Journal of Intelligent Machines and Engineering
https://cortexpub.com/index.php/jime/article/view/article2528

Research Article

AI Awareness and Employment Risk among College Students

Miguel Reyes, Juan Santos*
School of Electrical, Electronics, and Computer Engineering, Mapua University, Manila, Philippines.
*Corresponding author: juansantos@ mapua.edu.ph

Abstract

In the context of rapid technological advancement, college students are increasingly concerned about the potential impact of artificial intelligence (AI) on their future employment. This study examines the relationship between awareness of AI's impact and college students' perceptions of employment risk. Based on empirical data collected from 1,558 college students, a moderated mediation model was developed to investigate the underlying mechanisms of this relationship. The findings indicate that greater awareness of AI's impact is positively associated with students' perceptions of employment risk. Employment anxiety mediates the relationship between AI impact awareness and perceived employment risk, suggesting that increased awareness of AI may increase employment anxiety, which subsequently strengthens students' perceptions of employment risk. Furthermore, learning goal orientation negatively moderates the relationship between employment anxiety and perceived employment risk. In particular, a stronger learning goal orientation weakens the mediating effect of employment anxiety on the relationship between AI impact awareness and perceived employment risk. These findings provide useful insights for educational institutions, policymakers, and other stakeholders in developing appropriate interventions to address students' employment concerns related to AI and to support effective AI-related educational and workforce policies.
.

Keywords

Artificial Intelligence; AI Awareness; Employment Risk Perception; Employment Anxiety; Learning Goal Orientation; College Students; Career Uncertainty; Moderated Mediation.

Manuscript Received:
July 15, 2026
Revised:
August 2, 2026,
Accepted:
August 14, 2026

1. Introduction

In recent years, artificial intelligence (AI) has made significant advances in areas such as algorithm development, big data processing, and computing power. With the continuous development of deep learning, AI has achieved or even exceeded human-level performance in several tasks, including image recognition, speech processing, and natural language understanding. Although AI has improved productivity and efficiency in many organizations, its increasing automation and intelligent capabilities have also raised concerns about job displacement. Previous studies suggest that AI may replace many traditional and repetitive jobs because of its ability to perform automated and intelligent tasks [1]. As a result, AI is changing the labor market, and many traditional occupations may face a greater risk of automation. This situation has become an important social concern.

For college students, perceived employment risk is an important psychological factor that can influence their employment decisions, career planning, and related behaviors [2]. The rapid development of AI may therefore affect their future employment opportunities. It can change traditional career paths, create

uncertainty about career goals, and increase concerns about future employment [3]. Employment risk perception refers to an individual's understanding and psychological response to uncertainty and instability in the workplace [1]. A high level of perceived employment risk may lead individuals to adopt more conservative employment choices and experience greater anxiety during the job-search process, which can negatively affect their career planning and development [4]. In contrast, individuals with lower employment risk perception may be more willing to explore new industries, accept challenging positions, and demonstrate greater initiative in their careers.

College students who are aware of the potential impact of AI on their future careers may therefore perceive a greater risk of losing valuable employment resources. Concerns about resource loss can increase employment-related anxiety [5, 6]. Employment anxiety refers to an individual's psychological response to unfavorable or uncertain situations during the job-search and employment process. Previous research has shown that employment anxiety can influence college students' career choices and employment behaviors, which may further increase their perception of employment risk. Therefore, employment anxiety may act as an important mediating factor in the relationship between AI-related concerns and college students' employment risk perception.

According to Conservation of Resources Theory, personal characteristics such as optimism and resilience are important resources that help individuals acquire and protect other resources. Individuals with greater personal resources are generally better able to cope with stress and challenging situations [7, 18]. Goal orientation describes an individual's way of thinking and behavioral tendencies when facing challenges, difficulties, or failures, and it is considered a relatively stable psychological characteristic [8]. From the perspective of Conservation of Resources Theory, goal orientation can be regarded as an important personal resource that influences how individuals interpret situations, respond emotionally, and choose their actions [9]. Individuals with a strong learning goal orientation are more likely to view failures and challenges as opportunities for learning and personal growth. As a result, they may develop greater confidence and more positive emotional responses when facing difficulties [5]. In contrast, individuals with a weak learning goal orientation may have fewer psychological resources and may therefore be more concerned about losing existing resources. Consequently, when experiencing employment anxiety, they may adopt a less proactive approach to employment, which can further increase their perception of employment risk. Thus, learning goal orientation may moderate the relationship between employment anxiety and employment risk perception.

