



The Impact of Technological Anxiety on Perceived Fairness in AI Interviews: The Mediating Role of Trust

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Abstract. With the widespread application of artificial intelligence (AI) technology in the recruitment sector, AI interviews have emerged as a crucial tool for organizations to screen job candidates. However, there are significant individual differences in candidates' acceptance of AI interviews; notably, a subset of candidates exhibits a distinct aversion to them. This phenomenon deviates markedly from prior theoretical predictions, thereby attracting the attention of researchers. Drawing upon the Technology Acceptance Model and Equity Theory, this study investigates the mechanisms through which technology anxiety influences the perception of fairness in AI interviews, with a particular focus on examining the mediating role of trust. Based on a questionnaire survey administered to 298 job candidates who had participated in AI interviews, the results indicate the following: technology anxiety negatively impacts the perception of fairness; technology anxiety negatively impacts trust; trust positively impacts the perception of fairness; and trust serves as a partial mediator in the relationship between technology anxiety and the perception of fairness. The findings reveal that technology anxiety not only directly diminishes the perception of fairness but also exerts an indirect negative influence by eroding candidates' trust in AI. By introducing an individual-differences perspective into the study of AI interviews, this research offers valuable insights for organizations seeking to optimize their AI-based recruitment practices and assist candidates in adapting to the AI interview process.

Keywords: Technological Anxiety, AI Interview, Mediating Effect, Trust.

1 Introduction

With the deepening advancement of Artificial Intelligence (AI) technology, its application scenarios have expanded from routine, procedural operations to complex domains involving managerial decision-making—such as financial analysis, accounting and auditing, and marketing planning [1,2]. In recent years, this trend has extended to a core function of human resource management: recruitment. According to the *2025 Report on the Maturity of Enterprise AI Recruitment Applications*—jointly released by Yonyou Dayi, HR SPACE, and the AI Branch of the China Association for Human Resource Development—the proportion of enterprises lacking any plans for AI-driven recruitment plummeted from 43.4% in 2024 to 25.2% in 2025. This shift signals that

the application of AI technology in corporate recruitment is now exhibiting a trend of "industry-wide penetration." Proponents argue that, compared to human decision-making, AI-driven HR management decisions—such as those involved in interviews—can effectively mitigate unconscious biases stemming from factors such as age, race, or physical appearance [3], thereby achieving a higher degree of procedural objectivity and fairness.

However, the essence of recruitment lies in a mutual selection process between an organization and an individual; it necessitates not only the consideration of organizational-level requirements but also close attention to the specific sentiments of job seekers. Empirical studies indicate that job seekers' acceptance of AI technologies in recruitment falls far short of expectations—a phenomenon particularly pronounced in the context of AI-based interviews [4]. This perceptual misalignment between the supply and demand sides gives rise to a core question that urgently demands an answer: Why is the level of acceptance for AI interviews so low? In response to this issue, academic research has primarily proceeded along two distinct paths: first, the design of the AI interview itself—including aspects such as interview content, the "uncanny valley" effect associated with AI interviewers, and the transparency of decision-making mechanisms; and second, the psychological states of job seekers—such as their perceptions of fairness, feelings of a lack of social presence, and levels of anxiety [5,6]. While these studies provide a crucial foundation for understanding AI interviews, they also exhibit certain limitations. First, most existing studies tend to treat job seekers as a homogeneous collective, paying insufficient attention to the role of "individual differences." In reality, even when subjected to an identical AI interview process, different job seekers may experience vastly different reactions—some may perceive the process as fair and efficient, while others may feel anxious and unsettled. The root cause of such discrepancies likely lies in the job seekers' own psychological traits. Second, within the scope of research on job seekers' psychological states, "perceived fairness" has been established as a pivotal factor influencing the acceptance of AI interviews [4]. However, existing research remains inadequate regarding the underlying mechanisms through which these perceptions of fairness are formed: Why are certain job seekers more prone to perceiving AI interviews as unfair? And which deep-seated psychological traits play a role in this process?

