



**International Conference on Reimagining Management:
Sustainability and Innovation in the AI Era**

**Organised By: Dnyan Ganga Education Trust's,
Degree College of Arts, Commerce & Science, Thane**

A Critical Comparative Study of AI Chatbots and Traditional Recruitment Approaches: Reviewing Candidate Experience in Terms of Challenges, Technological Growth, and Future Opportunities

Prabhpreet Kaur Nagpal

Assistant Professor, Ramanad Arya DAV College (Autonomous)

Abstract

This research critically examines the transformative role of AI chatbots in recruitment compared to traditional methods, with specific focus on candidate experience. Through systematic analysis of existing literature and industry case studies, the study reveals that AI chatbots reduce recruitment time by 43% and costs by up to 50% while providing 24/7 candidate engagement. However, significant challenges persist including algorithmic bias, lack of human empathy, and transparency issues. Traditional recruitment methods, while offering personal interaction, remain time-consuming and prone to human bias. The study synthesizes findings from three foundational research papers spanning 2021-2025 to identify technological growth patterns, including advancements in Natural Language Processing, predictive analytics, and conversational AI. Case studies from Indian organizations including Infosys, Reliance Industries, and Flipkart demonstrate successful AI implementation, with Unilever reporting 75% reduction in hiring time. The research identifies critical research gaps including missing candidate-centric perspectives, cross-cultural insights, and underexplored hybrid models. Findings suggest that optimal recruitment outcomes require balanced integration of AI efficiency with human judgment, supported by ethical oversight and continuous bias auditing. The study concludes with recommendations for developing hybrid recruitment frameworks and global ethical standards for AI-powered hiring.

Keywords: AI Chatbots, Traditional Recruitment, Candidate Experience, Algorithmic Bias, Hybrid Recruitment Model, Natural Language Processing, Recruitment Automation, Conversational AI, Ethical AI, Talent Acquisition, Predictive Analytics, Candidate Engagement, Human Judgment, Recruitment Technology, Bias Mitigation.

1.1. Introduction -

AI is transforming various recruitment workflows, including automating sourcing through job boards, screening applicants with chatbots, scheduling interviews via email assistants, analyzing interviews to reduce bias,

and matching candidates to open positions based on skill sets.

The use of AI chatbots in recruitment is changing the way recruiters source candidates, which saves 43% in time and up to 50% in costs. They are available 24/7 and are able to provide instant answers to candidates' questions. They are also able to rank candidates. This is a new way of recruitment that is fast and data-driven. It is different from the traditional recruitment method, which is slow and biased. In the traditional method, recruiters use emails and phone calls.

The AI-powered recruitment tools are able to perform a variety of tasks. They are able to provide answers to candidates' questions, which are mostly asked on a daily basis.

AI Chatbot Streamlining the Hiring Process:-

It plays a significant role in making the recruitment process more streamlined. The following are some of the key roles AI chatbots play in streamlining the recruitment process:

Pre-Screening Candidates:- AI chatbots play a vital role in the recruitment process. They can pre-screen the candidates. They can conduct the initial interviews with the candidates. They can ask the relevant questions based on the answers provided by the candidates. It helps the recruiters to concentrate on the best candidates.

Scheduling Interviews:- It is one of the most challenging tasks faced by the recruiters during the recruitment process. They have to schedule the interviews with the candidates. It becomes simpler with the help of AI chatbots. They can schedule the interviews with the candidates.

Data Collection and Insights:- AI chatbots play a vital role in the recruitment process. They can collect valuable data during the recruitment process. They can collect data based on the behavior of the candidates. It helps the organization gain valuable insights during the recruitment process.

Integration with HR System:- AI chatbots can easily integrate with the existing HR system as well as the applicant tracking software.

1.2. Significance of the study

- Synthesizes existing literature to bridge the gap between traditional and technology-driven hiring processes.
- Assesses the usefulness of AI chatbots in enhancing response times and candidate engagement.
- Serves as a starting point for designing hybrid recruitment models that incorporate both AI and traditional recruitment strategies.
- Suggests opportunities for further investigation into the evolving potential of AI in augmenting recruitment processes.

1.3. Objectives –

- To conduct a study on the AI-driven chatbots and the traditional recruitment methods through the existing secondary data.
- To identify the difficulties faced by the candidates using both the methods.
- To evaluate the growth of technology used in recruitment.
- To evaluate the fairness, inclusivity, and transparency of the system.

1.4. Limitations of Research

- Sample Bias: Most studies are industry-based (IT, consulting), making it difficult to generalize.
- Tech-related: AI tools are constantly improving, making studies relevant only for a certain period.
- Subjectivity of candidate experience: It differs across cultures and industries.
- Data privacy: Ethical considerations of AI-based recruitment are rarely taken into account.
- Accessibility: Candidates without digital literacy might be at a disadvantage.

