AI in Hiring

Final Presentation
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Problem

Emerging growth of AI products in hiring

Past research focuses on the employer and HR professional’s perspective

Lack of understanding of candidate awareness and potential behavior impacts across the entire process of finding a job.

*While seeking to understand awareness/behavior we also gathered data on candidates’ attitudes towards tools

Related Work

- Ethical and Bias Concerns
  - Yarger et al., 2019
  - Raub, 2018

- Changes in Candidate Behavior
  - Völkel, et al., 2020

- Attitudes Towards AI Hiring Tools
  - Langer, König, 2017
Research Methods

- Tool Mapping
- Survey
- Archival Analysis
- Interviews
Survey Design and Distribution

- AI awareness, certainty, and changes in behavior
- Pre-/Post-exposure attitudes
- Demographics

- Snowball Sampling
- Personal social media, Facebook Groups, Veteran Hiring forums
- Incentive using 2 x $50 gift cards
- 166 total responses, 112 complete
Archival Analysis

Scraped job related Subreddits for AI in hiring related keywords:

- Gathered 310 total submissions, filtered for on-topic and duplicates, 154 remaining were used
- On-topic submissions were discussing AI used for hiring (ex. of off topic: how to get a job working in AI)

Keywords
- Hirevue
- Pymetrics
- Chatbot
- AI

Subreddits
- Jobs
- Interviews
- AskHR
- RecruitingHell
Interviews

Semi-Structured Interviews with 10 participants (recruited from willing survey pool):

- Follow up on survey attitudes and responses
- Experience with AI in hiring
- AI hiring tool activity
- Behavior change

Ranking

How would you feel if you knew this tool was being used in the context of a job that you applied for?

Comfortable

- An HR recruiter uses a tool to screen candidates using different job requirements.
- An AI recruiter uses a tool to screen candidates using different job requirements.
- An AI recruiter uses a tool to screen candidates using different job requirements.

Uncomfortable

- An AI recruiter uses a tool to screen candidates using different job requirements.
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Analysis

- Survey
- Qualitative Data
Quantitative Analysis

- Stata
- Descriptive statistics
- Regression models
- Repeated Measures
Quantitative Analysis

Does candidate awareness of AI in the hiring process effect candidate behavior?

- Constructed ordinal variables to measure increasing change in candidate behavior, certainty, and suspicion of hiring of AI in the hiring process
- Ordinal logit model
- Controls for gender, ethnicity, age, and education

How does exposure to AI tools effect candidate attitudes regarding AI in the hiring process?

- Agree / disagree 7pt Likert scale statements
- Panel data with time1 and time2 observations for each respondent
- Comparison groups analyzed using repeated measures
Qualitative Coding

Qualitative Data (Archival Posts, Open ended survey responses, and interview transcripts) were coded individually but compared across all 3 to see common themes.

- Zoom Recording, Otter.ai transcription with manual review
- Dovetail Qualitative Analysis Tool
- Miro board affinity diagramming
- Synthesis and Theme Creation
Results

- Awareness
- Attitudes
- Questions and Concerns
- Behavior
Awareness

- Around 27% of survey respondents did not know for certain AI was used in hiring process
- 96% of survey respondents suspected that AI was being used for hiring
- Awareness of AI in hiring varies throughout the process
Awareness

Avenues to Awareness

- People
- Logical Reasoning
- First Hand Experience
- Research or Media

Awareness ≠ Understanding

- Despite knowing or thinking AI is used, candidates do not fully grasp how or what AI is being used to do
Awareness and Attitudes

Agree/Disagree Statements (fair, important, improve, inform, approach, highly)

| Method          | Coeff.  | SE     | t      | P>|z| |
|-----------------|---------|--------|--------|-----|
| Chatbot         | 0.4146  | 0.1954 | 2.12   | 0.034* |
| Video Interview | 0.1878  | 0.0850 | 2.21   | 0.027* |
| Gamified Assessment |        |        |        |       |

During which parts of the hiring process do you think that companies should utilize artificial intelligence?
Awareness and Behavior Change

- Survey responses indicated that the higher awareness someone had, the more likely they are to change behavior due to AI.
- Suspicion did not have the same effect as concrete knowledge of use of AI.

|                | Odds Ratio | SE     | z     | P>|z| |
|----------------|------------|--------|-------|-----|
| Low certainty  | 2.514      | 1.3491 | 1.72  | 0.086 |
| High certainty | 4.533      | 2.4208 | 2.83  | 0.005 |

*Respondents with high certainty 4.5 times more likely to change behavior in the hiring process than those not certain.*
Attitudes: Functionality Awareness

Negative Attitudes

Distrust 😞
“I don't know if you can gauge someone's fit based on how they perform in a game.” - Survey response, Arctic Shores

Discomfort 😞
“This is creepy.” - Survey response, Arctic Shores

“it seems kind of invasive.” - Interview Participant 6, Seekout

Impersonal 😞
“Impersonal, rude... I'm taking the time to prepare and be present for an interview, yet the company can't take the time to meet me?!” - Survey response, Hirevue
Attitudes: Functionality Awareness

Neutral Attitudes

Uncommitted 😞

“There are pros and cons” - Survey response, Hirevue

“Interesting but still unsure how it would be a determination to the next step.” - Survey response, Olivia

