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IMPACT OF AI-BASED RECRUITMENT ON HIRING EFFICIENCY

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Abstract

The rapid growth of Artificial Intelligence (AI) has changed traditional recruitment practices by improving hiring efficiency and decision-making. AI-based recruitment systems use technologies like machine learning, natural language processing, and data analytics to automate key hiring tasks such as job posting, resume screening, candidate shortlisting, and interview scheduling. This study looks at how AI-based recruitment affects hiring efficiency in organisations, focusing on time savings, cost savings, and quality of hire. The research relies on primary data gathered from HR professionals and employees in different sectors, along with secondary data from journals and reports. The analysis uses statistical tools like percentage analysis, weighted average scores, and chi-square tests. The findings show that AI-driven recruitment cuts down hiring time by automating repetitive tasks and effectively managing large numbers of applications. AI tools also boost accuracy in candidate matching by reducing human bias and supporting objective decision-making. However, the study also finds challenges, including the absence of human judgment, data privacy issues, and resistance to adopting new technology among recruiters. Despite these hurdles, the overall results suggest that AI-based recruitment positively impacts hiring efficiency when combined with human oversight. The study concludes that AI-based recruitment systems are useful for improving recruitment efficiency. It recommends that organisations take a balanced approach, combining AI technology with human skills to achieve the best hiring results.

Keywords: *AI recruitment, hiring efficiency, automation, HR technology, decision making.*

INTRODUCTION

Recruitment plays a key role in human resource management because it directly affects organisational performance and workforce quality. Traditional recruitment methods can be slow, expensive, and often biased, especially when dealing with a high volume of applications. As technology advances quickly, more organisations are using Artificial Intelligence (AI) to simplify and improve their recruitment processes. AI-based recruitment employs technologies like machine learning, natural language processing, and predictive analytics to automate tasks such as resume screening, candidate shortlisting, interview scheduling, and performance prediction. These systems allow organisations to process applications more quickly, reduce manual work, and improve the accuracy of candidate selection. This leads to better hiring efficiency in terms of time, cost, and quality of hires. This study aims to examine the impact of AI-based recruitment on hiring efficiency and evaluate its effectiveness compared to traditional recruitment methods. The research offers insights into how AI tools help create faster, more efficient, and more dependable hiring practices in modern organisations.

STATEMENT OF THE PROBLEM

In recent years, organisations have increasingly used Artificial Intelligence (AI) recruitment systems to improve hiring efficiency and handle large volumes of job applications. Despite the growing use of AI tools in recruitment, many organisations still face challenges like hiring delays, high costs, biased decisions, and mismatches between job requirements and candidate skills. While AI-based recruitment promises faster processing, better accuracy, and less human bias, its real impact on hiring efficiency is still unclear across different sectors. Furthermore, concerns about data privacy, the lack of transparency in AI decision-making, and resistance from HR professionals raise

doubts about the effectiveness and reliability of AI-driven recruitment systems. There is limited evidence that clearly shows whether AI-based recruitment significantly improves hiring efficiency compared to traditional methods. Therefore, this study aims to examine the impact of AI-based recruitment on hiring efficiency by looking at key factors such as time reduction, cost-effectiveness, quality of hire, and decision-making accuracy. The research seeks to identify the benefits and limitations of AI-based recruitment and provide insights into its effective implementation in organisations.

SCOPE OF THE STUDY

The focus of this study is to look at how AI-based recruitment affects hiring efficiency in certain organisations. It examines important recruitment tasks like job postings, resume screening, candidate shortlisting, interview scheduling, and final selection. It measures hiring efficiency by looking at time savings, cost, quality of hires, and decision-making accuracy. The research includes responses from HR professionals and employees who have used AI-driven recruitment tools. It takes place over a specific time frame and with a limited number of participants. The findings come from primary data gathered through structured questionnaires, along with support from secondary sources like journals and reports. The study does not go into technical details about AI algorithms and instead focuses on the practical use and results of AI-based recruitment in organisations.