Based on this reasoning, this study proposes that learning goal orientation may also influence the indirect effect of AI-related concerns on college students' employment risk perception through employment anxiety. By considering learning goal orientation as a boundary condition, the study aims to clarify the mechanism through which AI affects students' perceptions of employment risk and identify the conditions under which this relationship becomes stronger or weaker.

This study has several theoretical implications. First, existing research on AI and higher education has mainly examined its effects on students' learning motivation [10, 11], learning methods [12], and career planning [13]. Although some studies have begun to examine the psychological effects of AI on college student[13], the mechanisms through which AI influences employment risk perception have received limited systematic attention. Drawing on Conservation of Resources Theory [7], this study argues that perceived AI-related threat may act as a signal of potential resource loss, directly increasing college students' employment risk perception and indirectly affecting it by increasing employment anxiety. This framework contributes to understanding the psychological adaptation of young people in the AI era and provides a new perspective on college students' employment psychology during technological change.

Second, previous studies on employment risk perception have mainly focused on external factors such as job characteristics [14] and social support [15], while relatively less attention has been given to the cognitive effects of emerging technologies. By incorporating perceived AI-related threat into the analytical framework, this study examines its positive relationship with employment risk perception and confirms the mediating role of employment anxiety. These findings extend the application of social-cognitive perspectives to the context of intelligent technologies and provide empirical evidence for understanding how individuals perceive and respond to technology-driven employment uncertainty.

Third, existing intervention research has largely emphasized external resources, including psychological counseling, policy support, and social capital. Comparatively, less attention has been given to individual internal resources. This study introduces learning goal orientation as a moderating variable and suggests that college students with a stronger learning goal orientation may experience lower employment risk perception when facing employment anxiety. This finding indicates that a positive learning-oriented mindset can help reduce the negative influence of employment anxiety on career-related judgments and provides a useful perspective for developing interventions that strengthen students' psychological resources and adaptability in the face of AI-driven changes in the labor market.

2. Conceptual Framework and Hypothesis Development

2.1. AI Awareness and Employment Risk Perception

The possibility that AI technologies may replace or reduce employment opportunities in certain occupations has become an important concern [1]. This concern is also relevant to college students who are preparing to enter the labor market. When students become aware that their future occupations may be affected or replaced by AI, they may develop a sense of technology-related threat. Such awareness can increase uncertainty about their career prospects and create concerns about potential job displacement, which may further increase their anxiety. Employment risk perception refers to an individual's understanding and evaluation of the uncertainties that may arise during the job-search process and career development. It can influence career choices, workplace behavior, and future career planning [16].

In the current digital era, the rapid development and widespread application of AI technologies may increase college students' concerns about their future employment and make them more sensitive to potential employment risks. **Conservation of Resources (COR) Theory** provides a useful framework for explaining this relationship [7]. According to COR theory, individuals seek to acquire, maintain, and protect resources that they value. These resources include material resources, conditional resources, personal characteristics, and energy resources such as time and effort. When individuals believe that their existing resources may be lost, are under threat, or may not generate expected returns after investment, they experience psychological stress.

From a career perspective, AI-driven technological changes can be viewed as an external stressor that may threaten important individual resources, including professional skills, job stability, and future career opportunities. Although college students have not yet fully entered the labor market, they have already invested considerable time and effort in developing human capital through education, professional training, and internship experiences. These investments can be viewed as expected future resources. When students

perceive that AI may reduce the value of their skills or limit available employment opportunities, they may develop a sense of potential resource loss, leading to stronger perceptions of employment risk.

