AI does not create disadvantages for underrepresented groups of people, including those with disabilities.[13,14,15] Given these concerns, the present study underlines the need for organizations to critically review their AI recruitment tools and be more proactive in ways of making them more inclusive.

The Objective of the Study are as follows:

1. To evaluate bias in sentiment scores based on disability type
2. To analyse progression rates between disabled and non-disabled applicants
3. To assess hiring outcomes for disabled versus non-disabled applicants
4. To investigate the influence of language on sentiment scores in AI-driven recruitment

This review aims at synthesizing scholarly literature on the subject in order to carve out the gaps in the existing research and establish a basic understanding of how AI recruitment tools may facilitate or hinder inclusivity.

Organizations have adopted the trend of utilizing AI-powered recruitment tools in hopes of making the process swifter and effective. These are normally algorithm-designed tools using machine learning techniques, which scrutinize candidates based on information about them from their resumes, interview responses, among other resume criteria. Proponents argue that AI-based recruitment may reduce human biases since the technology is based on data-driven decisions besides subjective human judgments.

Different studies, like that of[16,17,18,19] & Kharbanda and Mukherjee,[20] indicate that AI guarantees the delivery of objectivity in the realms of hiring because it excludes any form of prejudice, one factor which has been associated with human recruiters. Of course, such objectivity on the part of AI is not at all settled, a fast-increasing number of studies show that while AI may cleanse some kinds of bias, it can introduce or exacerbate others, particularly in the context of marginalized groups-a category into which people with disabilities also fall.

Trewin et al.[21] claim that while the design of AI recruitment tools aims at neutrality, they often reflect the biases in the data they have been trained on. For example, Nugent and Scott-Parker[22] discuss that if the AI system is trained on historical hiring data which it has biased against individuals with disabilities, it may make decisions in a similar fashion. According to Nugent et al.[23], AI recruitment tools often fail to accommodate specific needs or particular circumstances of applicants with disabilities, already reinforcing exclusionary practices. This concern is supported by research, for instance, Guo et al.[24] note that out-of-the-box AI systems, which have not been explicitly designed to make accommodations, poorly accommodate the spectrum of abilities of applicants with a disability.

These findings indicate that there is a serious lack in the design of AI-driven recruitment tools to understand or accommodate anything other than typical standardized forms of communication or physical signalling by candidates with a disability. Current AI recruitment research is increasingly adopting a range of methodological approaches to the measurement of inclusivity. This study reviewed a mixed-method approach that incorporated quantitative HR data analytics and qualitative sentiment analysis from feedback provided by applicants with disabilities. Indeed, other related studies such as Paudel et al.[25] have applied mixes of quantitative metrics, such as identifying the rates of people progressing through the different stages of recruitment, and qualitative feedback attesting to candidate perceptions of inclusivity.

It is consistent with general studies of AI recruitment, indicating that most AI-driven tools have lesser chances of progressing applicants with disabilities compared to those without disabilities through different stages of recruitment. This difference in the rates of progressions would, for one thing, indicate that algorithms underpinning AI recruitment tools are not optimized to recognize the potential of disabled candidates.

Sentiment analysis has, in recent times, become one of the most favoured approaches toward qualitative research into applicant experiences with AI recruitment tools. [26] Researchers can then use natural language processing techniques to analyse the feedback for the level of positive, neutral, or negative sentiment response, which furthers their understanding of how applicants view AI systems as inclusive and non-discriminatory. This would explain why results of the sentiment analysis such as Fisher et al.[27] indicated that applicants with

disabilities who rated the AI tools as not inclusive had a higher likelihood of expressing negative or neutral sentiment.

This reflects a wider issue of perceived fairness in AI-driven recruitment, where applicants with disabilities feel too frequently that the systems are not designed with their needs in mind. While AI recruitment inclusion pertains to different areas, including objective outcomes such as hiring or progression rates, it is also a subjective experience of an applicant. In the study by Horodyski,[28] perceptions of inclusion are highly relevant to, and formative in influencing, the general experience an individual applicant has with the AI recruitment tool. In fact, applicants with disabilities may view these tools as exclusionary if the system seems not to be designed to take into consideration unique abilities and experiences.

