

Influencing Factors and Coping Strategies for College Students' Academic Information Anxiety in the AI Environment*

Quan Zhaojuan¹ Zhu Zhu² Yang Qianhui³

2026-07-24

ChinaRxiv

View the original and related papers at
<https://chinaxiv.org/items/chinaxiv-202607.00235>

Source: ChinaXiv. Machine translation. Verify with the original.

Abstract

The rapid iteration and widespread application of AI technologies have triggered a massive surge in academic information, causing university students to face more challenges in the academic field and consequently experience academic information anxiety. This paper focuses on the new characteristics of university students' academic information anxiety in the AI environment. Based on 528 valid questionnaires, it presents the anxiety levels and dimensions of university students. Through questionnaire surveys and data analysis, the study revises the traditional model of factors influencing information anxiety, indicating that age and discipline have significant effects on academic information anxiety in the AI environment, while differences in gender and educational level show no significant effect. Meanwhile, the study explores the relationship between university students' AI usage and the dimensions of academic information anxiety, revealing that the fit between individual information-processing abilities and tool-use strategies is key to alleviating academic information anxiety. It provides strategic references for universities to build an AI+ information literacy education system and to conduct tiered AI literacy and information literacy instruction according to the anxiety characteristics of students from different disciplines and age groups.

Full Text

[Academic Focus: Literacy Development in the AI Environment]

Influencing Factors and Coping Strategies for College Students' Academic Information Anxiety in the AI Environment*

Quan Zhaojuan¹ Zhu Zhu² Yang Qianhui³

1. Shanghai University of Finance and Economics Library, Shanghai, 200433
2. School of Finance, Shanghai University of Finance and Economics, Shanghai, 200433
3. School of Civil Engineering and Architecture, Shandong University of Science and Technology, Qingdao, 266590

[Abstract] The rapid iteration and widespread application of AI technologies have triggered a massive increase in academic information, causing college students to face more challenges in the academic field and thus giving rise to academic information anxiety. Focusing on the new characteristics of college students' academic information anxiety in the AI environment, this study, based on 528 valid questionnaires, presents the degree and dimensions of such anxiety among college students. Through questionnaire research and data analysis,

sis, the study revises the traditional model of factors influencing information anxiety, indicating that age and discipline have significant effects on academic information anxiety in the AI environment, whereas gender and educational background differences do not show significant effects. Meanwhile, the study explores the association between college students' AI use and the dimensions of academic information anxiety, revealing that the adaptability between individual information-processing ability and tool-use strategies is the key to alleviating academic information anxiety. It provides strategic reference for universities to build an AI + information literacy education system and to carry out AI literacy and information literacy instruction in a stratified manner according to the anxiety characteristics of college students of different disciplines and ages.

【Keywords】 AI environment; academic information anxiety; AI literacy; information literacy; influencing factors; college students

【CLC Number】G258.6 **【Document Identification Code】**A **【Article Number】** 1003-7845(2026)03-0001-10

【Citation Format】 Quan Zhaojuan, Zhu Zhu, Yang Qianhui. Influencing Factors and Coping Strategies for College Students' Academic Information Anxiety in the AI Environment[J]. Library Work in Colleges and Universities, 2026(3): 1-10.

Introduction

Amid the wave of digitalization, AI technology has become deeply integrated into the academic field, reshaping the production, dissemination, and use of academic information. Studies show that 85% of college students who have encountered ChatGPT have applied it to academic activities^[2]. The application of AI in academic information retrieval, writing, and other processes has not only greatly improved work efficiency and quality, but also enhanced users' sense of self-efficacy. However, the extensive penetration of AI into the academic field has also brought problems such as information overload and uneven information quality, which easily triggers users' distrust, insecurity, and anxiety toward information^[3].

College students are a new force in the academic field. Yet in the complex and changeable AI academic information environment, their information literacy often struggles to adapt to diversified information needs, making them more prone to information anxiety. Existing studies have discussed information anxiety relatively comprehensively, but exploration of the relationship between AI use and academic information anxiety remains relatively scarce. Starting from this specific context, this paper analyzes the new characteristics of college students' academic information anxiety in the AI environment, providing reference for universities to improve information literacy and AI literacy education systems and to help college students effectively respond to academic information anxiety.