COR theory also suggests that individuals may adopt protective strategies when their resources are threatened, such as increasing their learning efforts, acquiring new skills, or even changing their academic specialization. However, these strategies require additional investments of time, energy, and other resources, which may further increase psychological pressure [17]. Therefore, awareness of AI-related technological threats may increase college students' employment risk perception by activating concerns about potential resource loss. This perspective helps explain how the development of AI influences students' career expectations and psychological responses through a resource-loss mechanism. Based on the above theoretical analysis, this study proposes the following hypothesis:

Hypothesis 1: Awareness of the impact of artificial intelligence positively influences college students' perception of employment risk.

2.1.1. The Mediating Role of Employment Anxiety

Employment anxiety is a psychological response that arises in situations involving uncertainty and pressure, particularly during the job-search process. It is generally characterized by persistent feelings of worry, tension, and stress related to employment. These psychological responses may also affect individuals' physical condition and behavioral patterns.

The rapid development of artificial intelligence (AI) has changed the structure of the labor market and increased public concerns about potential unemployment. At the same time, the growing use of AI has created greater uncertainty about future employment opportunities for college students. Therefore, it is reasonable to assume that students' awareness of the impact of AI may influence their level of employment anxiety. As AI continues to develop and become more widely used in the workplace, college students may become increasingly concerned about technological changes and their possible effects on future careers. They may worry not only about losing existing career resources but also about reduced employment opportunities and difficulties in achieving their career goals. Such concerns can increase uncertainty and contribute to employment anxiety.

The Conservation of Resources (COR) Theory provides a theoretical explanation for this relationship. According to COR theory, individuals seek to acquire, maintain, and protect valuable resources, including time, skills, abilities, and employment opportunities. When individuals perceive that these resources are threatened or may be lost, they experience psychological stress [7]. For college students, the realization that AI may replace certain occupations or reduce the value of their professional skills can create a perception of potential resource loss. This perception may activate a defensive psychological response, resulting in greater concern and anxiety about future employment.

This process is consistent with the core principle of COR theory that resource loss has a stronger psychological impact than resource gain [7]. Thus, as AI becomes increasingly integrated into the workplace, students' perceptions of potential threats to their career-related resources may become an important factor contributing to employment anxiety. Previous research has also found that the development of AI can reduce individuals' sense of job security, further suggesting that greater awareness of AI's impact may increase

employment anxiety among college students. Based on the above discussion, this study proposes the following hypothesis:

Hypothesis 2: Awareness of the impact of artificial intelligence is positively associated with employment anxiety.

College students often experience employment anxiety because of uncertainty in the future labor market. Such anxiety can affect their emotional well-being and increase their concerns about potential employment-related threats, including job loss, a mismatch between their skills and job requirements, and the need to acquire additional skills and resources. Employment anxiety is commonly associated with negative emotions such as excessive worry, nervousness, and uncertainty. Previous research suggests that uncertainty about employment can reduce students' confidence and motivation. When students perceive current employment opportunities as unstable or their future career prospects as uncertain, they may experience self-doubt, anxiety, and a sense of loss. Therefore, employment anxiety may contribute significantly to individuals' perceptions of employment risk.

In examining the relationship between AI impact awareness and college students' employment risk perception, this study considers employment anxiety as an important mediating factor. The rapid development of AI has raised concerns among students about the stability of their future employment opportunities. Technological advances are changing the labor market by improving work efficiency while also creating the possibility of replacing certain traditional occupations. When college students become aware of these potential changes, they may perceive a threat to their future career opportunities, which can increase employment anxiety.

Employment anxiety can be understood as a psychological response to the possibility of resource loss or reduced access to future resources. As this anxiety increases, students may become more sensitive to potential risks in the employment process. They may worry about losing existing career resources and about their ability to obtain the skills, opportunities, and resources required in the future. These concerns can make students feel less prepared to deal with the challenges created by AI and may further increase their perception of employment uncertainty.

Previous research supports the relationship between employment anxiety and employment risk perception. Other studies also suggest that strengthening individuals' emotional well-being and psychological resources can help reduce employment anxiety associated with the introduction of AI technology and consequently lessen its negative effects on employment-related perceptions. Therefore, this study proposes that

employment anxiety acts as a mediating mechanism through which awareness of AI's impact influences college students' perception of employment risk.