Studies have shown that applicants with disabilities are less likely to view AI-driven recruitment procedures as fair and inclusive.[29,30] For example, Lyerly[31] found out that a popular tool ChatGPT, tends to rate the resumes that features disability lower than those without disability. This incongruence in perceived inclusion underlines some of the challenges faced by people with disabilities in their interactions with AI recruitment tools, particularly those that rely on standardized assessment or facial recognition and communication style cues, to which application may not be relevant for people with certain disabilities.

Other enormous problems appear in the form of algorithmic bias in recruitment processes, which in turn can perpetuate already existing inequities in hiring. Works by Moss [32] and Chand et al.[33] have demonstrated that AI systems have a number of tendencies to reproduce biases present in the historical data associated with hiring processes, especially in cases where this data is not representative of individuals with disabilities. If an AI system trains only on data biased towards nondisabled applicants, then that system is more likely to ignore or disadvantage disabled candidates.

In their argument, Guo et al.[24] rail against the tendency of AI recruitment systems to fall in reliance upon standardized criteria, which cannot really measure the full potential of applicants with disabilities. For example, a study Fisher et al.[27] states that support systems that rely on certain facial expressions or types of communication during video interviews may exclude applicants with disabilities that affect their facial movements or speech patterns. This would therefore mean a critical need for designing AI recruitment tools that would consider abilities and experiences from all applicants.

Others have gone to the extent of prudent advocacy for a more inclusive approach in the design of AI-based hiring techniques[34,35,36], while others have emphasized that organizations need to make periodic audits of their AI systems for possible bias.[37,38,39,40] This would involve ensuring the training data is representative of different applicant populations, including people with disabilities, and utilizing algorithmic checks that avoid discriminatory decisions. Additionally, disability advocacy groups should be represented in the design and testing phases of AI recruitment tools to ensure that the processes are indeed inclusive.

While there is a significant amount of research into the biases and limitations of AI recruitment tools, a number of gaps remain. First, much of the research so far has focused on Western contexts where the experiences of disabled applicants have been explored in more detail than in regions such as the Middle East. While the many studies has provided interesting insight into how AI recruitment tools are used in this region, further research is needed to understand how cultural and organizational differences might moderate the inclusivity of AI-driven recruitment processes.

After reading the literature we understood the biases of AI systems, specific design features intended to address concerns about inclusivity related to applicants with a disability are still needed. Possible future research would be into how changes in AI recruitment tools could facilitate the inclusion of applicants with a variety of different types of disabilities related to visual and hearing impairments. The latter includes speaking to access in UI development and ensuring that AI systems are capable of evaluating candidates without referring to non-verbal cues that might place disabled candidates at a disadvantage. After carefully reviewing the literature around the study we have developed the below mentioned hypothesis.

Hypothesis 1: AI-driven recruitment tools do not exhibit bias in sentiment scores based on disability type.

Hypothesis 2: AI-driven recruitment tools do not exhibit bias in progression rates between disabled and non-disabled applicants.

Hypothesis 3: AI-driven recruitment tools do not exhibit bias in hiring outcomes between disabled and non-disabled applicants.

Hypothesis 4: language does not influence sentiment scores in AI-driven recruitment tools.

The conceptual model of this study in figure 1 focuses on determining the relationship between the independent variable and a number of dependent variables with regard to different kinds of recruitment results for applicants with disabilities. AI-driven recruitment tools are automated machinery used by an organization for screening and assessing applicants for employment. These are tools that, even though their design is for quick ways to make recruitment processes easier, are actually the point of focal analysis when it comes to effectiveness and inclusion, especially in the case of applicants with disabilities.