1 Domestic and International Related Research

1.1 Research on Academic Information Anxiety

1.1.1 Conceptual Definition of Academic Information Anxiety The concept of information anxiety was first proposed by Wurman R. S. in 1989, mainly referring to the psychological stress state that arises when the knowledge needed by an individual cannot be effectively obtained, understood, or used^[4]. Domestic scholars have also conducted in-depth discussions of information anxiety. Li Yuling et al.^[5] believe that information anxiety is a state of tension and anxiety formed in an individual's information-processing process under the joint influence of internal and external factors. Shen Yutian et al.^[6] propose that information anxiety is a negative psychological state caused by environmental constraints, insufficient literacy, or interaction barriers.

In summary, academic information anxiety can be defined as the psychological pressure experienced by researchers in academic activities due to information overload, difficulty in obtaining information, or insufficient self-processing ability. When college students are unable to obtain appropriate academic information over an extended period, they commonly develop anxious and uneasy emotions^[7]. In recent years, the rapid development of AI technology has provided convenience for academic research, but it has also brought challenges such as information overload, uneven information quality^[8], and the mixing of true and false information, thereby intensifying college students' psychological pressure in academic activities.

* This paper is one of the research outcomes of the 2024 key research project of the National Committee for Library and Information Science of Finance and Economics Universities, "Research on the Application Modes and Effects of Database-Embedded AI in Business Data Acquisition" (Project No. 2024111089), and the 2025 Shanghai University of Finance and Economics Undergraduate Innovation and Entrepreneurship Training Program project, "The Status and Coping of College Students' Academic Information Anxiety in the AI Environment" (Project No. 102722025201).

Author profiles: Quan Zhaojuan, master's degree, librarian, research direction: information behavior; Zhu Zhu, undergraduate, research direction: information anxiety; Yang Qianhui, undergraduate, research direction: information anxiety.

Date received: 2025-12-29 Responsible editor: Liu Yi

1.1.2 Influencing Factors and Mitigation Measures for Academic Information Anxiety

The factors influencing academic information anxiety can be divided into external and internal factors. External factors mainly focus on the information environment in which users are situated; among them, the quantity and quality

of information are the most critical. In academic research, both information overload and information scarcity can trigger anxiety[9]; the influx of irrelevant information reduces the efficiency of information acquisition and processing, contaminates the data ecosystem, and interferes with individuals' judgments about information accuracy[8]. Internal factors mainly include information literacy and self-efficacy. The clarity of information needs, the accuracy of information searching, and the ability to judge the authenticity of information all affect the degree of information anxiety[10]; positive metacognition and good self-efficacy can positively regulate information anxiety[11]. Overall, external factors affect the difficulty of information screening and processing, while internal factors determine individuals' coping capacity; the two jointly act on college students' academic information anxiety.

Previous studies have suggested that alleviating academic information anxiety can begin from three aspects: the information environment, information literacy, and stress-coping capacity. Universities can optimize the information environment through information-processing technologies and other means, thereby helping students cope with excessive information[12]. College students can enhance their own capacity for information acquisition and processing through interdisciplinary knowledge integration and improvement of AI literacy[13]; at the same time, they can also alleviate information anxiety through correct attribution and by avoiding the excessive pursuit of complete information[14].

1.2 The Impact of AI on Academic Information Behavior

Since 2022, generative AI represented by ChatGPT has reshaped methods of information seeking[15], and its personalized search model has been widely recognized. In academic activities, AI can efficiently support the retrieval and processing of academic information, assist in in-depth textual analysis, improve the efficiency of literature reading, and provide conceptual references for research and writing.

While AI brings convenience, it also entails certain risks. Customized information can easily form information cocoons[16], interfering with users' rational judgment. Excessive reliance on AI may affect the development of higher-order cognitive abilities such as critical thinking[17]. In addition, the widespread application of AI has also triggered anxiety among users: on the one hand, AI-assisted research makes researchers worry about being replaced and about the decline of their self-worth[18]; on the other hand, AI-generated content mixes the true and the false, and the massive amount of information produced by the superposition of authentic and inauthentic content further aggravates information overload, causing users to experience anxiety about information authenticity and risk[19].

In summary, existing studies have explored academic information anxiety and the impact of AI on academic information behavior, but research on college students' academic information anxiety in an AI environment remains relatively scarce. Focusing on this context, this paper explores the current state of college

students' academic information anxiety and possible mitigation pathways, providing references for improving college students' information-processing abilities, alleviating anxiety, and helping universities improve information services and strengthen education in information literacy and AI literacy.