To address the aforementioned research gap, this study introduces "technology anxiety"—an individual psychological trait that has garnered significant attention in the field of human-computer interaction [7]—in an attempt to explain job seekers' differential responses to AI interviews from the perspective of individual differences. Technology anxiety reflects an individual's propensity toward tension, unease, and skepticism regarding technology; this psychological difference is highly likely to introduce systematic biases into their acceptance of AI interviews. How, then, does technology anxiety influence perceptions of fairness? Drawing upon trust theories within the domain of human-computer interaction [8,9], this study posits that "trust" serves as the critical bridge connecting individual traits with perceptual evaluations. Research by Deriu et al. [10] further corroborates this notion, demonstrating that individual differences (such as attachment styles) influence job seekers' acceptance of AI by first impacting their level of trust. Adopting this research logic, the present study proposes that

job seekers with higher levels of technology anxiety face greater difficulty in establishing initial trust with AI interviewers, which, in turn, leads to lower perceptions of fairness regarding the AI's decision-making processes. Consequently, this paper will delve into the negative impact of technology anxiety on perceptions of fairness in AI interviews, while also examining the mediating role that trust plays in this relationship.

The anticipated contributions of this study span two levels: theoretical and practical. First, it expands the perspective of individual differences within the field of AI interview research. While previous studies have largely focused on external factors—such as AI system design—this paper introduces the variable of "technological anxiety" to reveal the formative role that job seekers' internal psychological traits play in shaping their perceptions of fairness, thereby deepening our understanding of the heterogeneity inherent in human-AI interaction experiences. Second, the study constructs and empirically tests the underlying mechanism linking "technological anxiety → trust → fairness perception." Although trust is widely regarded as a central nexus in human-machine interaction [8,9], few studies have utilized it as a mediating variable to explain the relationship between individual traits and fairness perceptions. By extending the theoretical boundaries of trust theory into the context of AI-based recruitment, this study offers a novel theoretical explanation that helps to demystify the "black box" surrounding the formation of fairness perceptions in AI interviews.

The findings of this study offer precise guidance for organizations seeking to optimize their AI-driven recruitment practices. First, the research assists companies in identifying the sensitive demographic of "high-tech anxiety sufferers," enabling them to engage in targeted communication and counseling, or to offer alternative interview arrangements. Second, it suggests that companies can effectively bolster trust in AI—thereby mitigating talent attrition driven by technological aversion—by enhancing algorithmic transparency (e.g., by explaining scoring logic) and by establishing human review and appeal mechanisms. Concurrently, this study provides job seekers with a framework for self-reflection, guiding them to alleviate technology-related anxiety—for instance, through mock exercises and by gaining an understanding of AI principles—and to better adapt to the era of digital recruitment.

2 Research Hypotheses

Currently, research concerning AI-based interviews suffers from two critical gaps that urgently require further exploration. First, the perspective regarding individual differences remains underdeveloped. Although existing studies have begun to address individual differences, the specific traits examined remain relatively limited. As a significant psychological trait influencing an individual's acceptance of technology and its associated applications, technological anxiety has been empirically proven to exert a substantial negative impact in fields such as consumer behavior and organizational management; however, its specific role within the context of AI-based interviews has yet to be systematically investigated or validated. Given that AI-based interviewing is a highly technologically intensive method of talent selection, it is inherently linked to an individual's level of technological anxiety. Yet, existing research has failed to

incorporate technological anxiety into its theoretical frameworks; this constitutes the primary theoretical gap addressed by the present study. Second, the mediating mechanism of trust remains unverified. Additionally, research by Sapru et al [11]. further indicates that anxious affect directly influences an individual's attitude toward AI. Synthesizing these findings, the present study hypothesizes that technological anxiety—acting as a stable psychological trait—influences job seekers' judgments regarding the fairness of AI-based interviews by modulating their level of trust in AI. As this specific mechanism has not yet undergone empirical validation, it constitutes the second research gap addressed by the present study.

Based on the preceding analysis, this study introduces the construct of technology anxiety into the context of AI-based interviews. It constructs a theoretical model in which technology anxiety serves as the independent variable, perceived fairness as the dependent variable, and trust as the mediating variable.