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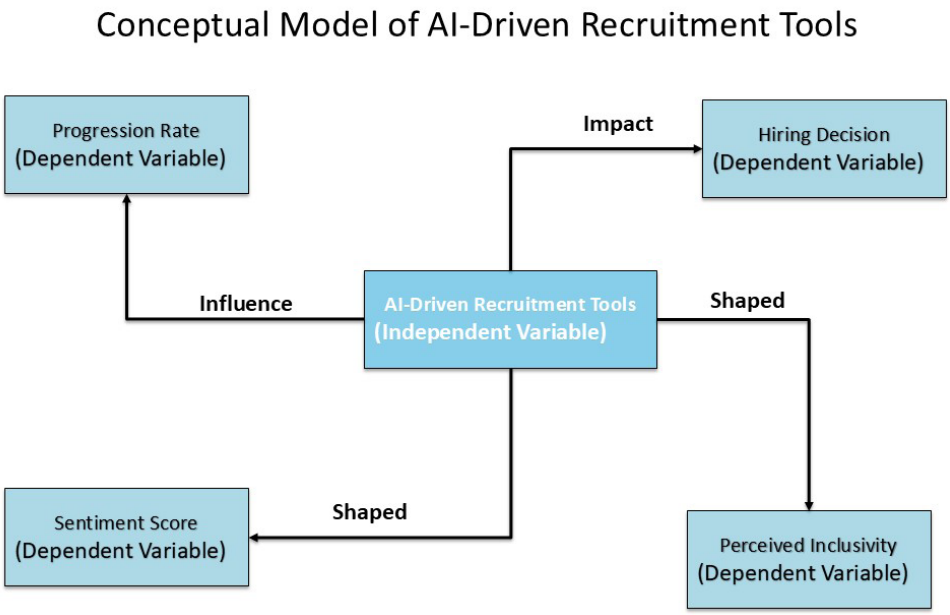

Figure 1. Conceptual model of the Study

METHOD

We used a descriptive and analytical research design, combining qualitative sentiment analysis with quantitative analytics using HR data. It analysed the experiences of job applicants with disabilities when utilizing AI recruitment platforms, in addition to key recruitment metrics to identify potential biases and disparities in hiring.

The target populations considered in this study were job applicants with disability and HR professionals who use AI-powered recruitment tools in the UAE. The primary population targeted persons with visual, hearing, mobility, and cognitive impairments with AI recruitment system experience from varied industries. The secondary population consisted of HR professionals responsible for managing AI recruitment processes, providing data regarding the status of the hiring outcome of applicants with disabilities. The selection criteria for the applicants with disabilities included having direct experience with AI tools, identifying as having a disability, being Emirati-based, and consenting to both qualitative and quantitative data collection. The selection pool shall also consist of all HR professionals involved in AI recruitment, familiar with AI tools, and willing to share recruitment data.

The final sample was 415, consisting of 340 disabled applicants, 75 non-disabled applicants as a control group, and HR professionals providing supplementary data. The breakdown for the different types of disabilities included 20 % visual, 15 % hearing, 25 % mobility, and 40 % cognitive-the sample therefore ensured heterogeneity. Stratified sampling was adopted to achieve representation of various disabilities, while purposive sampling was used in the selection of HR professionals based on their level of expertise. This strategy allowed for comprehensive mixed-methods analysis with strong qualitative and quantitative data.

Data were collected using both qualitative and quantitative data. Qualitative data were from structured surveys and semi-structured interviews of applicants with disabilities on how these applicants experience the use of AI-driven recruitment tools in terms of access, transparency, and inclusion. The study ensured the validity and reliability of the qualitative and quantitative data collected. Regarding their own validity, the structured surveys and semi-structured interviews were developed based on a literature review and expert views to ensure they captured the important aspects effectively-that is, about access, transparency, and inclusion in AI-driven recruitment.

The face and content validity were assured from expert reviews, while triangulation was based on findings through surveys, interviews, and HR records for consistency among sources. During data analysis, inter-coder reliability was ensured whereby multiple researchers coded the responses independently to ensure minimum bias. Quantitative data, on the other hand, came from HR records of organizations that used AI-driven recruitment tools. The data was based on applicant volume, stages of progression within recruitment processes, and eventual hiring decisions. This could be used to compare the experiences and outcomes of applicants with

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disabilities against non-disabled applicants.

Quantitative data analysis was performed in both Python and R. While Python was used for the NLP and sentiment analysis of qualitative feedback, R was employed in the statistical analysis of quantitative HR data. Herein, we performed sentiment analysis to classify feedback into either positive, neutral, or negative, since this would offer deep insight into applicants' perceptions of inclusivity linked with AI-driven recruitment tools. Various statistical tests were done using R, such as Chi-square and t-tests, to compare differences in the progression rates and hiring outcomes between applicants with and without disabilities. Both Python and R are capable of processing big data efficiently and deducing meaningful results.