2 Research Design

2.1 Research Hypotheses

2.1.1 Individual Background and Academic Information Anxiety in an AI Environment

Previous studies have shown that information users of different genders[20], ages[18], educational backgrounds[21], and disciplines[7] differ in various dimensions of information anxiety. At the gender level, influenced by physiological characteristics and growth environments, college students of different genders differ in their modes of thinking. Some studies have found that male students have stronger logical thinking[20] and are therefore more capable of structurally processing AI-generated content, resulting in a lower level of information anxiety than female students. At the age and educational-background levels, some studies suggest that older students and those with higher educational attainment have richer learning and life experience, stronger information screening and processing abilities, and greater efficiency in coping with complex information situations[18], and thus may have lower anxiety levels. At the disciplinary-difference level, students in the humanities and social sciences often have weaker information retrieval abilities than students in science and engineering, and are more likely to experience integration anxiety when screening massive amounts of literature[7]. Accordingly, this study infers that the above factors likewise affect college students' academic information anxiety in an AI environment, and therefore proposes the following hypotheses:

Hypothesis 1: In an AI environment, college students' academic information anxiety is significantly correlated with gender.

Hypothesis 2: In an AI environment, college students' academic information anxiety is significantly correlated with age.

Hypothesis 3: In an AI environment, college students' academic information anxiety is significantly correlated with educational background.

Hypothesis 4: In an AI environment, college students' academic information anxiety is significantly correlated with discipline.

2.1.2 AI Use and Academic Information Anxiety in an AI Environment

At present, AI is being applied increasingly widely in the academic field, and its uniqueness and complexity are becoming ever more evident. In terms of

frequency of use, frequent use of AI tools can shorten the time required to search for and organize information, improve processing efficiency, and reduce anxiety about information screening[22]; however, long-term dependence can easily lead to cognitive inertia and weaken the ability to think independently, especially when dealing with complex academic problems, thereby giving rise to creative anxiety[23]. In terms of tool types, when fewer types of AI tools are used, college students are easily influenced by algorithmic recommendations and fall into information cocoons, producing screening anxiety; whereas the integrated use of multiple AI tools can broaden information channels and improve information reserves[18], but it can also increase the difficulty of information integration, intensify the burden of screening, and thereby trigger integration anxiety[24]. Based on the associations between the frequency and types of AI-tool use and academic information anxiety, this study proposes the following hypotheses:

Hypothesis 5: In an AI environment, college students' academic information anxiety is significantly correlated with the frequency of AI-tool use.

Hypothesis 6: In an AI environment, college students' academic information anxiety is significantly correlated with the types of AI tools used.

In addition, as AI becomes deeply integrated into learning and daily life, college students form different subjective evaluations because of individual cognitive differences. If college students believe that AI has an extremely large impact on their own academic ability, they may be prone to weakening their own academic subjectivity; when the tool's effects fall short of expectations, psychological discrepancy may produce anxiety. If college students believe that AI has an extremely small impact on their own academic ability, they may reduce or even refuse to use AI tools, and in literature retrieval and dat—

Because the tool was absent in steps such as organization, students had to choose manual processing; under a heavy workload, excessive pressure could easily lead to anxiety. Accordingly, this study proposes the following hypothesis:

Hypothesis 7: In the AI environment, college students' academic information anxiety is significantly correlated with the self-evaluation results of AI impact.

2.2 Questionnaire Design

To accurately measure college students' academic information anxiety in the AI environment, this study designed a questionnaire based on relevant theories and preliminary exploratory work.

The questionnaire items were refined and designed according to the main factors influencing college students' academic information anxiety in the AI environment, and consist of three parts: (1) **individual background information**, collecting demographic information such as gender, age, educational level, and discipline, in order to explore the influence of individual differences on academic information anxiety in the AI environment; (2) **AI tool use**, investigating college students' frequency of AI tool use, types of tools used, and self-evaluation

of impact, so as to analyze the relationship between usage behavior and academic information anxiety; and (3) **a diagnostic scale of college students' academic information anxiety in the AI environment.**

