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Acceptance of Intelligent Interviews by College Graduates Under AI Empowerment: An SEM Approach

Yujing Wan*

School of Business Administration, Guizhou University of Finance and Economics, Guiyang 550032, Guizhou, China

**Author to whom correspondence should be addressed.*

Abstract: The Master Intelligent interview is based on the Stimulus-Organism-Response (SOR) theory, this study integrates key constructs from the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB), namely attitude and behavioral intention, to develop a dual-path model of how AI empowerment influences college graduates' acceptance of intelligent interview technology. Taking AI empowerment as the independent variable, perceived risk and attitude as mediating variables, and behavioral intention as the outcome variable, the study employs questionnaire surveys and structural equation modeling (SEM) for empirical analysis. The results show that AI empowerment exerts a significant positive impact on attitude, perceived risk, and behavioral intention. Both perceived risk and attitude play significant mediating roles between AI empowerment and behavioral intention. Interestingly, perceived risk does not suppress behavioral intention; instead, it positively promotes it through a "rational trade-off" mechanism. Moreover, perceived risk and attitude form a significant chain-mediated pathway, revealing a continuous psychological transmission mechanism of "rational cognition-emotional adjustment-behavioral decision-making". This study enriches the theoretical framework of AI technology acceptance, extends the application of the SOR model to the context of intelligent recruitment, and provides valuable implications for optimizing university career guidance and enterprise recruitment systems.

Keywords: AI empowerment; Master Intelligent Interview; Technology Acceptance Model; Perceived risk; Structural Equation Modeling

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1. Introduction

The rapid integration of artificial intelligence (AI) into recruitment processes has transformed traditional hiring practices [1]. Among these innovations, AI-powered intelligent interviews are increasingly adopted by enterprises to enhance efficiency, ensure fairness, and provide data-driven candidate assessments. While these systems offer significant benefits, they also introduce potential challenges, including concerns over algorithmic transparency,

fairness, and privacy. College graduates, as primary users of these technologies during critical job-seeking periods, serve as both direct stakeholders and valuable sources of feedback, making their acceptance crucial for effective implementation. Understanding the psychological mechanisms that drive their adoption of intelligent interview systems is therefore of both theoretical and practical importance.

Based on established technology acceptance theories such as TAM and TPB, existing research has emphasized factors like perceived usefulness, ease of use, and attitude [2]. However, these models may not fully explain user behavior in high-stakes contexts such as AI-enabled intelligent interviews, where perceived risks and outcome sensitivity are heightened. To address this gap, this study introduces the SOR framework and integrates the concept of AI empowerment, referring to the enhancement of efficiency, fairness, and analytical depth in intelligent interview systems, into a dual-path theoretical model.

This study integrates AI empowerment, the extent to which intelligent interview systems enhance efficiency, fairness, and analytical depth, into a comprehensive theoretical framework that combines SOR, TAM, and TPB. Within this framework, behavioral intention is influenced via two complementary pathways: an emotional pathway mediated by attitude and a rational pathway mediated by perceived risk. Notably, perceived risk may exert a facilitative, rather than inhibitory, effect in this context, reflecting rational trade-offs in high-stakes job-seeking scenarios.

Accordingly, this research addresses two core questions:

(1) How do college graduates form intentions to use AI-powered intelligent interview systems under the influence of AI empowerment through the combined effects of perceived risk and attitude?

(2) What are the underlying mechanisms through which AI empowerment shapes behavioral intention?

To answer these questions, a dual-path model is proposed and empirically tested using SEM, providing a systematic understanding of the psychological logic governing intelligent interview adoption and offering implications for optimizing university career guidance and enterprise recruitment practices.

2. Research hypotheses and model construction

Grounded in the SOR framework, this study integrates the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB) to explore college graduates' acceptance of intelligent interview technology under AI empowerment. AI empowerment, defined as the capability of intelligent systems to enhance efficiency, fairness, and analytical precision, acts as the external stimulus influencing behavioral intention both directly and indirectly through two internal psychological mechanisms: perceived risk (rational cognition) and attitude (emotional evaluation).

Perceived risk reflects individuals' concerns regarding potential negative outcomes, such as technical errors, privacy breaches, or unfair evaluations. While conventional theories suggest that perceived risk suppresses behavioral intention, this study argues that in high-stakes recruitment contexts, risk perception may foster "cautious engagement". Graduates who recognize potential risks may adopt a proactive and well-prepared stance rather than outright rejection, leading perceived risk to exert a positive influence on both attitude and behavioral intention.