OBJECTIVES OF THE STUDY

- To look at the impact of AI-based recruitment on hiring efficiency in organisations.
- To study the concept and features of AI-based recruitment systems.
- To examine how AI tools can reduce recruitment time and cost.
- To evaluate how effective AI-based recruitment is in improving the quality of hires.
- To identify the challenges and limitations linked to AI-driven recruitment.

RESEARCH METHODOLOGY

I. SOURCES OF DATA

The study uses both primary and secondary data. Researchers collected primary data through a structured questionnaire given to HR professionals and employees to gather their opinions on AI-based recruitment. They obtained secondary data from journals, textbooks, research articles, and websites to support the study.

II. DATA COLLECTION METHOD

1. Primary data

Primary data are collected through a structured questionnaire from HR professionals and employees.
This helps us understand their views on AI-based recruitment and its effect on hiring efficiency.

2. Secondary data

Secondary data come from journals, textbooks, research articles, company reports, and websites. This information provides theoretical support for the study.

III. AREA OF THE STUDY

The study looks at AI-based recruitment practices and how they affect hiring efficiency in certain organisations. It investigates recruitment tasks like resume screening, candidate shortlisting, interview scheduling, and final selection using AI tools. It also covers how AI technologies can improve the speed of recruitment, reduce costs, and make decision-making more accurate. The study examines how HR professionals and employees view AI-driven hiring. It is limited to certain organisations and a specific time frame.

IV. SAMPLING TECHNIQUE AND SAMPLE SIZE

The study uses a convenience sampling method to choose respondents who are readily available and engaged in recruitment activities. This approach is chosen because of time constraints and the simplicity of gathering data. The respondents include HR professionals and employees familiar with AI-based recruitment practices. The sample size is 70 respondents. This number is seen as enough to examine perceptions about the effects of AI-based recruitment on hiring efficiency. The data gathered from the respondents assists in assessing recruitment time, cost effectiveness, accuracy, and overall hiring efficiency.

V. PERIOD OF THE STUDY

The study collects data from HR professionals and employees using a structured questionnaire. It took place from November 2025 to January 2026 to examine how AI-based recruitment affects hiring efficiency in certain organisations.

VI. STATISTICALTOOLS OF THE STUDY

Simple Percentage Analysis

Simple percentages show how respondents feel and what they think in a clear way. They help compare different categories and identify trends in the data collected.

Chi-square Analysis

Chi-square analysis tests the relationship between variables and checks if differences in responses are statistically significant. It helps reveal links between personal factors and views on AI-based recruitment.

Average score

The average or weighted score measures the overall agreement or opinion of respondents on specific aspects of AI-based recruitment. It gives a summarised view of the data for easier interpretation.

LIMITATIONS OF THE STUDY

- The study is limited to certain organisations and may not reflect all sectors.
- The sample size of 70 respondents is fairly small, which could affect how widely the findings apply.
- Responses are based on perceptions, which might include bias.
- The study only looks at AI-based recruitment and does not examine other HR functions.

REVIEW OF LITERATURE

Impact of AI based Recruitment on hiring efficiency

1. The impact of E-recruitment and artificial intelligence AI tools on HR effectiveness

Dr Luigi Pio Leonardo Cavaliere (2021) [1]The study provides a fresh perspective on hiring in high schools through a 2021 paper, "The Impact of E-Recruitment and Artificial Intelligence (AI) Tools on HR Effectiveness: The Case of High Schools," ISSN: 1868-8519. This paper was led by Luigi Pio Leonardo Cavaliere and his colleagues. Their main goal was to determine if moving toward online recruitment actually improves performance in school districts. The results were clear: when schools adopted tech-based hiring tools, their HR teams worked faster and made fewer mistakes. These findings indicated that AI-supported processes not only streamlined tasks but also provided strategy-focused HR teams with a stronger footing.

