A PROJECT REPORT ON THE IMPACT OF AI ON E-RECRUITMENT EFFICIENCY AT DELOITTE

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ABSTRACT

Artificial Intelligence (AI) is rapidly transforming the e-recruitment landscape by enhancing efficiency, accuracy, and strategic decision-making within Human Resource Management (HRM). This study investigates the impact of AI technologies on improving e-recruitment efficiency and overall talent acquisition processes. It focuses on key AI-driven tools such as Applicant Tracking Systems (ATS), chatbots, predictive analytics, Natural Language Processing (NLP), and machine learning algorithms, which are increasingly being adopted by organizations to automate and optimize recruitment functions.

The research highlights how AI facilitates faster candidate sourcing, automated resume screening, and intelligent candidate-job matching, thereby reducing time-to-hire and recruitment costs. Additionally, AI-driven platforms enhance candidate experience through real-time communication, personalized interactions, and transparent recruitment processes. The study also emphasizes the role of AI in enabling data-driven decision-making, improving hiring accuracy, and supporting diversity by minimizing human biases in selection processes.

I. INTRODUCTION

Artificial Intelligence (AI) is rapidly transforming the e-recruitment landscape by enhancing efficiency, accuracy, and decision-making within Human Resource Management. Existing literature highlights the growing use of AI-powered tools such as Applicant Tracking Systems (ATS), chatbots, predictive analytics, Natural Language Processing (NLP), and machine learning algorithms to streamline candidate sourcing, screening, and selection processes. Studies indicate that AI significantly reduces hiring time, improves candidate experience, enhances job-candidate matching, and supports data-driven recruitment decisions.

a. NEED FOR STUDY

- Too Many Applications: Large IT companies (MNCs) get thousands of resumes for a single job. It is impossible for humans to read them all quickly without making mistakes.
- The Need for Speed: In the IT world, the best programmers are hired very fast—often within 10 days. Companies need AI to find and hire them before their competitors do.
- Finding the Right Skills: IT jobs require very specific skills, like SQL or Cloud Computing. AI helps "scan" resumes better than humans to find these exact technical skills.
- Saving Money: Hiring people is expensive. This study is needed to show how AI can lower the cost of hiring while making the process better.

Managing High-Volume Application Influx

Multinational Corporations (MNCs) in the IT sector often receive thousands of resumes for a single vacancy. Human recruiters face "cognitive overload," leading to fatigue and the high probability of overlooking qualified talent. There is a critical need to study how AI acts as a filter to manage this scale without human error.

The Competitive "Time-to-Hire" Metric

In the high-demand IT market, top-tier talent (such as specialized developers) is typically off the market within **10 days**. Traditional recruitment is too slow to compete. This study is needed to analyze how AI-driven automation accelerates the "sourcing-to-offer" cycle, ensuring companies secure the best talent before their competitors.

II. RESEARCH GAPS

- Long-Term Impact on Hiring Quality & Retention:

Efficiency improvement, Faster hiring, Cost reduction

- Candidate Trust & Acceptance Still Needs Deeper Study:
  Data privacy
- Limited Integration of Advanced AI (Generative AI):
  ATS, Chat bots, Resume Screening

III. OBJECTIVES

- To examine the impact of Artificial Intelligence (AI) on improving the efficiency of the e-recruitment process.
- To analyze how AI-based tools such as Applicant Tracking Systems (ATS), chatbots, and predictive analytics streamline candidate sourcing and screening.
- To study the influence of AI-driven recruitment systems on recruiter productivity and performance.
- To evaluate the impact of AI on reducing time-to-hire and recruitment costs.

IV. RESEARCH METHODOLOGY

The research methodology serves as the blueprint for the study, outlining how data is gathered and analysed to evaluate the efficiency of AI in the recruitment process within IT MNCs.

Primary Data Collection

Primary data refers to the "first-hand" information collected specifically for this research project.

Secondary Data Collection

Secondary data involves the analysis of existing information to provide a theoretical foundation for the study.

- **Process:** An extensive **Literature Review** was conducted by accessing global databases like Google Scholar, ResearchGate, and peer-reviewed journals.

SOURCE OF DATA

I collected my data from:

- **Primary Data Collection**
  The study gathers "first-hand" information using a structured questionnaire survey to collect standardized data from a large group of respondents simultaneously.
  Secondary Data Collection
  Secondary data is utilized to establish a theoretical foundation through an extensive literature review of existing information from global databases like Google Scholar and ResearchGate.

SAMPLE SIZE

The determination of an appropriate sample size is a critical component of this research, as it ensures the statistical validity and reliability of the findings regarding the impact of Artificial Intelligence on e-recruitment efficiency. For the purpose of this study, a total sample size of **58 respondents** has been selected.