Accepting 😞

“Seems expected behavior for a natural language processing AI” - Survey response, Olivia

“I figure things like that has been happening for a long time” - Interview Participant 6, Humantic
Attitudes: Functionality Awareness

Positive Attitudes

Attractive

“I think that product is a step in the right direction.” - Survey response, Hirevue

“I think it’s a fun and interactive way for interviewers to determine skills they are looking for in a candidate.” - Survey response, Arctic Shores

Impressed

“Impressive technology and is helpful for large scale organizations that have to process hundreds of not thousands of applicants.” - Survey response, Hirevue

“It is amazing that technology has come so far in such a short amount of time.” - Survey response, Olivia
Attitudes: Real Life Experience

Frustration 😞
“This type of recruiting process is just silly and ridiculous. They didn't even check my CV, references or cover letter.” - Recruitinghell Subreddit, Arctic Shores

Discomfort 😞
“I just sort of freeze and become awkward staring into a screen at...myself.” - Jobs Subreddit, Hirevue

Nerves 😬
“Even though I have enough experience in my field to be more than confident, I went into it incredibly nervous.” - Jobs Subreddit, Hirevue

*The majority of reddit posts (115/154) were about Hirevue/video interviewing*
Tools and Attitudes

Survey Tools

What is your initial reaction to Olivia?
- Neither positive nor negative: 30.6%
- Negative: 12.6%
- Very negative: 27.1%
- Very positive: 9.9%
- Positive: 45.0%

What is your initial reaction to HireVue?
- Neither positive nor negative: 23.0%
- Positive: 21.4%
- Very positive: 15.2%
- Very negative: 5.4%
- Negative: 33.6%

What is your initial reaction to Arctic Shores?
- Neither positive nor negative: 33.9%
- Negative: 23.2%
- Very negative: 11.6%
- Very positive: 6.3%
- Positive: 25.0%

Interview Tools

Textio
(Job Descriptions)
- Comfortable: 30.7%
- Neutral: 42.9%
- Uncomfortable: 26.4%

Seekout
(Search)
- Comfortable: 30.7%
- Neutral: 42.9%
- Uncomfortable: 26.4%

CVViz
(Resume Screen)
- Comfortable: 30.7%
- Neutral: 42.9%
- Uncomfortable: 26.4%

Humantic
(Personalization)
- Comfortable: 30.7%
- Neutral: 42.9%
- Uncomfortable: 26.4%

ARYA
(Headhunting)
- Comfortable: 30.7%
- Neutral: 42.9%
- Uncomfortable: 26.4%

Plum
(Assessments)
- Comfortable: 30.7%
- Neutral: 42.9%
- Uncomfortable: 26.4%

Loxo
(Automated Outreach)
- Comfortable: 30.7%
- Neutral: 42.9%
- Uncomfortable: 26.4%
Questions and Concerns

Accuracy
Questions about how accurate tools are, how they work, and concerns over potentials for inaccuracy based on the data.

Relevancy
Musings about whether tools really measure things that are relevant to positions and job performance.

Expectations
Questions about everything from content to technical details. Lack of knowing what to expect in this new paradigm.

Privacy
Questions about how data is accessed and what candidates’ rights are over their likeness. Concerns over use of public data.

Power Imbalance
Concerns over how these tools put HR at a greater advantage in the hiring process, and candidates have less control.

 Discrimination
From demographic targeting to built-in advantages for certain types of systems, there are questions about the ethics of these tools.
(Potential) Behavior Change

Avoid AI

Some avoid companies they think will be using AI tools, or quit applications that require interacting with an AI tool that is a dealbreaker.

“I was so angry that my experience and education didn’t speak for itself anymore I refused to participate in the system that I hated so much.” - Jobs Subreddit, AI

Adapt to AI

Adapt Current Behaviors
Some continue their current interview/hiring process prep methods but account for AI tools.

New Behaviors
Some people plan to or do adopt completely new AI specific behaviors such as gaming strategies, taking classes/studying for AI assessments, or changing approach to public data.

No Change

Some report that there is nothing they would change about their current approach due to AI in hiring.

“It's always pretty black and white for me as a person, my answer choices...human or computer, your answer has to be the same regardless. Because you don't know what that person's preferences are. So it would have to be the truth regardless.” - Interview Participant 6
Risks and Recommendations

- Companies Using AI Tools
- AI Developers
- Candidates
## Risks and Recommendations

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<td>Candidate Disenfranchisement</td>
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<td>Negative brand impact</td>
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<td>Not getting the right candidate</td>
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<td>Effective filtering vs. adaptive behaviors</td>
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<td>Bias and discrimination</td>
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<td><strong>Candidates</strong></td>
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<td>Avoid/no change behavior narrow your options</td>
<td>Become informed about how AI is being used</td>
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<td>Non adaptive may not be effective long term</td>
<td>Change behavior based on the AI platform</td>
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<td>Power relationship increasingly disadvantages the candidate as AI use increases</td>
<td>Voice feedback through online forums</td>
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<td>Lack of understanding leading to ineffective strategies</td>
<td>Explicit feedback to companies during hiring process</td>
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Questions?