# Evaluating the Role of AI-Driven Job Portals in Transforming Talent Acquisition Practices: Evidence from Nagpur

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## Abstract

The article analyzes the Nagpur area human resources practice vis-a-vis the transformative effect of AI-simulated job portal on the talent acquisition practices. The approach falls under descriptive and analytical research whereby primary data (interviews with 150 respondents (HR professionals, recruiters and job seekers) has been conducted. The results reveal that automated resume screening systems, matching candidate analytics, and predictive analytics, all based on AI, result in high levels of efficiency in the recruiting process, less time spent on hiring a candidate, and an increase in the accuracy of the selection decision. The statistical analysis shows that the relationship between outcome of recruitment and AI is strongly positive in the case of using AI. Nevertheless, such issues as the bias of algorithms and transparency, as well as the issue of the privacy of data, are also topical concerns. The paper will conclude by stating that AI job portals are transforming the manner in which the area of recruitment has been aided, yet there is a need to balance between AI and human human interventions to facilitate just and prudent decision making. The study offers useful insights to the companies that prefer to use AI-based technologies to enable them carry out more effective and inclusive talent management practices.

**Keywords: Artificial Intelligence, Talent Acquisition, Job Portals, Recruitment Efficiency, Predictive Analytics, Nagpur Region**

## Introduction

The current dynamism experienced with the digital technologies has caused changes in the human resource management practice, especially talent acquisition. One of these innovations, job portal, which runs on the Artificial Intelligence (AI) platform, has proved a very important innovation that has reshaped the way organizations are searching, attracting, and getting talent. The predictive analytics (machine learning, natural language processing) operate on systems based on AI and boost recruiting efforts, such as screening resumes, scheduling and pairing interviews, and more. Via these innovations new processes are made more productive and efficient and lessen the time of recruitment and are more equitable when hiring (Joshi, 2025).

The modern labor market, where competition is alluring, and the demands on skills are dynamic, organizations are turning to AI-powered talent acquisition platforms more and more to streamline talent acquisition efforts. Not only do these platforms simplify the recruitment processes but offer insights that are based on data and allow recruiters to develop a more efficient approach to finding out high-quality candidates. According to the studies, AI-based hiring systems can greatly increase the results of the hiring process developing a better fit between the applicants and the job and decreasing the expenses of the operation process (Ouakili, 2025).

In addition, AI has transformed recruitment to be a proactive process through the integration of AI into job portals. Through smart technologies, one can anticipate the future performance of the candidates, suggest the appropriate job positions, and even evaluate the suitability of candidates based on advanced analytics. Such a change is more applicable in fast-growing cities like Nagpur, in which the use of digital in employment is rapidly increasing alongside the industrial and service industries.

In spite of the above, the implementation of the AI-driven job portals is also associated with critical issues connected to the aspects of transparency, prejudice, and ethical decision-making. Black-box characteristics of AI algorithms and the possibility of manipulating candidate data predetermine the necessity of paying special attention to its effects on the contribution to

fairness in recruitment processes and organizational performance (Zhang, 2025). Thus, the paper will attempt to assess how AI enabled job portals can revolutionize talent acquisition practices, particularly in Nagpur.

**Literature Review**

The use of Artificial Intelligence in recruitment has received a lot of scholarly attention in recent times. There is initial research pointing to the fact that artificial intelligence technologies make recruitment procedures much more efficient and scalable by automating redundant procedures (resume screening and shortlisting of candidates) (Black and van Esch, 2019). These innovations can help organizations deal with a vast number of applications and be consistent and accurate in their selection.

New studies also highlight strategic importance of AI in talent acquisition. According to Paramita (2024), the introduction of AI will make businesses operating more efficiently and enable organizations to be more effective because it allows them to hire on the basis of data and minimize human biases during the recruitment process. Likewise, Praveen (2025) explains that AI-based solutions ensure diversity and inclusion by reducing subjective biases and enhancing access to talent pools lacked in representation.

The empirical studies reveal also that AI induces an impact on candidate perceptions and application behavior. According to Tursunbayeva et al. (2025), using AI and digital data in the recruitment process has implications on the attractiveness of the organization and the readiness of candidates to get employed. Similarly, Horodyski (2023) also shared that job candidates tend to regard AI-based recruitment systems as helpful and easy to use, which also helped to create a positive recruitment experience.