1.5. Research gap –

- Candidate-centric focus missing: Existing literature emphasizes organizational efficiency rather than candidate perceptions.
- Cross-cultural insights absent: Studies are often Western-centric, ignoring diverse global recruitment contexts.
- Hybrid model underexplored: Few studies analyze how combining AI with human recruiters impacts satisfaction and outcomes.
- Long-term effects unclear: Research rarely examines retention, career advancement, linked to recruitment methods.

1.6. Comparative Analysis on Challenges :-

AI Chatbots:

- Risk of algorithmic bias in screening.
- Lack of human empathy in sensitive conversations.
- Transparency issues in decision-making.
- Over-reliance on keyword matching, potentially filtering out qualified candidates.

Traditional Recruitment:

- Time-consuming and resource-heavy processes.
- Human bias in decision-making.
- Scalability issues with large applicant pools.
- Inconsistent communication and feedback to candidates.

1.7 Technological Growth and Transformations -

- Chatbots now utilize Natural Language Processing (NLP) for better candidate interaction.
- Predictive analytics improve candidate-job matching.
- Gamification in tests and candidate interaction has shown to be effective.
- The conventional recruitment process is increasingly adopting technology, such as video interviews and applicant tracking systems, although in a slower manner in terms of automation.

1.8 Recruitment Technology- Future Outlook :-

The next phase of AI in recruitment will bring even more sophistication and personalization:

- AI Co-Pilots for Recruiters: Embedded within Customer Relationship Management systems, suggesting best candidate fits, communication strategies, and hiring schedules.
- Hyper-Personalized Job Recommendations: AI-based personalizations of job fits based not only on resumes but also on career goals, learning modalities, and work preferences.
- AI-Powered Internal Mobility: Leveraging skill maps and performance data to match internal talent with open positions.
- Ethical AI and Explainability: As AI plays a critical role in the hiring process, recruiters will need to comprehend, monitor, and explain the decision-making process itself.

Shifting Role of the Recruiter:-

- With AI taking over repetitive and time-consuming tasks, the role of the recruiter is evolving:
- From resume scanning to relationship building
- From manual screening to strategic talent advising
- From transactional hiring to data-driven workforce planning

1.9. List of Best AI Chatbot Companies in India



1. **Zobot** : - It is a customizable AI powered chatbot development platform which is utilized for automating the customer interactions and support on multiple platforms.

Furthermore, you can also build this chatbot with different methods.

You can go for the no code methods or opt for the scripting language as per your preferences. It can even integrate to other zoho applications and external services.

2. Haptik :-

Haptik is India's one of the best AI-based conversational Platform that is designed to enable conversation led commerce for businesses. It says its technology is popular within sectors such as banking, telecoms and e-commerce for conversational AI. It also supports Multilingual including Indian languages.

3. Yellow.ai :-

Yellow. ai is the conversational ai platform for the enterprise that brings together the Automation and Human touch to deliver true human like conversation at scale. It empowers businesses to improve customer experience through voice and chat for all digital and voice channels.

4. Verloop.io

Verloop. io A number of factors such as lack of resources, time and cost contribute towards the cap rate being a high one. It powers standardized, tailored communication by chatbots at scale. It has AI-based ticket management and routing & 24/7 automated assistance

5. Engati

Engati makes it easier to build chatbot, AI powered chatbot and live chat platform for businesses. It is designed for rapid deployment and programmable automation. It has Advanced analytics and reporting & Multichannel chatbot deployment.

1.10. Success Stories from Indian Technological Revolutions companies - A Rising Profession in the Age of Talent Wars

Infosys: The IT giant has merged conversational AI into its recruitment process for early-career roles. An AI chatbot acts as the first round of screening to ask situational/technical questions and analyze candidate tone and fluency, reducing the initial screening load by 40%.

Reliance Industries: The conglomerate is actively using AI-powered voice bots to conduct interviews at scale (up to 1,000 calls per minute). They use these bots to screen candidates, particularly for large-scale hiring needs, through partners like GetWork.ai.

Ajmera Group: This real-time estate firm transitioned from manual resume handling to using Babble Bots (voice-AI chatbots) to screen and evaluate candidates, resulting in a 20% cut in transition time.

Byju's: The edtech firm is listed among the 8,000 employers utilizing GetWork.ai's AI voice bot platform, which acts as a virtual recruiter to conduct interviews and assess freshers.

IHM (International Institute of Hotel Management): The institution uses an AWS-based AI recruitment platform featuring custom chatbots for screening, which made their interview cycles 50% faster.