To fill the theoretical gap mentioned above, this paper analyzes the issue based on the sense of control. Technological anxiety reflects job seekers' concerns about losing control during human-computer interaction [7]. In AI interview scenarios, the lack of real-time interpersonal interaction and immediate feedback [5] will further exacerbate this sense of loss of control, triggering psychological defense mechanisms and making job seekers tend to interpret AI decisions as opaque and inhumane [6], thereby reducing their perception of procedural fairness and interactive fairness. Based on the above theoretical logic, this paper proposes the following hypothesis:

H1: The level of technology anxiety has a negative impact on job seekers' perception of fairness.

Secondly, according to the emotion-information theory, negative emotional states are signals that the environment is unreliable or threatening [11]. In the context of AI interviews, technology anxiety, as a negative emotion, conveys to job seekers the signal that "AI systems are untrustworthy"—both in terms of ability and goodwill [3]. Based on this, this paper proposes the following hypothesis:

H2: The level of technology anxiety has a negative impact on job seekers' trust in systems.

Furthermore, algorithmic decision-making has typical "black box" characteristics, and trust serves as an important heuristic for individuals to judge fairness [9,10]. According to the halo effect, when job seekers have high trust in AI systems, they are more likely to make benign attributions to the system's ambiguous behavior (such as opaque scoring criteria) [1], thus showing a higher perception of fairness. Therefore, this paper proposes the following hypothesis:

H3: Trust positively influences job seekers' perception of fairness.

Based on the above theoretical deductions, technological anxiety can directly affect perceived fairness, and may also have indirect effects through the mediating variable of "trust." To verify this mediating pathway, this paper proposes the following hypothesis:

H4: Trust mediates the relationship between levels of technology anxiety and perceived fairness.

The theoretical model of this study is shown in Figure 1.

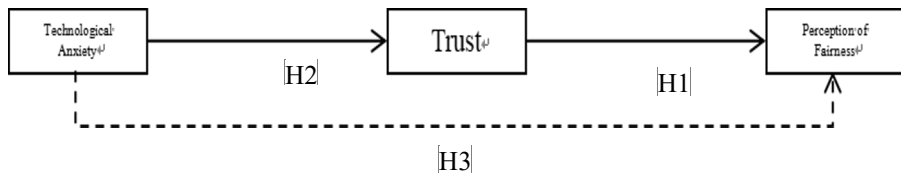


Fig. 1. Theoretical Model.

3 Empirical Analysis

3.1 Samples and Data

This study aims to investigate the impact of technology anxiety on the perception of fairness in AI-based interviews, as well as the mediating role of trust. To test the research hypotheses, individuals who have participated in AI-based interviews were selected as the study subjects, and data collection was conducted via the Credamo platform. The specific sample sources and data collection procedures are detailed below.

To ensure the validity of the collected data, the study undertook the following preparatory measures prior to formal collection: First, the questionnaire design incorporated attention check questions and reverse-scored items to facilitate subsequent data screening. Second, with the assistance of the platform, the questionnaire was targeted specifically at individuals who had prior experience with AI-based job interviews. Finally, before commencing large-scale data collection, a small-scale pilot test was conducted to identify and revise any questions that were ambiguously worded or difficult to comprehend, thereby ensuring that respondents could accurately interpret the items. After collecting a total of 352 questionnaires through the platform, the data underwent a rigorous screening process; any questionnaires in which the respondent selected the same option for every item, completed the survey in under 60 seconds, failed to correctly answer the attention check questions, or provided clearly contradictory responses to positive and reverse-scored items were excluded. Ultimately, 298 valid questionnaires were retained, yielding an effective response rate of 84.7%.