Technologically, job portals with AI capabilities utilize high-tech features like chatbot communication and predictive analytics, as well as analyzing such skills gaps. These will allow job recommendations based on the personal constraints and will enhance the interactions of the candidates, which will lead to an upliftment of the entire recruitment ecosystem (Joshi, 2025). Also, there is growing use of Industry 4.0 technology, such as AI, in HR practices which make hiring decisions smarter and faster (Nishanthi, 2025).

Nonetheless, multiple issues related to the use of AI in hiring can be noted in the literature as well. Algorithms favoring a specific group, the absence of transparency, and ethical issues are still major obstacles to the successful introduction of AI systems (Dadaboyev, 2025). Moreover, the research highlights the need to balance automation and human judgment to be fair and guarantee a positive candidate experience (Malque, 2025).

Although worldwide studies offer a lot of valuable information on the topic of AI in recruitment, there is a clear lack of research of the region in particular, such as the city of Nagpur. The current literature is predominantly based on major economies or big cities, thus this restricts the extent of knowledge in the small urban-based AI usage. This paper fills this gap by assessing how AI-based job portals can revolutionize the talent acquisition process in Nagpur region.

**Objectives**

- The research problem is to determine how well AI-driven job portals are effective in improving the efficiency of the talent acquisition process and its accuracy in the Nagpur area.
- To analyze how AI-enabled features influence the results of the recruitment process and decision-making.
- To discuss the challenges and limitations related to the implementation of AI-driven job portals, such as bias, transparency, and candidate experience.

**Methodology**

The research design used in the study was descriptive and analytical research design to examine how AI based job portal can revolutionize the practice of talent acquisition in Nagpur region.

Primary and secondary data were used to make sure that all data was analysed. Primary data were obtained in the form of a structured questionnaire that could be given to HR professionals, recruiters as well as job seekers who actively use AI-facilitated job portals, whereas secondary data was obtained in the form of academic journals, industry reports and other related publications on AI in recruitment. Respondent sample was 150; this was taken so that it was representative and to conserve time and cost because convenience sampling method was the one to be used because of the accessibility and time.

**Results and Discussion**

Percentages analysis, mean scores and correlation as well as regression of the collected data on 150 HR professionals, recruiters and job seekers in Nagpur were used to assess the effectiveness of AI-driven job portals in terms of talent acquisition.

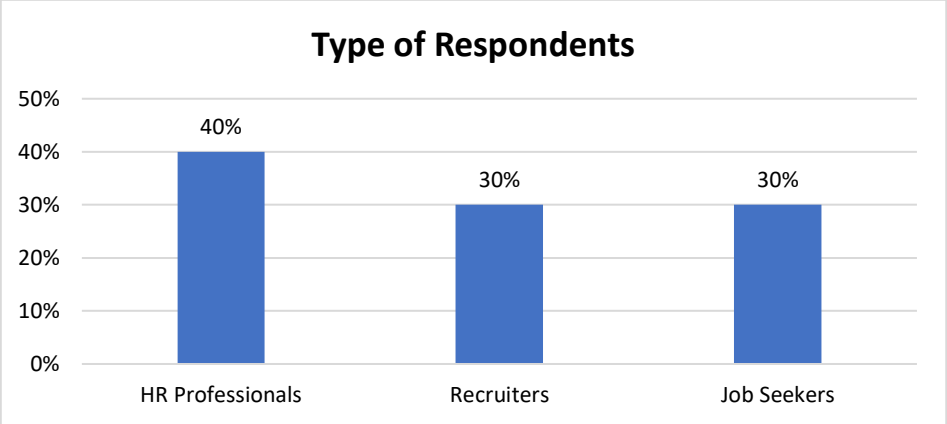


**Fig. 1 Profile of Respondents**

The demographics reveal that 40 percent of the participants were HR professionals with 30 percent each being recruiters and job seekers. HR specialists contribute to providing organizational feedback, recruiters bring operational insights and job seekers give user feedback on job sites with AI. The result validity in this kind of composition appeals with the strength of combining various perspectives of the stakeholders. It also ensures that the conclusions that will be drawn will not be biased to a particular group because the findings have been acquired in the holistic view of AI application in hiring activities within the Nagpur area.