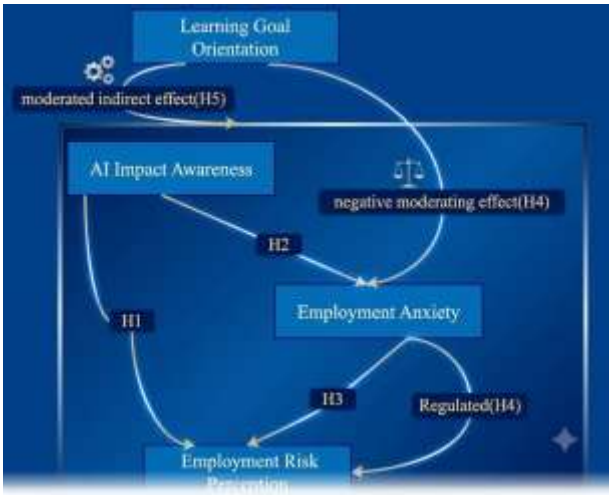

Fig. 1. Complete flow of the concept.

Based on the above discussion, and by integrating Hypotheses 1 and 2, this study proposes the following hypothesis:

Hypothesis 3: Employment anxiety mediates the positive relationship between awareness of the impact of artificial intelligence and college students' perception of employment risk.

2.3. Moderating Effect of Learning Goal Orientation

Learning goal orientation refers to an individual's desire to acquire knowledge, develop skills, and improve personal abilities. It is a relatively stable personal characteristic that influences how individuals respond to challenges and learning opportunities. According to Conservation of Resources (COR) Theory [7], individuals seek to acquire, maintain, and protect valuable resources, including material resources, personal characteristics, energy, and psychological resources. When individuals face stress or perceive a threat of resource loss, the potential loss of resources generally has a stronger psychological effect than the potential gain of resources. From this perspective, positive personal characteristics can serve as important resources that help individuals build resources and cope effectively with stressful situations.

College students with a high level of learning goal orientation generally possess more effective coping strategies and psychological resources. When facing academic or career uncertainty, they are more likely to view difficulties as opportunities for learning and development rather than as threats to their existing resources. Therefore, they are less likely to respond defensively to short-term stress. Instead, they tend to actively acquire new knowledge, develop skills, and expand their social networks, thereby strengthening their personal resources.

In the context of rapid AI development, students with a strong learning goal orientation may respond more positively to technological changes. They are more likely to view AI as an opportunity to improve their professional skills and prepare for the changing labor market. This growth-oriented mindset can increase

their knowledge and skill reserves while also strengthening their confidence in their future career prospects. As a result, employment anxiety may have a weaker influence on their perception of employment risk.

In contrast, students with a lower learning goal orientation may be more likely to maintain the status quo and avoid challenging situations when experiencing employment pressure. They may be less willing to invest time and effort in skill development, further education, or career exploration. Such passive coping can limit their ability to accumulate personal resources and may increase their perception of employment uncertainty and risk.

Therefore, learning goal orientation may act as a personal resource that influences how students manage employment-related stress. A lower level of learning goal orientation may strengthen the effect of employment anxiety on employment risk perception, whereas a higher level may weaken this relationship. In other words, students with stronger learning-oriented mindsets are more likely to manage anxiety through learning and resource development rather than interpreting it as evidence of serious future employment threats.

Based on the above discussion, the following hypothesis is proposed:

Hypothesis 4: Learning goal orientation negatively moderates the relationship between employment anxiety and college students' perception of employment risk.

Furthermore, by integrating Hypotheses 3 and 4, it can be inferred that greater awareness of AI's impact may increase students' perception of potential resource threats and consequently increase their perception of employment risk through employment anxiety. However, this effect may be weaker among students with a strong learning goal orientation. Although AI-driven changes in the labor market may increase career-related anxiety, students with clear learning goals are more likely to respond by acquiring new skills and adapting to changing job requirements. Their stronger learning orientation can therefore reduce the extent to which employment anxiety translates into perceived employment risk.