Furthermore, AI empowerment may heighten risk awareness through its complexity and algorithmic opacity, prompting rational reflection on potential consequences. Yet, under employment pressure, this rational awareness may transform into adaptive behavior, acknowledging that avoiding AI-based interviews could result in greater opportunity loss. Thus, perceived risk and attitude jointly serve as sequential mediators linking AI empowerment

to behavioral intention.

Based on these theoretical arguments, this study proposes the following hypotheses:

(1) H1: AI empowerment has a significant positive effect on college graduates' attitudes toward intelligent interviews;

(2) H2: Attitude has a significant positive effect on college graduates' behavioral intention to use intelligent interview technology;

(3) H3: AI empowerment has a significant positive effect on college graduates' perceived risk toward intelligent interviews;

(4) H4: Perceived risk has a significant positive effect on college graduates' behavioral intention to use intelligent interview technology;

(5) H5: Perceived risk has a significant positive effect on college graduates' attitudes toward intelligent interviews;

(6) H6: AI empowerment has a significant positive effect on behavioral intention;

(7) H7: AI empowerment has a significant positive indirect effect on behavioral intention through attitude (i.e., attitude plays a mediating role);

(8) H8: AI empowerment has a significant positive indirect effect on behavioral intention through perceived risk (i.e., perceived risk plays a mediating role);

(9) H9: AI empowerment has a significant positive indirect effect on behavioral intention through the sequential mediation of perceived risk and attitude (i.e., perceived risk and attitude play a chain-mediating role).

Overall, the proposed model delineates the pathway from technological empowerment through cognitive and affective evaluations to behavioral intention, providing an integrated framework for understanding intelligent technology acceptance among college graduates (**Figure 1**).

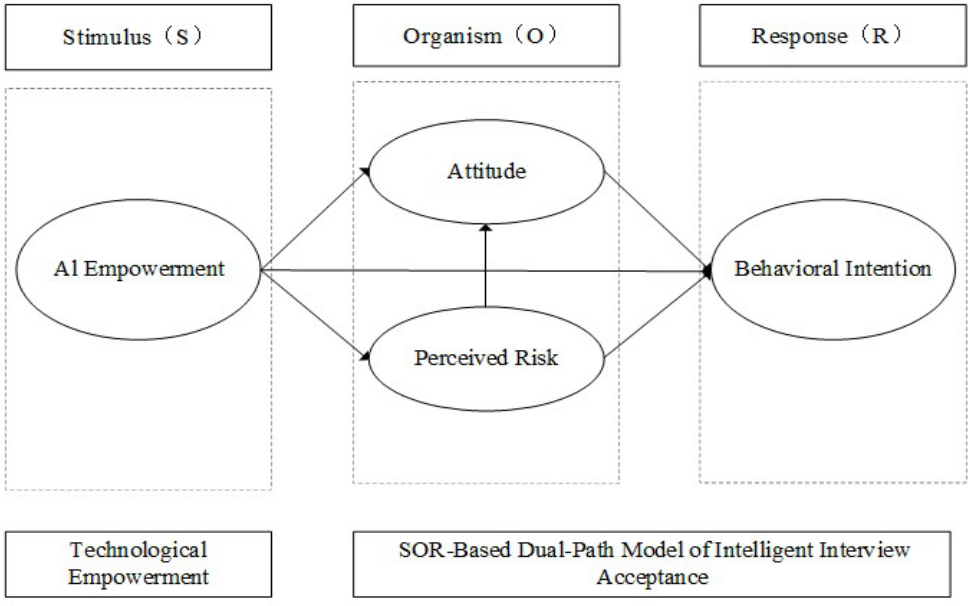

Figure 1. Theoretical framework diagram of college graduates' acceptance of intelligent interviews.

3. Data collection and analysis

3.1. Research subject

This study focuses on Chinese college graduates at the associate, bachelor's, and master's or higher levels. This population is selected for three main reasons:

(1) Graduates are at a pivotal stage of entering the job market and serve as the primary direct users of intelligent interview technologies; their acceptance critically influences the technology's recruitment effectiveness and provides essential feedback for system optimization;

(2) While this group is relatively homogeneous in age and employment motivation, ensuring contextual consistency, it also exhibits heterogeneity in educational background, discipline, and institution type, allowing examination of differential effects across subgroups and enhancing analytical depth;

(3) As the core of the future labor force, graduates' attitudes toward emerging technologies indicate the prospective adoption of intelligent interviews and broader AI applications in future work environments. Thus, focusing on this population offers both theoretical and practical significance.

3.2. Questionnaire design

The study employed a questionnaire survey to collect empirical data. The questionnaire consisted of two sections.

The first section collected respondents' demographic information, including gender, age, education level, and employment status.