UP Police Recruitment Board: In a massive public sector drive (60,000 recruits), the board used AI for voice, facial,

and biometric matching to replace traditional manual verification in a "Chakravayuh" initiative.

Flipkart: Enhancing Efficiency in Tech Hiring

E-commerce major Flipkart incorporated AI into its recruitment funnel to improve the efficiency of hiring software developers and product managers.

Features -

- ✓ Resume screening AI (to match role-fit)
- ✓ Coding assessment tools
- ✓ Candidate engagement chatbots

UNILEVER:

Unilever is one of the most globally cited examples of successful AI-driven recruitment transformation. The company adopted a multi-layered AI hiring system that includes chatbots, AI assessments, and automated screening, used across more than 50 countries and for early-career roles.

Impact on Time-to-Hire:

- Reducing hiring time by 75% with ai-powered screening
- Interview Reduction: The company reduced human interviews by 70%, allowing recruiters to focus only on high-potential candidates.
- Efficiency & Cost Savings: The AI system saved the company over 50,000 hours of recruiter time in its first full year of deployment.
- Candidate Experience: More than 80% of candidates reported a positive experience with the AI-driven recruitment process.

IKEA:

IKEA implemented a recruitment chatbot (via WhatsApp) to enhance user experience for candidates, especially in markets where click-based application funnels were underperforming. The bot asks interactive, quiz-like questions, recommends roles based on responses, and guides job seekers through role descriptions.

2.0. Research methodology -

This research will utilize secondary data analysis, which involves analyzing existing research, industry growth, and surveys, as opposed to conducting new research. The advantages of this approach for this research include access to large-scale data sets that would be impossible to gather, access to longitudinal data on the evolution of candidate attitudes, and access to multiple sources of research.

The data analysis will utilize grounded theory, which involves using inductive research to identify patterns and themes emerging from the existing research.

3.0. Literature review -

- **Reimagining recruitment: traditional methods meet AI interventions- A 20-year assessment -**

(2025) - Aaradhana Rukadikar , Komal Khandelwal , Umma Warriar

This systematic literature review of 60 studies (2003–2023) examines the shift from traditional recruitment to

AI-assisted methods using the (TCCM) Theory-Context-Characteristics-Methodology framework. Traditional methods face manual screening and bias issues, while AI improves speed, objectivity, and efficiency. AI improves speed, objectivity, and efficiency but raises ethical concerns like bias. The study combines Technology Acceptance Model and Resource-Based View to link individual adoption with organizational strategy. Key adoption factors include performance expectancy. Organizations should focus on user-centered AI design and training. Future research needs longitudinal studies on ethical implications.

➤ **Integration of AI with Traditional Recruitment Methods -**

(2021) Kiran Kumar Reddy Yanamala –

This study proposes a hybrid recruitment model combining AI efficiency with human judgment. AI handles initial resume screening quickly, while humans evaluate qualitative factors like cultural fit. (CRITIC) Criteria Importance Through Inter criteria Correlation and (WASPAS) Weighted Aggregated Sum Product Assessment methods optimize candidate ranking. The hybrid approach reduces bias, improves efficiency, and ensures contextual understanding. Human oversight prevents algorithmic bias while maintaining AI speed. Implementation requires technology investment and quality data. This integrated model enables more balanced and effective hiring decisions.

➤ **Design and Enhancing Recruitment Processes: A Comparative Analysis of AI Driven Automation Versus Traditional Methods**

(2024) Dr. Nellimala Abdul Shukoor & Dr. Amiya Bhaumik

This study compares AI-driven recruitment automation with traditional methods. Traditional approaches are time-consuming and prone to human bias. AI tools offer speed, scalability, and consistency through resume screening algorithms and predictive analytics. AI significantly reduces time-to-hire: entry-level from 30 to 10 days, senior-level from 60 to 25 days. Cost per hire drops 30-50% across departments. AI achieves 95% screening efficiency versus 50% manually, with higher candidate satisfaction and lower dropout rates. Challenges include algorithmic bias and ethical concerns requiring oversight. AI automation optimizes recruitment but needs balanced integration with human judgment.

4.0. Future Research Directions - Future Opportunities and Synthesis Pathways

- Hybrid recruitment models: AI for initial screening, humans for final interviews.
- Personalized AI systems: Adaptive chatbots that tailor responses to candidate profiles.
- Bias auditing tools: Embedding fairness checks into AI recruitment systems.
- Candidate empowerment platforms: Real-time feedback and transparent progress tracking.
- Global ethical frameworks: Standardizing AI recruitment practices across industries and regions.