Based on this moderated mediation mechanism, the following hypothesis is proposed:

Hypothesis 5: Learning goal orientation negatively moderates the indirect effect of awareness of the impact of artificial intelligence on college students' perception of employment risk through employment anxiety.

In summary, the theoretical model proposed in this study is presented in **Fig. 1**.

2.3.1. Study Sample

This study used a convenience sampling method to select participants from the 2025 graduating class of A University in Zhaoqing City, Guangdong Province. The questionnaire was created and distributed through the Questionnaire Star platform. From April 24 to May 5, 2025, the questionnaire link was shared with student groups from different majors across the university's secondary colleges. Data collection was conducted after obtaining the students' consent. A total of 1,780 questionnaires were collected. After removing 222 invalid responses, 1,558 valid questionnaires remained, resulting in an effective response rate of 87.52%. Among the valid respondents, 811 were male (52.10%) and 747 were female (47.90%).

Regarding place of residence, 736 students (47.20%) were from rural areas, while 822 students (52.80%) were from urban areas.

2.3.2. Measurement Instruments

The measurement instruments used in this study were mainly adapted from well-established scales that have been widely applied in reputable academic research. All variables were measured using a five-point Likert scale, where 1 = strongly disagree and 5 = strongly agree.

2.3.2.1. Awareness of the Impact of Artificial Intelligence

The AI Impact Awareness Scale developed by [1] was used to measure participants' awareness of the potential effects of AI on their future employment. The scale consists of four items that assess individuals' concerns about the possibility that AI technologies may affect or replace their jobs. A representative item is: *"I worry that my job could be supplanted by artificial intelligence in the future."* The scale demonstrated good internal consistency, with a Cronbach's α of 0.835, indicating satisfactory reliability.

2.3.2.2. Perception of Employment Risk

This study adopts the employment risk perception scale based on the research of Gu (2021). The scale was streamlined and refined for the present study and consists of 11 items covering three main dimensions. A representative item is: *"In the age of artificial intelligence, I am concerned about my insufficient knowledge of the employer and the job I will undertake."* The scale demonstrates excellent internal consistency, with a Cronbach's α coefficient of 0.919.

2.3.2.3. Employment Anxiety

The employment anxiety scale was developed based on the research of [15] and was appropriately simplified for this study. The final scale contains 10 items that measure students' anxiety and concerns regarding their future employment. A representative item is: *"I am worried that my capabilities are inadequate and that I will not be able to meet employers' requirements."* The scale demonstrates good internal consistency, with a **Cronbach's α coefficient of 0.883**.

2.3.2.4. Learning Goal Orientation

Learning goal orientation was measured using an adapted version of the scale developed by Vandewalle (1997). The adapted scale contains five items assessing students' willingness to learn, develop their abilities,

and take on challenging tasks. A representative item is: *"I enjoy taking on tasks that allow me to learn new things."* The scale shows good internal consistency, with a Cronbach's α coefficient of 0.869.

Table 1 Comparison of measurement models.

Model	Included factor	χ2/df	TLI	CFI	RMSEA	SRMR
4-factor model	AI, EA, LG, ER	2.2486	0.9755	0.9775	0.0283	0.0417
3-factor model	AI, EA + LG, ER	9.6254	0.8306	0.8435	0.0744	0.1201
2-factor model	AI + EA + LG, ER	13.0607	0.7632	0.7801	0.0880	0.1338
1-factor model	AI + EA + LG + ER	25.2596	0.5237	0.5565	0.1248	0.1607

3. Data Analysis and Results

3.1. Discriminant Validity and Common Method Bias Test

To assess the discriminant validity of the four main variables—AI impact awareness, employment risk perception, employment anxiety, and learning goal orientation—this study conducted confirmatory factor analysis (CFA) using AMOS. The analysis was performed to determine whether the four variables represent distinct constructs. The results are presented in Table 1.