The second part focuses on the measurement of core variables. The scale items were revised with reference to mature domestic and international literature and include measurement items for core constructs such as AI empowerment, perceived risk, attitude, and behavioral intention [3-5].

All items use a five-point Likert scale (1 = 'Strongly Disagree' to 5 = 'Strongly Agree'), and the scale items were revised with reference to mature domestic and international literature.

An online survey was conducted via Questionnaire Star and snowball sampling through graduate social media groups (e.g., WeChat, QQ), targeting college graduates nationwide. A total of 1,351 questionnaires were returned. After removing 13 incomplete or invalid responses, 1,338 valid responses remained, yielding an effective response rate of 99.0%.

Among the respondents, 51.3% were male and 48.7% were female, indicating a balanced gender distribution. Approximately 63.64% reported prior experience with intelligent interviews, indicating high technology penetration. The majority of respondents were aged 18–25 (50%) and 26–35 (27.92%), reflecting a young and middle-aged job-seeking population. Regarding educational background, 77.28% held a bachelor's degree or higher (60.34% bachelor's; 14.94% master's or above), indicating a generally high educational level, which may enhance their acceptance and use of intelligent interview technology.

3.3. Reliability and validity analysis

This study employed SPSS 26.0 and AMOS 26.0 to assess the reliability and validity of the questionnaire data. The results indicated that the overall Cronbach's α for the questionnaire was 0.926, demonstrating excellent internal consistency reliability.

As shown in **Table 1**, the Cronbach's α values for all constructs exceeded 0.7, the composite reliability (CR) values were all above 0.7, and the average variance extracted (AVE) values were all greater than 0.4, collectively confirming good convergent validity for all constructs.

Furthermore, the structural validity of the scale was assessed. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.957, and Bartlett's test of sphericity was significant ($P < 0.001$), indicating that the data were highly suitable for factor analysis and that the scale possessed satisfactory structural validity.

In summary, the scales used in this study demonstrated excellent reliability and validity, confirming the high quality of the data and supporting their suitability for subsequent hypothesis testing and empirical analysis.

Table 1. Short Reliability and validity analysis

Variable Name	CR	AVE	Cronbach's α	KMO
AI empowerment	0.753	0.504	0.751	0.688
Perceived risk	0.733	0.479	0.733	0.684
Attitude	0.763	0.519	0.760	0.694
Behavioral intention	0.728	0.471	0.728	0.684
The overall reliability of the questionnaire Cronbach's α = 0.926			KMO = 0.957	
Bartlett's test of sphericity: Approximate Chi-square = 941.262			$P = 0.000$	

3.4. Assessment of model fit

The structural model was evaluated using AMOS 26.0 to assess its goodness of fit.

The results indicate that all fit indices met or exceeded the recommended thresholds: the chi-square to degrees of freedom ratio (CMIN/DF) was 0.755, the root mean square error of approximation (RMSEA) was 0.000, and the goodness-of-fit index (GFI), Tucker-Lewis index (TLI), and comparative fit index (CFI) were all 1.000. Additionally, the normed fit index (NFI) and parsimonious normed fit index (PNFI) were 0.963 and 0.700, respectively.

These values collectively demonstrate an excellent overall model fit, suggesting a high level of consistency between the theoretical model and the empirical data, thereby providing strong support for subsequent path analysis and hypothesis testing.

3.5. Structural equation modeling hypothesis testing

3.5.1. Main effect testing

Using AMOS 26.0, the significance of all path coefficients between latent variables and the factor loadings of observed variables on their respective latent constructs were examined. The results indicate that the first six hypotheses proposed in this study are all supported (**Table 2**).

Specifically, AI empowerment has a significant positive effect on graduates' attitude toward intelligent interviews, perceived risk, and behavioral intention ($P < 0.001$, $\beta = 0.7461$; $P < 0.001$, $\beta = 0.768$; $P < 0.001$, $\beta = 0.338$), supporting H1, H3, and H6.

Perceived risk has a significant positive effect on both graduates' attitude toward intelligent interviews and behavioral intention ($P < 0.001$, $\beta = 0.408$; $P < 0.001$, $\beta = 0.247$), supporting H4 and H5. Additionally, attitude has a significant positive effect on behavioral intention ($P < 0.001$, $\beta = 0.345$), supporting H2.

These results confirm the hypothesized main effects and indicate that AI empowerment, perceived risk, and attitude play significant roles in shaping graduates' behavioral intention to use intelligent interview technology.