A demographic analysis was conducted on 298 valid samples, with the results presented in Table 1. Regarding gender distribution, there were 138 male respondents (46.3%) and 160 female respondents (53.7%). In terms of age distribution, 184 respondents were aged 18–22 (61.7%), 86 were aged 23–30 (28.9%), 20 were aged 30–40 (6.7%), and 8 were aged 40 or above (2.7%). Regarding academic background, 132 respondents majored in Science and Engineering (44.3%), 127 in Humanities and Social Sciences (42.6%), and 39 in other fields (13.1%). Finally, regarding the frequency of participation in AI interviews, 144 respondents had participated once (48.3%), 122 had participated 2–3 times (40.9%), and 32 had participated four or more times (10.8%).

Table 1. Sample Feature Distribution (N=298).

Variable	Category	Frequency	Percentage (%)
Gender	Male	138	46.3
	Female	160	53.7
Age	18–22 years old	184	61.7
	23–30 years old	86	28.9
	31–40 years old	20	6.7
	Over 40 years old	8	2.7
	Other	39	13.1
Academic Background	STEM	132	44.3
	Humanities & Social Sciences	127	42.6
	Other	39	13.1
Number of AI Interviews	1	144	48.3
	2–3	122	40.9
	4 or more	32	10.7

3.2 Research Methods

This study employed a questionnaire survey method to collect data. The formal survey instrument was divided into three sections: The first section consisted of screening questions and basic demographic information, including whether the respondent had previously participated in an AI interview, as well as their gender, age, academic major, and the number of times they had undergone an AI interview. The second section comprised scale-based items designed to measure applicants' levels of technology anxiety, their degree of trust in AI technology, and their perceptions of the fairness of AI interviews. The third section featured attention check items intended to verify the diligence with which respondents completed the questionnaire. All scales were adapted from established domestic and international instruments and were appropriately modified to fit the specific context of AI interviews. A 5-point Likert scale was utilized for all items (where 1 = Strongly Disagree and 5 = Strongly Agree). The questionnaire included several reverse-scored items, which were uniformly reverse-coded prior to data analysis. The specific measurement methods for each variable are detailed below:

Technology Anxiety: Adapted from the study by Meuter et al. [7], this construct comprises five items designed to measure an individual's propensity for experiencing uneasiness, tension, and skepticism when utilizing artificial intelligence (AI) technologies. The specific items such as: "I feel uneasy about using AI technologies" and "I worry that I will be unable to adapt to the increasing number of AI applications" were used. Reliability analysis results indicate that the scale yields a Cronbach's α coefficient of 0.858.

Trust: Adapted from the study by McKnight et al. [12], this construct comprises four items designed to measure individuals' level of trust in artificial intelligence technology. The specific items such as: "I believe that AI's judgments are reliable" and "I consider AI's decisions to be trustworthy" were used. Reliability analysis results indicate that the scale's Cronbach's α coefficient is 0.866.

Perceived Fairness: Adapted from the research of Colquitt [13], this construct comprises four items designed to measure job applicants' subjective perceptions regarding the fairness of AI-based interviews. The specific items such as: "During the AI interview, I felt I was able to fully demonstrate my capabilities" and "During the AI interview, I felt the evaluation criteria were clear and transparent" were used. Reliability analysis results indicate that the scale possesses a Cronbach's α coefficient of 0.863. Following contextual adaptation, the scale demonstrates robust content and construct validity.

3.3 Descriptive Statistical Analysis

This study employed SPSS 27.0 and the PROCESS macro to conduct data analysis. First, descriptive statistics were performed on the sample to characterize the basic demographic features of the participants. Second, the reliability of the scales was assessed using Cronbach's α coefficient to examine their internal consistency. Subsequently, Pearson correlation analysis was conducted to investigate the interrelationships among the various variables. Finally, the PROCESS macro (Model 4) was utilized to test for mediation effects; specifically, the bias-corrected bootstrap method (with 5,000 resamples) was employed to estimate the confidence intervals for the indirect effects, wherein a confidence interval that did not include zero was interpreted as indicating a statistically significant mediation effect.

The means, standard deviations, and correlations are presented in Table 2. Technology anxiety was negatively correlated with trust and perceived fairness ($p < 0.01$), while trust was positively correlated with perceived fairness ($p < 0.01$). The correlational relationships among the variables align with theoretical expectations, thereby laying the foundation for subsequent mediation effect testing.