2. Effectiveness of AI tools with respect to the recruitment and selection process

This study by **Ritu Talwar and Priyama Agarwal (2022)**[2] indicates how machines involves job hunting. It was published by two ISSNs: Online 0975-1432 and Print 0975-153X. Instead of guessing by themselves, they asked the real HR workers for their opinions on using structured surveys. Improved software helps teams sort through candidates much faster than before. Behind the scenes, decisions rely more on data rather than instincts. Efficiency increases at every stage as systems learn patterns without needing constant human input. Less repetitive work allows staff to focus on different tasks. Machines do not take over jobs; they change where attention is directed.

3. Artificial intelligence in revolutionising sustainable recruitment

DR. S.M. MASUDUR RAHMAN (2025) [3]This study shows a fresh look at hiring came from a 2025 paper published by S.M. Masudur Rahman called "Artificial Intelligence (AI) in Revolutionising Sustainable Recruitment." It uses the existing research to build the main ideas for their career. Instead of new surveys or trials, it gathered insights from earlier work found under ISSN 2582-6317. These digital assistants show less bias than traditional methods often do. Diversity improves because decisions rely on patterns instead of gut feelings. Behind the scenes, careful design prevents misuse. Ethical choices become part of the system's framework. Sustainability appears not just in savings but also in long-term social impact.

4.AI- Powered Human Resource Management for Enhancing Employee Recruitment Efficiency and Talent Retention in Organizations

DR. Kajal Chheda (2025)[4] A fresh look at workplace hiring came from a 2025 paper titled "AIPowered Human Resource Management for Improving Employee Recruitment Efficiency and Talent Retention in Organizations," authored by Kajal Chheda and her team. Issued under ISSN: 3046-4048, it gathered data from one thousand workers in the tech and finance sectors. The speed of filling roles increased once smart tools were introduced. What stood out was that systems could predict who might leave before they made that decision. As a result, companies found it easier to plan their teams for years to come. The outcomes showed a trend toward faster hiring and better choices for the person.

5. Power of Artificial Intelligence in Recruitment

Dr Wael Abdulrahman Albassam (2023)[5] examined how well machines sort through the job applications. In his 2023 paper, "The Power of Artificial Intelligence in Recruitment," with ISSN: 2525-3654, he analysed past studies. Instead of just praising new technology, he looked at real uses such as automated CV checks, virtual assistants, and predicting who might succeed. Efficiency improves when software handles repetitive tasks, but people still worry about fairness. While costs often drop and candidates feel more supported during hiring, hidden flaws exist within algorithms. Blind trust can lead to issues and risks, making ongoing through the necessity rather than an option. Guidelines that are based on ethics could help the developers to create designs that treat everyone equally.

DATA ANALYSIS AND INTERPRETATION

Data from 70 respondents were analysed using simple percentages, chi-square analysis, and weighted scores. The analysis shows that AI-based recruitment improves hiring efficiency by reducing time, cost, and manual effort. It also improves decision-making accuracy. Chi-square tests revealed significant relationships between demographics and perceptions. However, challenges such as data privacy and limited human judgment remain important issues.

PERSONAL PROFILE OF THE RESPONDENTS

TABLE NO:1.1

Personal profile	**Particulars**	**No of Respondents**	**Percentage(%)**
Gender	Male Female	32 38	43.7 54.3
Age	Below 18 years 18-30 years 31-40 years Above 41 years	22 32 15 1	31.4 45.7 21.4 1.4
Education Qualification	MBA MHRM MSW MA	26 19 13 12	37.1 27.1 18.6 17.1

Occupation	HR Executive HR Manager Recruitment Training &Development HR Analyst Others	9 17 15 16 7 6	12.9 24.3 21.4 22.9 10 8.6
Monthly income	Rs 15,000-25,000 Rs 40,000-80,000	31 27	44.3 38.6
	Rs.100,000 & Above Rs 800,000 & Above	11 1	15.7 1.4

Source Primary Data

Interpretation

From the above table, the 70 respondents include varied age groups, genders, educational qualifications, occupations, and monthly income levels, providing balanced perspectives. This diversity ensures that the findings on AI-based recruitment and hiring efficiency reflect experiences from different professional and demographic backgrounds. Most respondents are experienced in recruitment processes, and a majority are aware of AI tools. The variation in income and education allows an understanding of AI adoption across different organisational levels. Overall, the profile supports reliable and comprehensive insights into the impact of AI-based recruitment.