Table 2. Structural model test results

Hypothesis	Path relationship	Path coefficient	Standard error (SE)	T-value (CR)
H1	AI Empowerment →Attitude	0.461	0.072	6.397
H2	Attitude → Behavioral Intention	0.345	0.069	4.831
H3	AI Empowerment→ Perceive Risks	0.768	0.051	14.957
H4	Perceived Risk→ Behavioral Intention	0.247	0.069	3.487
H5	Perceived Risk → Attitude	0.408	0.073	5.655
H6	AI Empowerment → Behavioral Intention	0.338	0.070	4.668

3.5.2. Mediation effect test

The bootstrap resampling method (with 5,000 repeated samples) was employed to estimate the path coefficients and indirect effects of the mediation model. The results are presented in **Table 3,** which reports the point estimates of each effect as well as their 95% bootstrap confidence intervals.

Table 3. Results of mediation effect testing

Effect type	Path relationship	β	LLCI	ULCI	P
Total effect	AI Empowerment → Behavioral Intention	0.768	0.675	0.861	0.000
Direct effect	AI Empowerment → Behavioral Intention	0.433	0.302	0.564	0.000
Indirect effect	AI Empowerment → Attitude → Behavioral Intention	0.335	0.253	0.440	0.000
Total effect	AI Empowerment → Behavioral Intention	0.678	0.675	0.861	0.000
Direct effect	AI Empowerment → Behavioral Intention	0.481	0.347	0.614	0.000
Indirect effect	AI Empowerment →Perceived Risk → Behavioral Intention	0.287	0.198	0.407	0.000
Total effect	AI Empowerment → Behavioral Intention	0.768	0.675	0.861	0.000
Direct effect	AI Empowerment → Behavioral Intention	0.327	0.187	0.467	0.000
Direct effect	AI Empowerment →Perceived Risk	0.758	0.657	0.859	0.000
Direct effect	AI Empowerment → Attitude	0.463	0.318	0.607	0.000
Total indirect effect	AI Empowerment →Perceived Risk → Behavioral Intention	0.183	0.086	0.300	0.000
Total indirect effect	AI Empowerment →Attitude → Behavioral Intention	0.154	0.086	0.244	0.000
Total indirect effect	AI Empowerment →Perceived Risk →Attitude → Behavioral Intention	0.104	0.056	0.170	0.000

The total effect of AI empowerment on behavioral intention was 0.768 (95% CI [0.675, 0.861]), indicating a strong and significant positive influence in the absence of mediators. After introducing perceived risk and attitude as mediators, the direct effect remained significant (β = 0.327, 95% CI [0.187, 0.467]), suggesting partial mediation and confirming that AI empowerment affects behavioral intention both directly and indirectly through psychological mechanisms.

Specifically, the indirect effect via attitude was 0.154 (95% CI [0.086, 0.244]), supporting H7 and highlighting attitude as a critical emotional pathway linking AI empowerment to behavioral intention. The indirect effect via perceived risk was 0.183 (95% CI [0.086, 0.300]), statistically significant but opposite to the negative direction predicted by H8, indicating that perceived risk acts as a facilitative rather than suppressive mediator.

Additionally, the sequential chain mediation via perceived risk and then attitude was 0.104 (95% CI [0.056, 0.170]), supporting H9 and validating a sequential psychological transmission mechanism: rational risk evaluation → emotional adaptation → behavioral decision-making.

Overall, the total indirect effect (0.441) accounted for 57.4% of the total effect, with the chain mediation path explaining 13.5%, confirming that graduates' decision-making in AI-powered interviews involves a complex, sequential psychological adaptation rather than a simple stimulus-response process.

4. Conclusion

Originated from the SOR framework, this study develops a dual-path model to examine how AI empowerment influences college graduates' acceptance of intelligent interview technology. The empirical findings demonstrate that AI empowerment has a significant positive impact not only on behavioral intention but also on attitude and perceived risk, highlighting the comprehensive psychological and behavioral influence of AI-driven recruitment technologies. Both attitude and perceived risk play significant mediating roles between AI empowerment and behavioral intention, with indirect effects accounting for 57.4% of the total effect. This underscores that psychological mechanisms constitute the primary pathway through which AI empowerment shapes technology acceptance.

Interestingly, perceived risk exerts a positive mediating effect, contrary to traditional risk-aversion assumptions. This finding reflects a rational trade-off mechanism in high-stakes employment contexts, where job seekers perceive that the certain loss of rejecting AI interviews outweighs the potential risks associated with their use. Thus, heightened awareness of technological risks paradoxically enhances willingness to adopt AI interviews, revealing the complex nature of risk-based decision-making in technology acceptance.

This study contributes to theory by extending the SOR model to explain AI adoption in high-stakes decision contexts and by uncovering a reversed risk-intention dynamic. Future research may expand the sample beyond college graduates, incorporate contextual and cultural variables, and explore the evolving impact of AI advancements on users' acceptance models over time.

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