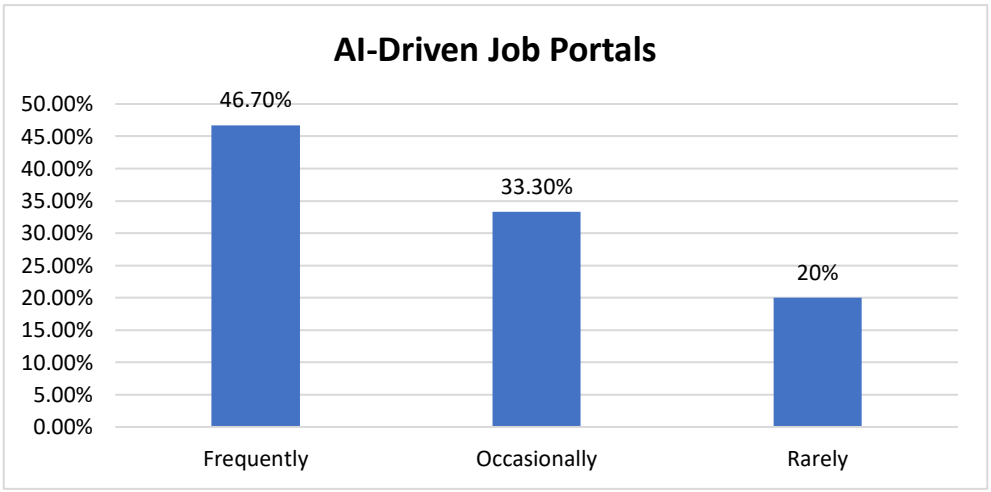


**Fig. 2 Usage of AI job portals**

It is revealed that 46.7 per cent of interviewees have used AI-based job portals rather regularly with 33.3 per cent engaging in such services occasionally and 20 per cent using them infrequently. It indicates that the rate of integration of AI-driven recruitment tools is high in Nagpur. It means that AI-based portals are now the elements of the modern hiring process as it is demonstrated by such prevalence of regular users. That there are a few occasional and rare

users, however, indicates the fact that the complete adoption is yet to shape up. The reason behind this difference can be said to be the differences in the awareness of technology, preparedness in organizations, or the trust among AI systems. Overall, the findings suggest that AI job portals are typically accepted, but furthermore, more adoptions and familiarities within the users remain possible.

**Table 1 Effectiveness of AI in Recruitment**

| Parameter | Mean Score (Out of 5) |
|---|---|
| Speed of Hiring | 4.3 |
| Quality of Candidate Matching | 4.1 |
| Cost Reduction | 3.9 |
| Reduction in Human Bias | 3.7 |
| User Experience | 4.0 |

The overall mean score analysis can reveal that the AI-based job portals are perceived as very helpful, particularly, with the components of accelerating the recruitment process (4.3) and more successful matching of candidates (4.1). Automating recruiting can be significantly automatised with such scores, and data analytics. Compared to cost (3.9) and user experience (4.0), it was also rated well suggesting that AI is encouraging efficiency and user-friendly at the processes. However, the fact that the human bias decrease is rated comparatively at a lower level (3.7) raises even more concerns regarding the impartiality and openness of algorithms. This means that the stakeholders are not ready to abolish bias completely even with improvements in efficiency brought about by AI. Overall, the results confirm that AI-based portal can have a beneficial effect on recruitment performance and still requires certain enhancements regarding the areas of ethics and equity.

**Table 2 Relationship between AI Usage and Recruitment Efficiency**

| Variables | Correlation Coefficient (r) |
|---|---|
| AI Usage vs Recruitment Efficiency | 0.68 |

Recruitment efficiency and use of AI in job portals are positively correlated (r = 0.68). This means that as the degree of introducing AI technologies increases, organizations speak their language around quicker and more accurate recruitment and productivity overall. The strength of this connection suggests that AI is not a by-the-implication instrument but a big driver of better recruitment outcomes. It also supports the thesis that the performance improvement that can be measured is the outcome of the digital transformation of the HR practices. However, due to lack of optimum correlation, the efficiency of the recruitment will be determined by the other elements such as human expertise, organizational policies and the market conditions.