5.0. Findings , suggestions & Conclusions -

Findings -

- AI chatbots reduce recruitment time by 43% and costs by up to 50% compared to traditional methods, with 24/7 availability enabling instant candidate responses.
- AI achieves 95% resume screening efficiency versus 50% manually, with Infosys reporting 40% reduction in initial screening load through conversational AI implementation.
- Unilever reduced hiring process from 4 months to 4 weeks (75% reduction), cutting human interviews by 70% while maintaining 80% positive candidate experience.
- Reliance Industries successfully deployed AI-powered voice bots conducting up to 1,000 candidate calls per minute for large-scale hiring initiatives.
- AI automation reduces candidate dropout rates through improved communication, process efficiency, and precise candidate-job matching.
- Success stories span IT (Infosys, Flipkart), manufacturing (Reliance), real estate (Ajmera Group), education (IIHM), and public sector (UP Police), demonstrating broad applicability.

Suggestions -

- Organizations must provide training programs for candidates with limited digital access and HR professionals requiring upskilling in AI tool management.
- Recruitment AI should be trained on diverse, multi-regional datasets to ensure cultural sensitivity and avoid Western-centric bias in global hiring.
- Real-time feedback mechanisms should be embedded in AI systems to continuously improve candidate experience and address concerns promptly.
- Organizations should adopt global ethical frameworks for AI recruitment, addressing data privacy, algorithmic transparency, and compliance with anti-discrimination regulations.
- Chatbots should evolve to provide adaptive, context-aware responses tailored to individual candidate profiles and preferences.

6.0. Conclusions -

This research conclusively establishes that AI chatbots have fundamentally transformed recruitment landscapes, offering unprecedented efficiency, scalability, and consistency. AI achieves 95% screening efficiency versus 50% manually, with Unilever reducing hiring from four months to four weeks while maintaining 80% positive candidate experience.

However, the study equally confirms that AI cannot fully replicate human judgment in assessing qualitative factors like cultural fit, emotional intelligence, and growth potential. Both approaches face distinct bias challenges—algorithmic bias in AI systems versus human bias in traditional methods—requiring continuous monitoring and oversight. The optimal path forward lies in hybrid models that strategically combine AI's computational

power for initial screening with human intuition for final evaluation and contextual understanding.

Critical challenges including algorithmic bias, transparency deficits, and depersonalization risks demand immediate attention through ethical governance frameworks, continuous auditing, and inclusive design principles. The research identifies significant gaps in candidate-centric perspectives and cross-cultural insights, highlighting urgent needs for diversified research methodologies spanning diverse global contexts.

Success will depend on developing standardized global frameworks, investing in digital literacy for both candidates and HR professionals, and maintaining human oversight in critical decision-making junctures. Ultimately, the future of recruitment lies not in choosing between AI and human judgment but in architecting integrated systems where each complements the other's strengths while mitigating respective weaknesses, ensuring fair, efficient, and inclusive hiring practices for all candidates across industries and cultures.

7.0. References -

1. Aaradhana Rukadikar, Komal Khandelwal, & Uma Warriar. (2025). Reimagining recruitment: Traditional methods meet AI interventions—A 20-year assessment (2003–2023). *Cogent Business & Management*, 12(1), 2454319. <https://doi.org/10.1080/23311975.2025.2454319>
2. Dr. Nellimala Abdul Shukoor, & Dr. Amiya Bhaumik. (2024). Design and enhancing recruitment processes: A comparative analysis of AI-driven automation versus traditional methods. *Library Progress International*, 44(5), 578-587.
3. Kiran Kumar Reddy Yanamala. (2021). Integration of AI with traditional recruitment methods. *Journal of Advanced Computational Systems*, 1(1), 1-7. <https://doi.org/10.69987/JACS.2021.10104>
4. Assess Candidates. (n.d.). *AI chatbots for recruitment*. Retrieved from <https://www.assesscandidates.com/ai-chatbots-for-recruitment/>
5. Babblebots.ai. (n.d.). *AI vs traditional recruitment: Who wins the talent war?* Retrieved from <https://babblebots.ai/blog/ai-vs-traditional-recruitment-who-wins-talent>
6. Mankotia, A. (n.d.). *India's hiring game-changer: Artificial intelligence in recruitment*. LinkedIn. Retrieved from <https://www.linkedin.com/pulse/indias-hiring-game-changer-artificial-intelligence-aruness-mankotia-f1hrc>
7. Recruitryte. (n.d.). *Transforming hiring: AI chatbots in communication and engagement*. Retrieved from <https://recruitryte.com/blog/transforming-hiring-ai-chatbots-communication-engagement/>
8. System Integration. (n.d.). *Best Indian AI chatbots*. Retrieved from <https://systemintegration.in/blog/best-indian-ai-chatbots/>

