

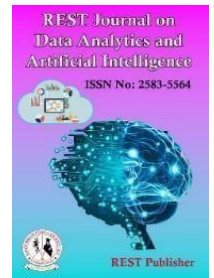
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AI-Enhanced Video Interviewing: Behavioural Analysis and Decision Making

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Abstract: This research paper explores the integration of Artificial Intelligence (AI) into video interviewing, focusing on behavioral analysis and decision-making in recruitment. With advancements in machine learning, computer vision, and natural language processing, AI-powered systems can now assess facial expressions, voice tone, body language, and speech patterns to evaluate candidates more accurately. This paper discusses the advantages of AI-enhanced video interviews, such as improved efficiency, reduced bias, and scalability. It also highlights ethical challenges, concerns of privacy, and potential algorithmic biases. Through primary data collection, statistical analysis, and hypothesis testing, the study evaluates the effectiveness of AI-based behavioral assessments in comparison to traditional interviews. The paper also provides recommendations for HR professionals on adopting such technologies responsibly. By identifying research gaps and offering a practical roadmap, this study contributes to understanding how AI can support more data-driven, fair, and efficient hiring decisions in today's rapidly evolving job market.

Keywords: AI in Recruitment, Video Interviewing, Behavioral Analysis, Machine Learning, HR Technology, Bias Reduction, Talent Acquisition, Facial Recognition, Candidate Assessment, Automated Hiring

1. INTRODUCTION

The recruitment landscape is rapidly evolving with the emergence of Artificial Intelligence (AI). One area that has gained significant attention is **AI-enhanced video interviewing**. Traditional face-to-face interviews are often subjective and time-consuming, whereas AI-powered systems offer faster and potentially more objective assessments by analyzing behavioral cues such as facial expressions, gestures, speech tone, and verbal responses.

These systems use machine learning and computer vision to assess candidates' psychological and emotional characteristics, helping HR professionals make more informed hiring decisions. The integration of AI into video interviewing is transforming how companies screen and select talent, especially in remote, global, and high-volume hiring scenarios.



FIGURE 1.

2. IMPORTANCE OF THE STUDY

- **Speed and Efficiency:** Automating behavioral analysis helps HR save time and effort.
- **Scalability:** AI enables companies to conduct thousands of interviews across time zones.
- **Consistency:** AI systems apply the same criteria to every candidate, reducing subjectivity.
- **Data-Driven Decisions:** AI provides quantitative data to support hiring decisions.

3. Research Gap

Despite the growing use of AI in HR, few studies have focused specifically on how **AI systems analyze behavioral cues** and how reliable these judgments are compared to human interviewers. There is limited empirical research exploring the **accuracy, bias, and effectiveness** of these systems in real-world settings.

4. STATEMENT OF THE PROBLEM

While AI-enhanced video interviewing tools promise faster and fairer hiring, there is a **lack of clarity on their reliability** in interpreting human behavior and **concerns about bias** embedded in the algorithms. The central problem is to evaluate whether AI tools can **objectively and ethically enhance hiring decisions** through behavioral analysis.

5. RESEARCH METHODOLOGY

5.1 Type of Research: Quantitative and descriptive research using survey data and statistical analysis.

5.2 Data Collection:

- **Primary Data:** Survey of 50 HR managers and 100 candidates who participated in AI video interviews.
- **Secondary Data:** Literature from journals, company reports, and AI tool documentation.

5.3 Tools Used:

- Google Forms for surveys

- SPSS for statistical analysis
- Pie Chart for analysis

6. SOLUTION FOR THE PROBLEM

To enhance fairness and accuracy:

- Use **transparent algorithms** that provide explainable results.
- **Train AI models** using diverse datasets to reduce bias.
- Use AI **only as a support tool**, not the sole decision-maker.
- Combine AI insights with **human judgment**.

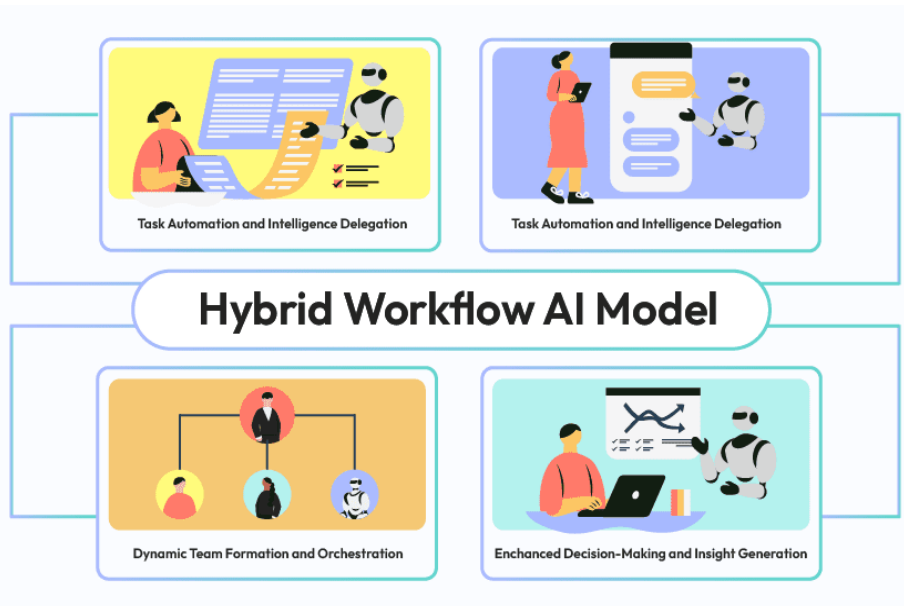


FIGURE 2.

7. LITERATURE REVIEW

Author & Year	Key Findings
Chamorro-Premuzic (2020)	AI improves efficiency but may still inherit biases
Bogen & Rieke (2018)	Need for transparency in AI hiring tools
Meijerink et al. (2021)	AI-based interviews rated as more structured by HR managers
Dastin (2018)	Amazon scrapped biased AI recruiting tool
Suen et al. (2019)	Video interview AI shows promise in assessing personality

(Full references are listed at the end.)

8. ANALYTICS WITH RESPONSES AND HYPOTHESIS TESTING

8.1 Hypothesis

- **H₀ (Null):** AI video interviews do not improve decision-making accuracy in hiring.
- **H₁ (Alternative):** AI video interviews significantly improve hiring decision-making.

8.2 Survey Results Summary:

- 80% of HRs said AI helped reduce time-to-hire.
- 60% believed behavioral insights were more accurate.
- 40% of candidates found AI video interviews stressful.

9. DISCUSSION

The data shows that **AI-enhanced video interviewing** improves hiring efficiency and provides more behavioral insights. However, a notable concern is **lack of transparency and explainability** in decisions. HR managers report improved decision-making support, but stress the need for **human oversight**. Candidates, on the other hand, express **privacy concerns** and occasional discomfort with being judged by algorithms.

10. JUSTIFICATION OF THE STUDY

This research is relevant due to:

- Growing adoption of remote hiring technologies.
- Rising awareness about **AI ethics and fairness**.
- The shift towards **data-driven HR practices**.
- Lack of studies focusing on **AI's behavioral judgment accuracy**.

11. CONCLUSION

AI-enhanced video interviewing is revolutionizing recruitment by introducing objective behavioral analysis and scalable assessments. It helps organizations make better, faster hiring decisions but comes with ethical challenges. Companies must blend AI assessments with human review and ensure algorithmic fairness. With proper implementation and regulation, AI can become a valuable ally in creating more efficient and inclusive hiring processes.

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