**Table 2 Impact of AI Features on Recruitment Outcomes**

| Variable | Beta Coefficient | Significance (p-value) |
|---|---|---|
| Resume Screening Automation | 0.42 | 0.001 |
| Candidate Matching | 0.36 | 0.003 |
| Predictive Analytics | 0.29 | 0.010 |
| **$R^2 = 0.61$** | | |

The results of the regression model show that AI-inspired traits are significant in determining recruitment success, and its $R^2$ is 0.61, meaning that it can be used to explain 61 percent of the variation in the effectiveness of recruitment. The highest effect is on the screening of the resumes automation (Beta = 0.42), followed by the candidate matching (Beta = 0.36), and predictive analytics (Beta = 0.29). The outcomes show that all of the variables are statistically significant ($p < 0.05$), which makes their role in improving hiring processes possible to evaluate. It means that the automation of the resume screening is an essential parameter used to guarantee higher efficiency in the recruitment process, matching algorithms and predictive tools increase decision-making up to the optimal level. The findings aid the applicability of incorporating multiple aspects of AI to deliver the most efficient recruitment.

As may be observed in the data analysis, the existing talent acquisition practices can be significantly altered by AI-driven job portal that would significantly elevate their effectiveness, accuracy, and ease of use. Even though the rates of adoption are high, there are concerns related to bias and transparency. Correlation, regression analysis and statistical results confirm that AI technologies can play a meaningful and measurable role in recruitment in the Nagpur region.

**Conclusion**

Concluding the paper, it is possible to say that AI application in job portals has significantly transformed how people acquire talents in the Nagpur region, since it has facilitated an efficient, precise, and scalable process. The findings suggest that AI capabilities, such as automated resume analysis, smart alignment of a candidate, and predictive analytics, can be of great importance in consuming less time in hiring a new employee and improving recruitment decision making. Its usage amongst the HR professionals and recruiters is high, implying that the growing trend of relying on digital platforms in sourcing and selecting talents. Statistical analysis also indicates that there exists a high positive correlation between AI and efficiency in the recruitment process, thus making AI a significant factor, which influences the present HR practices.

Nevertheless, the article also shows that recognition systems that are based on AI are limited in a few ways. Relevant questions that potentially influence trust and fair employment are an algorithmic bias, transparency, and data privacy. The comparatively less conspicuous example of AI reducing bias also mentions the fact that the consequent need of maintaining human intervention becomes a crucial area of remaining ethical as a recruiter. On the whole, job portals where AI are used are a fantastic concept, but to achieve positive results, they need to be presented and operated adequately.

**Recommendations**

According to the study results, it is possible to offer several recommendations to make AI-based job portals more efficient in acquiring talent:

**Human Oversight Integration:** The organizations are advised to integrate both AI and human judgement in hiring as a hybrid method to enhance fairness, transparency and ethical decision making during hiring.

**Improving Algorithm Transparency:** Developers of AI-based job portals should consider making the AI more explainable to enable users to view what goes inside decision-making processes to ensure that AI becomes more trusting and responsible.

**Regular Bias Audits:** To monitor that AI systems do not disadvantage the opportunities of diverse candidates, the organizations should conduct regular audits of the AI systems, to recognize and remove potential obstacles to biasing algorithms.

**Training and Skill Development:** HR professionals and recruiters should be trained on how to effectively make use of AI resources to reap maximum benefits and minimum operational challenges.

**Enhancing Data Protection Policies:** All inclusive data protection policies are needed on the protection of information on the candidates to meet legal and ethical obligations.

**Further Implementation:** Bigger groups and the job seekers in the area should be equipped with awareness campaigns and technology so as to go on and incorporate AI-driven job portals.

To conclude, the utilization of AI-based job portal can make an ethical and strategic impact on the talent acquisition practice, turn the recruitment process more efficient, inclusive, and data-driven in the changing environment of the digital world.

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