The present study examined several dependent key variables in understanding the consequences of these AI-driven tools. Progression Rate was the percentage of the recruitment process completed by each applicant and thus reflected how far applicants with disabilities were able to progress compared to non-disabled applicants. A very important outcome was the hiring decision in which, after going through the AI-driven recruitment processes, applicants were hired or rejected. Moreover, the following were measured, the quality of the recruitment experience by means of Sentiment Score, which measured applicants' emotional responses to the AI-driven recruitment process-applicants' responses were classified as positive, neutral, or negative.

Finally, applicants rated their perceived inclusivity of recruitment tools and thus reflected on perceptions of the degree of accessibility and fairness which an AI-driven system provided throughout the hiring process. Together, these measures captured the complete range of how AI-driven recruitment tools impact objective outcomes-such as progression rates and hiring decisions-and subjective experiences-in terms of sentiment and perceived inclusivity-of applicants with disabilities.

The investigation was carried out keeping in view all the ethical considerations so as not to harm the protection, privacy, and dignity of participants. Signed informed consent was taken from each participant after explaining the purpose and procedure and the possible risks from the study. Data anonymization was ensured while maintaining confidentiality, and participation was voluntary, with an opportunity for individuals to withdraw at any time without adverse consequences. Data protection was ensured through secure data storage and use for research purposes in accordance with the relevant regulations on privacy. These steps assured that the research was responsibly and ethically conducted.

RESULTS

Sentiment analysis of AI-driven tool feedback about recruitment showed a wide variation in applicant experiences (figure 2). Most importantly, the scores of sentiment for applicants with disabilities oscillated between -1. and 1. accordingly, on the total feedback entries of 415. The average score for the sentiment was 0,33, indicating generally positive sentiment. Of all the feedback entries, 35,4 % were positive, 34,2 % were neutral, and 18,8 % were negative. Positive comments included "clear", "fast", "efficient", and "smooth", which means applicants liked the efficiency and clarity of AI-driven processes. On the other hand, negative comments used terms more frequently like "lacked", "biased", "difficult", and "unclear", pointing to dissatisfaction with regard to accessibility and inclusiveness. This is because, while speed is valued in most AI recruitment systems, there are keynote issues on inclusivity, as evidenced from the negative words like "biased". This finding therefore calls for more inclusive designs of the AI to account for the various applicant needs, especially applicants with disabilities.

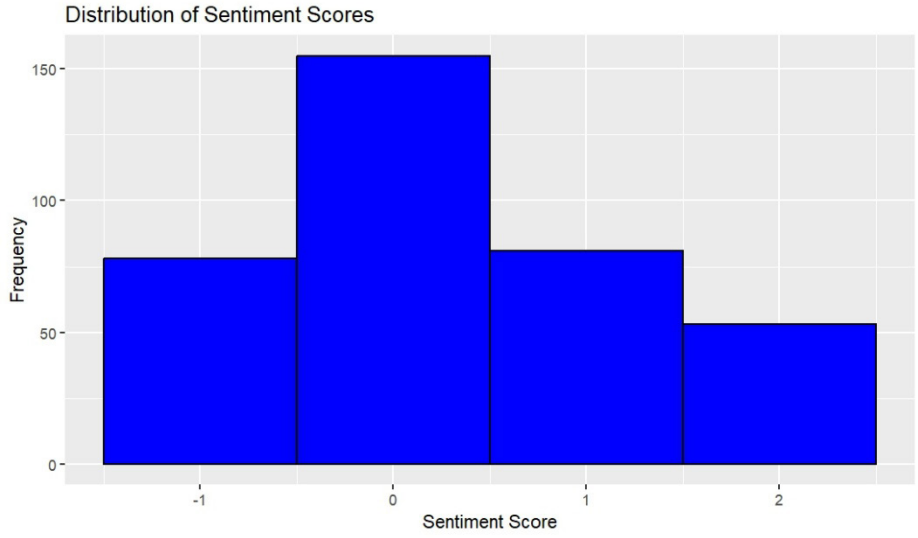

Figure 2. Distribution of Sentiment Scores

Further, analysis of the emotions of applicant feedback using the “nrc” lexicon proved to have so much more specificity in relation to applicants’ emotional responses. The most prevalent sentiments checked were those related to trust and positive feeling, which would suggest that most applicants had a degree of trust and positivity in the AI tools they interacted with. There were also high values for negative sentiment checked and even fear, indicating the feeling of discomfort or perceived exclusion among applicants. The radar chart visualization (figure 3) pointed out the high proportion of trust and positive sentiment, but also notable spikes in negative sentiments coupled with fear. This indicates that though many applicants may feel trustworthy towards AI recruitment tools, others feel this is an unfair and not inclusive applicants-apprehensive approach.