As shown in Table 1, the four-factor model demonstrated a better model fit than the alternative nested models. The four-factor model produced a χ^2/df value of 2.2486, CFI of 0.9775, TLI of 0.9755, RMSEA of 0.0283, and SRMR of 0.0417. These results indicate a very good model fit and provide evidence that the four constructs are sufficiently distinct from one another. Therefore, the measurement model demonstrates good discriminant validity and supports the proposed research framework.

Because all variables were measured using self-reported responses from college students, the study also examined the possibility of common method bias using Harman's single-factor test. The results showed that the first principal component explained 31.616% of the total variance. Since this value is below the commonly used threshold of 40%, no serious common method bias was detected. Thus, common method bias is unlikely to substantially affect the findings of this study, allowing subsequent analyses to be conducted with reasonable confidence.

Table 2 Descriptive statistics and correlation coefficients.

Variable	M	SD	1	2	3	4	5	6
1. Sex	0.48	0.500						
2. Household registration	1.53	0.499	0.00					
3. Subject of study	1.99	0.818	-0.022	0.014				
4. AI	4.00	0.815	0.026	-0.037	-0.016			
5. ER	3.99	0.790	0.006	-0.069***	0.048	0.451***		
6. EA	3.98	0.829	0.015	0.030	-0.004	0.311***	0.344***	
7. LG	2.08	0.923	-0.006	0.019	-0.013	-0.414***	-0.330***	-0.330***

Note: * means $P < 0.05$, ** means $P < 0.01$, *** means $P < 0.001$. The same below.

3.2. Descriptive Statistics and Correlation Analysis

Table 2 presents the means, standard deviations, and correlation coefficients for the main study variables. The results show a significant positive correlation between AI impact awareness and employment risk perception ($r = 0.451$, $p < 0.001$). AI impact awareness is also positively correlated with employment anxiety ($r = 0.311$, $p < 0.001$). In addition, employment anxiety has a significant positive relationship with employment risk perception ($r = 0.344$, $p < 0.001$). In contrast, learning goal orientation is negatively correlated with employment risk perception ($r = -0.330$, $p < 0.001$). Overall, these correlation results are

consistent with the proposed theoretical relationships and provide preliminary support for the research hypotheses.

Table 3 Results of the main effect regression and robustness test.

Variable	ER (M1)	ER (M2)	ER (M3)	ER (M4)	ER (M5)
Sex	-0.007	-0.077	-0.002	-0.009	
Household registration	-0.084	-0.919	-0.022	-0.083	
Subject of study	0.054	0.594	0.014	0.056	
AI	0.437***	1.201***	0.430***	0.430***	0.438***
R^2	0.209	0.209	0.195	0.204	0.203
F	102.73	102.73	93.79	99.47	397.26

3.3. Hypothesis Testing

3.3.1. Main Effect Analysis

According to the results presented in Table 3, after controlling for gender, household registration, and academic discipline, AI impact awareness has a significant positive effect on employment risk perception (M1, $\beta = 0.437$, $p < 0.001$). This result indicates that students with greater awareness of the impact of AI tend to perceive higher employment risks. Therefore, Hypothesis H1 is supported.

3.3.2. Robustness Analysis

Four additional tests were conducted to examine whether the main findings were robust and not dependent on a particular measurement or model specification.

First, to address potential information loss caused by using mean scores, the total scores of the original items were used instead of average scores to measure AI impact awareness and employment risk perception. The results reported in M2 of Table 3 remain significant ($\beta = 1.201$, $p < 0.001$).

Second, to avoid potential bias resulting from subjective or equal weighting of items, the entropy weight method was applied to the original items. The results in M3 of Table 3 also show a significant positive relationship ($\beta = 0.430$, $p < 0.001$).

Third, to reduce the potential influence of extreme observations, all variables were winsorized at the 1% level at both the upper and lower tails. The results in M4 of Table 3 remain significant ($\beta = 0.430$, $p < 0.001$).

Fourth, the regression analysis was repeated without control variables to examine whether the main relationship was affected by the selection of control variables. As shown in M5 of Table 3, AI impact awareness continues to have a significant positive effect on employment risk perception ($\beta = 0.438$, $p < 0.001$).

Across all four robustness tests, the coefficients for AI impact awareness remain positive and statistically significant. These consistent results confirm that the main effect is stable and robust.