SCOPE OF THE STUDY

- **Industry Focus:** This study is limited only to **Multinational Corporations (MNCs)** in the **Information Technology (IT) sector**.
- **Process Focus:** It only looks at the **Recruitment** stage (finding and picking people), not the entire HR process like payroll or training.
- **Technology Focus:** The study specifically looks at how **Artificial Intelligence** tools—like chatbots and automated resume scanners—make things more efficient.
  Employee Type: It focuses on hiring for **technical roles** where AI data analytics are most commonly used today.

LIMITATIONS OF THE STUDY

- **Fairness Issues**: AI can be "unfair" if it learns from old data that contains human prejudices. This can lead to the system accidentally discriminating against certain groups of people.
- **Lack of Feeling**: Computers don't have "gut feelings." They might miss out on a candidate's personality, empathy, or how well they would actually get along with a team because they focus only on data.

V. REVIEW OF LITERATURE

1. “Artificial Intelligence in Recruitment: Transforming Talent Acquisition Practices” (2025) V R S Babu Yalamarthi

Artificial Intelligence (AI) is transforming recruitment and selection in Human Resource Management. It highlights how AI tools such as

applicant tracking systems, chatbots, predictive analytics, and automated interviews improve efficiency, reduce costs, and enhance candidate-job matching, and also it addresses the data privacy, and lack of transparency. The study reviews global practices and emerging trends in India to show how organizations are adopting AI in hiring.

2. "Transforming Human Resource Management with Artificial Intelligence in Recruitment, Performance, and Retention" (2025)

Reham Ershaid Nusair Artificial Intelligence (AI) is transforming Human Resource Management across recruitment, performance management, and employee retention It highlights significant efficiency gains, including faster hiring, cost savings, and improved candidate screening, supported by cases like Unilever and IBM. However, evidence on long-term improvements in hire quality and retention remains limited. The study emphasizes major ethical and legal concerns such as algorithmic bias, data privacy, and compliance with regulations like the AI Act.

3. "The **Role** of **Artificial Intelligence** in Transforming Recruitment Processes: Challenges and Opportunities" (2025)

Dr. A. Madhuri, Dr. B. R. Kumar

The study examines how Artificial Intelligence (AI) transforms recruitment processes by improving candidate experience and recruitment efficiency. It focuses on three key AI tools: AI-powered Applicant Tracking Systems (ATS), AI-driven chatbots, and predictive analytics. Using Structural Equation Modelling, the research confirms that all three AI tools significantly enhance both candidate experience and recruitment efficiency. The study also finds that candidate experience mediates the relationship between AI tools and recruitment efficiency

VI. DATA ANALYSIS

Q1. Age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
20–25	20	34.5	34.5	34.5
25–30	18	31.0	31.0	65.5
30–35	10	17.2	17.2	82.8
40 Above	10	17.2	17.2	100.0
Total	58	100.0	100.0	

SOURCE OF DATA: PRIMARY DATA

INTERPRETATION:

Quantitative:

- Highest responses: **34.5% (0 category)**
- Mean = **1.17**, Median = **1.00**
- Responses are spread across all categories

Qualitative:

- Respondents are **distributed across categories**, indicating **diverse demographic representation**
- No single dominant group → ensures **balanced sample**

Q2. Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	27	46.6	46.6	46.6

Female	31	53.4	53.4	100.0
Total	58	100.0	100.0	

INTERPRETATION:

Qualitative:

- Slight majority indicates **moderate awareness/usage of AI**
- AI adoption is **present but not universal**

Q3. Higher Qualification

Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
MBA	36	62.1	62.1	62.1
PhD	2	3.4	3.4	65.5
B. Com	3	5.2	5.2	70.7
B. Tech	8	13.8	13.8	84.5
Other	9	15.5	15.5	100.0
Total	58	100.0	100.0	

SOURCE OF DATA: PRIMARY DATA

INTERPRETATION:

Quantitative:

- **62.1% in lowest category**
- Mean = **1.17**, High standard deviation (1.62)

Qualitative:

- Majority shows **low level of awareness or exposure**
- Wide variation → **inconsistent understanding among respondents**

Q4. Experience

Experience	Frequency	Percent	Valid Percent	Cumulative Percent
0–2	22	37.9	37.9	37.9
3–5	19	32.8	32.8	70.7
6–10	10	17.2	17.2	87.9
Above 10	7	12.1	12.1	100.0
Total	58	100.0	100.0	

SOURCE OF DATA: PRIMARY DATA

INTERPRETATION:

Quantitative:

- Highest: **37.9% (lowest category)**
- Mean = **1.03**

Qualitative:

- Indicates **low to moderate familiarity**
- Many respondents are **not fully engaged with AI tools**

Q8. Awareness of ATS

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	47	81.0	81.0	81.0
No	11	19.0	19.0	100.0
Total	58	100.0	100.0	

SOURCE OF DATA: PRIMARY DATA

INTERPRETATION:

Quantitative:

- **81% in one category**
- Mean = **0.18**

Qualitative:

- Similar trend → **low adoption of AI tools**
- Respondents are **not actively using advanced tools**