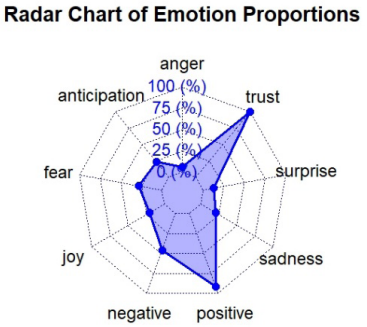

Figure 3. Radar Chart of Emotion Proportions

This would tend to indicate a general confidence in the process, while negative emotions are felt along points where improvement is still sought, especially in accommodating applicants with disabilities.

Looking at the more detailed information, the sentiment scores across the different types of disabilities were considerable (figure 4). The average score for applicants with a cognitive disability was as high as 0,42, while the lowest score, 0,23, corresponded to the applicants with a hearing disability. The applicants with visual and mobility disabilities scored 0,34 and 0,35, respectively, while those with no disabilities obtained an average score of 0,33. Second, this difference in average sentiment scores supports the necessity of further tailoring AI toward more specific types of disabilities since not all groups bear their burdens in processes related to AI-driven recruitment.

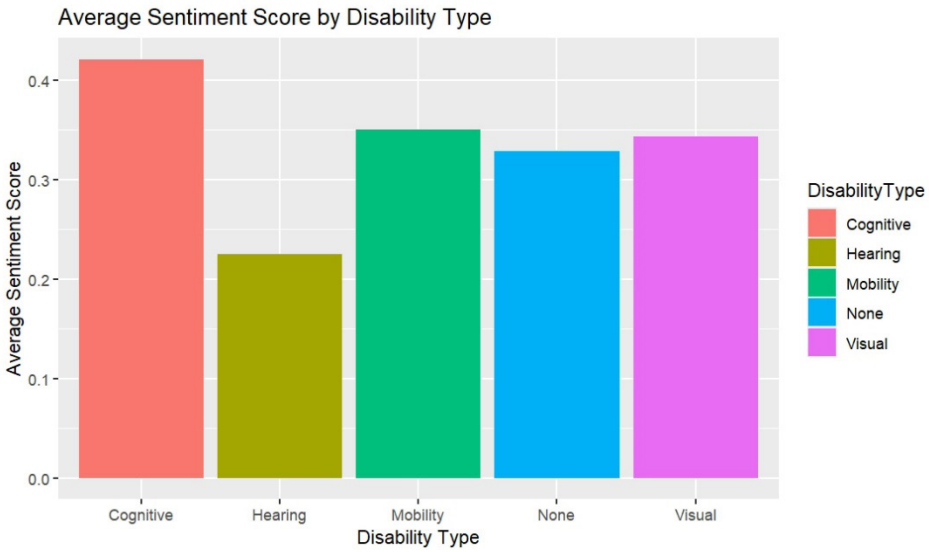

Figure 4. Average Sentiment Score by Disability Type

Analysis of the sentiment scores of applicants of different languages showed that the average score for Arabic-speaking applicants was slightly higher at 0,34 compared to the 0,31 for English-speaking applicants.

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This therefore may mean that the language in which feedback is given can very well affect how AI recruitment tools are perceived. The average sentiment for the Arabic speaker might be higher because the language is more accessible or the AI system culturally fits. However, the close scores between both language groups also illustrate that AI tools perform relatively consistently across languages, although improvement in overall multilingual capabilities could further enhance the inclusiveness of AI-driven recruitment.