Table 2. Descriptive Statistics and Correlation Analysis.

Variables	M	SD	1	2	3
Technological Anxiety	3.049	0.951	1		
Trust	2.951	0.994	-0.446***	1	
Perceived Fairness	2.992	1.059	-0.461***	0.434***	1

a N = 298; ***indicates $p < 0.01$

3.4 Hypothesis Testing

To examine the mediating effect of trust, Model 4 of the PROCESS macro was employed to conduct a bootstrap mediation analysis with 5,000 resamples. Table 3 presents the bootstrap mediation analysis results. The indirect effect of technological anxiety on perceived fairness through trust was significant ($\beta = -0.142$, 95% CI [-0.212, -0.083]), indicating that trust partially mediates this relationship, accounting for 27.5% of the total effect. Additionally, the hypotheses H2 and H3 were supported by the aforementioned correlation analysis: technology anxiety is significantly negatively correlated with trust ($r = -0.446$, $p < 0.01$), while trust is significantly positively correlated

with perceived fairness ($r = 0.434, p < 0.01$). The correlation and path coefficients are shown in Figure 2.

Table 3. Results of the Mediation Effect Test.

Effect Type	Effect Value	BootSE	BootLLCI	BootULCI
Total Effect	-0.516	0.065	-0.629	-0.403
Direct Effect	-0.374	0.062	-0.497	-0.252
Indirect Effect	-0.142	0.033	-0.212	-0.083

a N = 298; ***indicates $p < 0.01$.

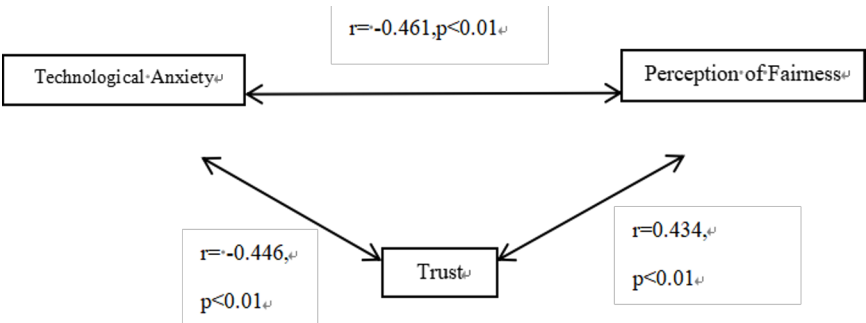


Fig. 2. Path Coefficients of the Theoretical Model.

4 Conclusion

Based on the results of the data analysis, all four hypotheses of this study received empirical support. Specifically, individuals with higher levels of technology anxiety perceived lower levels of fairness in AI interviews (Hypothesis H1 supported); individuals with higher levels of technology anxiety exhibited lower levels of trust in AI (Hypothesis H2 supported); individuals with higher levels of trust in AI perceived higher levels of fairness in AI interviews (Hypothesis H3 supported); and trust served as a partial mediator between technology anxiety and perceived fairness (Hypothesis H4 supported), with the indirect effect accounting for 27.5% of the total effect.

In other words, the reason individuals with high levels of technology anxiety perceive AI interviews as unfair stems, in part, from their lack of trust in AI systems. This finding offers a comprehensive explanatory framework for understanding why certain individuals are more prone to perceiving AI interviews as unfair: anxious individuals form negative evaluations not merely due to their resistance toward the technology itself, but—more significantly—because their lack of trust in the technological system intensifies their sense of unfairness. This mechanism also responds to calls for future research to examine individual differences [4], thereby integrating technology anxiety—a critical individual psychological trait—into the research framework surrounding AI interviews.

While this study yielded some meaningful conclusions, it also has several limitations. First, the sample primarily consisted of university students, which may affect the generalizability of the conclusions to other groups. Second, the use of cross-sectional data may introduce common methodological bias. Future research could expand to include more diverse samples and employ experimental or longitudinal designs to further validate causal relationships.

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