3.3.3. Heterogeneity Analysis

To examine whether the relationship between AI impact awareness and employment risk perception differs across groups, this study conducted separate regression analyses based on gender, household registration,

and academic discipline. These characteristics may reflect differences in educational resources, socioeconomic background, career expectations, and exposure to technology. The results are presented in Table 4.

Table 4 Results of heterogeneity analysis.

Variable	ER (M1, Male)	ER (M2, Female)	ER (M3, Rural)	ER (M4, Urban)	ER (M5, Liberal arts)	ER (M6, Science)	ER (M7, Engineering)
AI	0.396***	0.486***	0.419***	0.450***	0.454***	0.464***	0.396***
R^2	0.174	0.239	0.207	0.199	0.194	0.244	0.180
F	170.04	234.4	191.83	204.15	126.91	165.66	112.68
N	811	747	736	822	528	515	515

The coefficients for all subgroups are significantly positive at the 1% level, indicating that greater awareness of AI's impact is associated with higher employment risk perception across different demographic and academic groups. However, the strength of this relationship varies among groups. The coefficient is higher for females (0.486) than for males (0.396) and higher for urban students (0.450) than for rural students (0.419). Regarding academic discipline, the coefficients for science students (0.464) and liberal arts students (0.454) are higher than that for engineering students (0.396).

These findings suggest that although the overall relationship is consistent, students' demographic and educational backgrounds may influence the intensity of their employment risk perception. Female students may be more concerned about potential job displacement because of existing structural challenges in the labor market. Urban students may have greater access to information about technological developments and therefore a stronger awareness of AI-driven job substitution. Engineering students may perceive themselves as relatively better prepared for technological changes because their skills are more closely related to technology and AI applications. Meanwhile, science and liberal arts students may have different concerns regarding the changing labor market and future employment opportunities.

These findings highlight the importance of considering differences among student groups when developing AI-related policies and career guidance programs. Targeted career counseling, psychological support, and skills-development programs may be particularly useful for groups with higher employment risk sensitivity. In addition, higher education institutions should strengthen interdisciplinary digital literacy and AI-related training to improve students' ability to adapt to technological changes.

3.3.4. Mediating Effect Analysis

The causal-step method was used to examine the mediating role of employment anxiety. This method provides a relatively straightforward and interpretable approach for testing mediation relationships (Jie, Minqiang, & Haozheng, 2012).

First, the effect of the independent variable, AI impact awareness, on the dependent variable, employment risk perception, was examined, providing support for Hypothesis H1. Second, the relationship between AI

impact awareness and the proposed mediating variable, employment anxiety, was tested. The results presented in Table 5 show that AI impact awareness.

Table 5 Results of mechanism inspection.

Variable	EA (M1)	ER (M2)	ER (M3)	ER (M4)
Sex	0.011	-0.009	0.003	-0.04
Household registration	0.069	-0.099	-0.14	-1.38
Subject of study	0.001	0.054	0.056	0.057
AI	0.318***	0.367***		
EA		0.217***	0.233***	0.248***
LG			-0.342***	-0.355***
EAXLG				-0.079**
R^2	0.098	0.256	0.231	0.237
F	42.413	106.86	93.267	80.282

4. Conclusion

Based on the Conservation of Resources (COR) Theory, this study examined how awareness of the impact of artificial intelligence (AI) influences college students' perceptions of employment risk and explored the psychological mechanisms and moderating factors involved in this relationship. The main findings are as follows:

(1) Greater awareness of AI's impact is significantly associated with higher employment risk perception among college students. In other words, students who are more aware of the potential effects of AI are more likely to perceive greater uncertainty, challenges, and risks in the future labor market.

(2) Employment anxiety partially mediates the relationship between AI impact awareness and employment risk perception. When students perceive that the development of AI may threaten their future career opportunities, they are more likely to experience employment-related anxiety. This increased anxiety subsequently strengthens their perception of potential difficulties and uncertainties during the job-search process.