Analyzing the rates of progression, minor differences between the disabled and non-disabled applicants cropped up, with the latter having the highest score. The average rate of progression stands at 48,5 % for the disabled applicants against the 49,3 % attained by the non-disabled applicants. Be as small as it may be, this difference still points to a subtle bias that may exist in AI algorithms, perhaps affecting the rate of progress at which disability applicants pass through the recruitment process. Although it is not wide, it develops the relevance of running periodic bias checks to maintain equal treatment, regardless of the disabled status of the applicant. More striking differences in hiring outcomes have been observed between the disabled and the non-disabled applicants (figure 5). Of the applicants with disabilities, 149 were hired and 191 were not. On the other hand, among the non-disabled applicants, 35 out of 75 were hired, which may reflect a lower hiring rate among applicants with disabilities compared to applicants without disabilities. These net adjustments in hiring outcomes indicate some form of bias in the AI decision support system, disadvantageous to applicants with disabilities. To ensure equitable outcomes from recruitment and prevent the systemic exclusion of applicants with disabilities, addressing these biases is paramount.

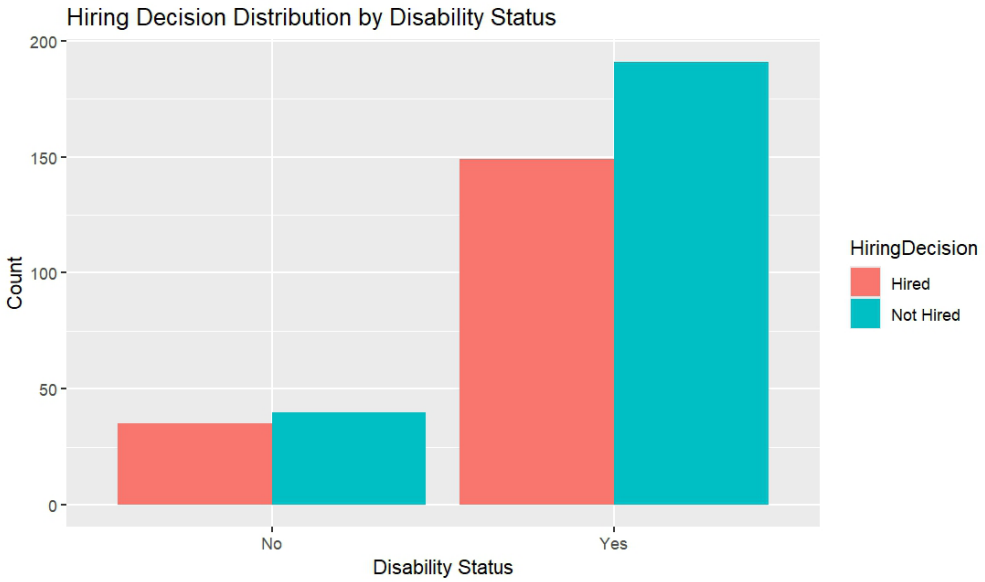

Figure 5. Hiring Decision Distribution by Disability Status

Hypothesis testing has deepened the original results of possibly biased and inclusive AI-powered recruitment tools for applicants with disabilities. The first hypothesis tested whether the sentiment scores are significantly different for different kinds of disabilities. Also, reject the null hypothesis that no significant difference exists between the sentiment scores. The testing of statistics shows indeed there is a difference in the sentiment scores regarding disability type at p-value < 0,05. For example, applicants with cognitive disabilities expressed the highest average sentiment score of 0,42, while those with hearing disabilities had the smallest average sentiment score, standing at 0,23. It would thus appear that AI-driven tools are viewed differently by applicants, given the type of disability and there is a greater need for more specific types of AI systems to meet these needs.

The second hypothesis presents whether the difference in the rates of progress between the two groups of disabled and non-disabled applicants is significant or not. No evidence existed against the null hypothesis of no significance since the p-value was > 0,05. Both the means of the rates of progress were almost identical, it was 48,5 % for applicants with disability, while that of non-applicants was 49,3 %. This indicates that AI-powered recruitment tools present no significant barrier to progress compared to applicants without disabilities. While this finding is positive concerning progress, it does not provide any sort of guarantee concerning equity that might be realized in the later stages of recruitment. Secondly, adjustments will have to be continuously observed and done as necessary to ensure that equity occurs through all stages.

The third hypothesis examined the results of Disabled vs. Non-Disabled Applicants Hiring: Is there any statistically significant difference in hiring between disabled and nondisabled applicants? The null hypothesis of

no statistically significant difference in hiring outcomes was rejected. There existed a statistically significant difference, since the p-value was less than 0,05, which indicated that the disabled applicants had been hired at a lower rate compared to their nondisabled counterparts. This means that 149 out of 340 applicants with disabilities were hired, whereas 35 out of 75 non-disabled applicants received offers. The finding suggests that biases might creep in at the final stages of AI-powered recruitment processes and hence are detrimental to applicants with disabilities. These biases do need consideration to ensure fairness in hiring practices in AI-powered systems.