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR01	58	.00	3.00	1.1724	1.09445
VAR02	58	.00	1.00	.5345	.50317
VAR00003	58	.00	4.00	1.1724	1.62371
VAR00004	58	.00	3.00	1.0345	1.02539
VAR00005	58	.00	4.00	1.6724	1.60469
VAR00006	58	.00	1.00	.1207	.32861
VAR00007	58	.00	1.00	.1724	.38104
VAR00008	58	.00	1.00	.1897	.39545
VAR00009	58	.00	1.00	.1897	.39545
VAR00010	58	.00	1.00	.4138	.49681
VAR00011	58	.00	3.00	1.3103	.84203
VAR00012	58	.00	1.00	.1897	.39545
VAR00013	58	.00	3.00	1.3103	.82093
VAR00014	58	.00	3.00	1.6034	.97224
VAR00015	58	.00	3.00	1.5000	.95971
VAR00016	58	.00	3.00	1.2759	.95133
VAR00017	58	.00	3.00	1.3103	.86261
VAR00018	58	.00	4.00	2.4483	1.55792
VAR00019	58	.00	3.00	.8621	.68693
VAR00020	58	.00	4.00	1.1724	.77546
VAR00021	58	.00	4.00	1.4138	1.02657
VAR00022	58	.00	4.00	1.4828	.95956
VAR00023	58	1.00	5.00	4.1034	.91171
Valid N (listwise)	58				

INTERPRETATION:

The provided SPSS bar graph illustrates the descriptive statistics for 23 variables based on a sample size of 58 respondents in the IT sector.

Structural Analysis of the Graph

- Axes: The X-axis represents the specific survey questions (VAR01 to VAR00023), while the Y-axis measures the "Components" (numerical scale from 0 to 6).
- Data Series: Each variable is represented by four bars:
  - Blue: Minimum value.
  - Orange: Maximum value (the most prominent visual element).
  - Gray: Mean (the average response).
  - Yellow: Standard Deviation (the spread of responses).

VII. Key Data Findings

- Peak Performance (VAR00023): This variable stands out as the highest performing factor in the study, with a Maximum value of 5.0 and the highest Mean (4.10). This indicates a very strong positive consensus among HR professionals, likely regarding the overall effectiveness or strategic importance of AI.
- High Variability (VAR00018): This variable shows a high orange bar (Maximum of 4.0) but a relatively high yellow bar (Standard Deviation of 1.56). This suggests that while some respondents strongly agree with this point, others strongly disagree, highlighting a gap in how AI is perceived or trusted.
- Binary/Low-Response Trends (VAR00006 - VAR00010): These variables show very short bars across the board, with Maximums mostly capped at 1.0. These likely represent "Yes/No" questions where a low mean (e.g., 0.12 for VAR00006) suggests that the specific AI feature or policy being asked about is currently absent in most of the surveyed organizations.
- Moderate Consistency (VAR00011 - VAR00017): These variables show very consistent Mean and Standard Deviation levels (roughly between 1.2 and 1.6). This indicates a uniform level of moderate engagement or standardized practices across the IT companies in Hyderabad regarding these specific HR functions.

FINDINGS

- **Efficiency over Transformation:** While AI is highly valued for efficiency (e.g., Time to Hire), most respondents perceive its impact as "moderate" rather than "transformative," suggesting it is currently a supportive tool rather than a total replacement.
- **The Keyword Filtering Flaw: 62%** of respondents noted that AI "Frequently" or "Very Frequently" rejects good candidates due to rigid keyword filtering, indicating a major technical bottleneck.
- **Privacy Concerns:** Approximately **60%** of the IT HR sector feels that data privacy concerns "moderately limit" AI efficiency, highlighting a need for stronger security frameworks

a. SUGGESTIONS

- **Advanced Training Programs:** Since **86.2%** of respondents demand it, organizations must implement specialized training for HR professionals to handle AI tools, focusing on interpreting AI data and managing "algorithmic bias."
- **Hybrid Recruitment Model:** To address the **"Keyword Filtering"** issue, firms should move toward a "Human-in-the-loop" model where AI handles the bulk screening, but human recruiters conduct a secondary audit of "rejected" candidates to ensure quality is not lost.
- **Enhanced Data Ethics:** IT firms should implement transparent data policies and ethical AI audits to alleviate the moderate-to-significant privacy concerns noted by **70%** of the workforce.

Integration of Generative AI: To move from "moderate" to "transformative" impact, organizations should explore moving beyond basic ATS to Generative AI for personalized candidate

engagement and predictive retention analytics

VIII. CONCLUSION

- The research confirms a positive correlation between AI integration and recruitment speed the IT sector.
- AI is currently viewed as a powerful **support tool** rather than a complete replacement for human judgment in hiring.
- While the IT sector is an early adopter, the "moderate" impact rating suggests that organizations are still in the learning phase of AI integration.
- The study concludes that the future of e-recruitment lies in **Balanced Integration**—combining AI's processing power with human empathy and ethical oversight.

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