(3) Learning goal orientation negatively moderates the relationship between employment anxiety and employment risk perception. Students with a stronger learning goal orientation are less likely to translate employment anxiety into heightened perceptions of employment risk. Furthermore, learning goal orientation negatively moderates the indirect effect of AI impact awareness on employment risk perception through employment anxiety. Thus, a stronger learning-oriented mindset can weaken the indirect effect of AI awareness on employment risk perception by reducing the influence of employment anxiety.

Acknowledgements

The authors would like to thank all those who directly or indirectly contributed to the successful completion of this research.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability Statement

NA

Author Contributions

All authors participated equally for researching and writing the contents of this paper.

References

[1] Ge XW, Liu X, Wang KY, Li YX. Challenge or threat? Research on the double-edged sword effect of AI awareness on career decision-making difficulties. Curr Psychol. 2025;44:1228–12302.

[2] Ge XW, Liu X, Wang KY, Li YX. Challenge or threat? Research on the double-edged sword effect of AI awareness on career decision-making difficulties. Curr Psychol. 2025;44:1228–12302.

[3] Yam KC, Tang PM, Jackson JC, Su RK, Gray K. The rise of robots increases job insecurity and maladaptive workplace behaviors: Multimethod evidence. J Appl Psychol. 2023;108:850–870.

[4] Lingmont DNJ, Alexiou A. The contingent effect of job automating technology awareness on perceived job insecurity: Exploring the moderating role of organizational culture. Technol Forecast Soc Change. 2020;161:120302. doi:10.1016/j.techfore.2020.120302.

[5] Ito JK, Brotheridge CM. Resources, coping strategies, and emotional exhaustion: A conservation of resources perspective. J Vocat Behav. 2003;63:490–509.

[6] Trumpold K, Zapf D, Kern M. A reverse perspective on emotion work and well-being: Connecting chronic burnout to emotion regulation from an antecedent perspective. Int J Stress Manag. 2024;31:252–265.

[7] Hobfoll SE. Conservation of resources: A new attempt at conceptualizing stress. Am Psychol. 1989;44:513–524.

[8] Lee HH, Yang TT. Employee goal orientation, work unit goal orientation and employee creativity. Creat Innov Manag. 2015;24:659–674.

[9] Bereby-Meyer Y, Kaplan A. Motivational influences on transfer of problem-solving strategies. Contemp Educ Psychol. 2005;30:1–22.

[10] Abbasi, B. N., Wu, Y. Q., & Luo, Z. M. (2025). Exploring the impact of artificial intelligence on curriculum development in global higher education institutions. Education and Information Technologies, 30, 547–581.

[11] Al-Zahrani AM, Alasmari TM. Exploring the impact of artificial intelligence on higher education: The dynamics of ethical, social, and educational implications. Humanit Soc Sci Commun. 2024;11:1–12.

[12] Tzirides AO, Zapata G, Kastaniotis NP, Saini AK, Castro V, Ismael SA, et al. Combining human and artificial intelligence for enhanced AI literacy in higher education. Comput Educ Open. 2024;6:100184.

[13] Ravishankar K, Logasakthi K. Impact of artificial intelligence on students' sustainable education and career development using extended TOE framework. Korea Rev Int Stud. 2023;16:22–35.

[14] Jeremie M, Maimaiti G, Ru N. Examining international graduate students' career willingness in China: Influencing factors and integration of professional development. J Stud Int Educ. 2024;28:835–856.

[15] Fang H, Xu XY. The role of psychological resilience and career adaptability in the relationship between perceived social support and employment anxiety among college students. J Psychol Afr. 2025;35:151–157.

[16] Li GQ, Tao Y, Meng Y, Lu M. Change or paradox: The double-edged sword effect of workplace ostracism on employee behavior. J Organ Change Manag. 2024;37:439–462.

[17] Karatepe OM, Ozturk A, Kim TT. The effects of nonwork and personal resources on frontline bank employees' work engagement and critical job outcomes. Int J Bank Mark. 2019;37:858–879.

[18] Liang Y, Zhai Y. The impact of artificial intelligence impact awareness on college students' employment risk perception: A moderated mediation model. **Acta Psychol**. 2025;261:105808.