The fourth hypothesis was carried out to establish whether language played a role in sentiment scores regarding AI-driven recruitment. Because the p-value was greater than 0.05, the null hypothesis of a nonsignificant effect in the differences between Arabic and English speakers' sentiment scores was accepted. The mean sentiment scores for the Arabic-speaking subjects were 0,34, whereas those for the English-speaking subjects were 0,31, hence, as opposed to the initial hypothesis, it is fair to say that there is no significant difference in applicants' regard for AI-powered recruitment tools from distinct linguistic backgrounds. This consistency suggests that the performances of the AI systems are almost equal across languages-a good omen for inclusivity in multilingual environments such as the UAE.

DISCUSSION

AI Effectiveness & Inclusivity

These results provide meaning to the performance of AI-driven recruitment tools in terms of equity and inclusion for applicants with disabilities in the UAE. As expected from the literature, strength lies in the speed, consistency, and objectivity that were evidenced by 35,4 % positive sentiment related to efficiency and clarity. However, the negative feedback of 18,8 % stands in agreement with previous findings of concerns on bias and accessibility, and thus demands an increasingly inclusive AI design.[22]

Disability Type Differences

The fact that most sentiment score disparities between cognitive and hearing disabilities are higher in the former while presenting more challenges in the latter echoes similar sentiments from previous studies.[41] This therefore points to a suggestion that shortcomings in designs and the nature of assessments make AI systems better suited-inadvertently-for some kinds of disabilities. These will be disparities that will have to be addressed by adaptive AI designs with embedded universal accessibility to ensure no group is at a disadvantage.

Consistency in AI tool language

The lack of considerable variance in sentiment score differences between Arabic and English speakers contrasts with earlier studies that focused on language biases within AI systems.[42] This may therefore mean that AI-powered tools within the UAE market are more effective at bridging gaps in linguistics, but some further optimizations are advisable for better multilinguality.

Promotion/ Hiring Bias

Whereas the progression rates were similar across applicants with and without disabilities, hiring outcomes favored the applicants without disabilities-a fact that tallies with the previous concerns that AI "has the potential to perpetuate biases at the endpoint decisions of the recruitment process.[32] This therefore becomes an eye-opener on the need for further human oversight and bias audits that are more rigorous in nature in order to ensure that hiring decisions are fair and equitable.

Implications for AI-Driven Recruitment

These findings of the current study indicate that, while AI systems clearly manifest advantages regarding speed and volume, they provide only poor services concerning fairness among applicant groups. This alone presents a further need to continuously detect biases, engage stakeholders, and guarantee that regulatory mechanisms are put in place to make AI systems genuinely inclusive and accessible throughout different contexts, such as the UAE.

CONCLUSION

The paper assessed the effectiveness and inclusiveness of AI-powered recruitment tools in recruiting disabled people in the UAE. Whereas AI tools indeed have obvious advantages with regard to speed, effect, and efficiency, the findings reported indicate greater challenges with respect to bias, accessibility, and fairness. Sentiment analysis indicated an overall positive perception; 35,4 % of comments indicated efficiency and clarity, while 18,8 % feedback mentioned bias and non-inclusivity. It forms an initial impression of the papers reviewed: Emotion analysis showed a mix of feelings of trust and fear. There was a difference in sentiment scores-based on the type of disability, where hearing disabilities got the worst scores, while cognitive disabilities got the

best.

The application progression rates between disabled and non-disabled applicants were similar, but the linking of final hiring outcomes showed significant biases in favor of non-disabled applicants. This seems to point to AI's inability to make equitable judgments later in the processing cycle, either because of biased training data or limited algorithm design. With the consistent sentiment scores across languages being promising, this study has taken a very important look at underlining adaptive AI systems by embedding universal design principles and audits that make sure bias is kept out.

Organizations must intrinsically take proactive design and implementation measures, considering continuous refinement with the active involvement of all stakeholders, including disability advocates. In this regard, surmounting these limitations, AI tools can become strong facilitators of diversity and inclusion for greater equity in hiring goals.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest

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