FREQUENCY OF IMPACT OFAI BASED RECRUITMENT HIRING EFFICIENCY

TABLE 1.2

Particulars	**Average score (%)**	**Interpretation**
AI recruitment reduces the time for hiring	41.1	Moderate reduction
AI recruitment improves the candidate shortlisting	47.9	Effective

AI recruitment contribute of generative AI and recruiter productivity	4.00	Moderate improvement
AI recruitment handle large volume of efficiency	4.32	Adequately well
AI recruitment contribute of generative AI technology to hire efficiency	4.08	High contribute

Interpretation

From this table, we understood that the respondents have a positive impact on the hiring efficiency, as the respondents mostly agree that reducing the hiring time and improving screening.

Chi-square Analysis – Age and overall Impact of AI-based recruitment on hiring efficiency

Null Hypothesis (Ho)

It indicates that there is no significant relationship between the personal factors of respondents and the overall impact of AI-based recruitment.

Alternative Hypothesis(H1)

It shows there is a significant relationship between the personal factors of respondents and the overall impact of AI-based recruitment on hiring efficiency.

Table 1.3

S.NO	Personal factors	Chi-square value	Significant value	S/NS
1	Age	9.26	0.026	S
2	Gender	3.18	0.074	NS
3	Educational qualification	10,84	0.013	S
4	Occupation	12.57	0.028	S
5	Monthly income	7.42	0.059	NS

Interpretation

The chi-square analysis between age and the overall impact of AI-based recruitment on hiring efficiency shows a significant link. This indicates that views on AI-driven recruitment differ among various age groups. It suggests that age plays an important role in shaping how respondents see the effectiveness of AI in improving hiring efficiency.

FINDINGS

- Based on the table 4.1, the study indicates that most respondents, especially young adults (18-30 years), have high exposure to AI-based recruitment on hiring efficiency.
- Table 4.2 shows the average score of the frequency of showing that most respondents agree AI- Based recruitment reduces time, lowers cost, and improves the quality of hiring.
- The mean score analysis indicates that AI-based recruitment improves hiring efficiency by reducing time, lowering cost, and supporting decision-making.
- Chi-square analysis shows that age, educational qualification, occupation, and monthly income have a significant relationship with hiring efficiency.
- From the table 4.3, we understood that younger adults had higher engagement in using AI-based recruitment.
- Overall, the findings reveal that AI-based recruitment positively influences hiring efficiency, particularly among young and professionally qualified HR personnel.

SUGGESTIONS

- Adopt AI-based recruitment tools with human oversight for fair hiring.
- Provide training programs for HR professionals to use AI systems effectively.
- Implement data privacy measures to protect candidate information.
- Regularly monitor and update AI tools to improve their efficiency.
- Conduct awareness programs to reduce resistance and increase acceptance of AI in recruitment.

CONCLUSION

The study finds that AI-based recruitment greatly improves hiring efficiency. It does this by cutting down recruitment time, lowering costs, raising the quality of hires, reducing bias, and aiding decision-making. Analysis with simple percentages, chi-square tests, and mean scores shows that respondents see AI tools as useful for streamlining recruitment. However, there are still challenges, like data privacy concerns and limited human judgment. Overall, it is suggested that organisations combine AI technology with human oversight to achieve better recruitment results. This approach makes the hiring process faster, more accurate, and cost-effective.

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