In developing the scale, principles such as covering the full process of academic information activities, avoiding redundancy and overlap among items, and ensuring applicability to AI contexts were followed, so as to ensure the scientific rigor and applicability of the scale items. On the basis of reviewing existing information anxiety scales, this study used as its basic framework college students' academic information anxiety scales that are suited to college student groups and academic scenarios, have relatively complete item disclosure, and were published relatively recently[6,25]. Drawing on modules such as information seeking, screening and evaluation, access barriers, processing and integration, and skill insufficiency, items were developed to ensure that the scale had a theoretical foundation and scientific validity. At the same time, in combination with studies related to college students' use of AI tools[26], the items were revised and expanded for applicability. Particular emphasis was placed on adding descriptions of AI-specific anxiety situations, such as the use of AI prompts, judgment of the quality of automatically generated information, screening of generated results, and judgment of the reliability of generated content. Ultimately, the Academic Information Anxiety Scale for College Students in the AI Environment was formed.

2.3 Data Collection and Cleaning

This study collected 570 questionnaires through an online survey. The collection period was from October 22, 2024 to March 20, 2025.

To improve the accuracy of the analysis, this study established the following rules to exclude invalid questionnaires: (1) campus identity was not "college student" ; (2) response time was less than 60 seconds; and (3) responses to the core measurement items were incomplete. Ultimately, 528 valid questionnaires were obtained, with an effective response rate of 92.63%.

2.4 Reliability and Validity Testing of the Scale

This study used SPSS 24 to conduct statistical analysis of the scale data. The Pearson correlation coefficients r of the scale items ranged from 0.593 to 0.849, higher than the criterion of 0.40, indicating good content validity of the scale. KMO analysis was conducted on the scale items; the KMO value was 0.976 (> 0.8), and the approximate chi-square value of Bartlett's test of sphericity was 14393.351, with $p = 0.000$ (< 0.001), reaching a significant level. This indicates that the data were suitable for factor analysis.

To determine the relationships between factors and items, principal component analysis was used to extract factors. After rotation using the Kaiser-normalized maximum variance method, a total of 6 factors were extracted. The factor load-

ings of all items ranged from 0.451 to 0.792 (> 0.4), indicating good construct validity of the scale.

Based on the rotated component matrix and the item content, the 6 factors were named, forming the measurement items and dimensions of college students' academic information anxiety in the AI environment (see Table 1). Each factor contains 3-7 items, the commonality of the items is good, and the Cronbach's Alpha coefficient of each factor is greater than 0.8, indicating an excellent level of reliability.

In summary, the 30 items of the scale were ultimately classified into 6 dimensions: search strategy anxiety, information collection anxiety, information access anxiety, information screening anxiety, information evaluation anxiety, and information use anxiety. The scale has good reliability and validity and can be used in subsequent research.

Table 1 Factor Loadings of Scale Items and Reliability of Each Factor

Dimension	Item	Loading	Reliability
Search strategy anxiety	When using AI to complete academic tasks, I often do not know where to start.	0.753	0.820
Search strategy anxiety	Choosing appropriate prompts to enable AI to generate content better is a step that I find difficult and anxiety-inducing.	0.792	0.820
Search strategy anxiety	When facing information in unfamiliar fields generated by AI, I feel anxious.	0.647	0.820

Dimension	Item	Loading	Reliability
Information collection anxiety	I often spend a great deal of time using AI to collect, screen, and organize information, and I become irritable and uneasy because of this.	0.606	0.914
Information collection anxiety	I always feel that when using AI, I may have missed other important information, and judging when to stop collecting information makes me anxious.	0.508	0.914
Information collection anxiety	I feel frustrated because AI-generated content is difficult to understand.	0.447	0.914
Information collection anxiety	I am always worried that I may miss key information because I use AI.	0.486	0.914

Dimension	Item	Loading	Reliability
Information collection anxiety	I feel that defects in the functions and interfaces of AI tools prevent me from improving efficiency and waste my time.	0.739	0.914
Information collection anxiety	The unreasonable organization of academic information causes me to spend more effort using AI to search for academic information, and I feel exhausted.	0.661	0.914
Information collection anxiety	When different skills are needed to complete AI information generation, I feel frustrated because of insufficient skills.	0.451	0.914
Information access anxiety	When I use AI to find the information I need but do not have free access permission, I feel irritated.	0.733	0.885

Dimension	Item	Loading	Reliability
Information access anxiety	Information generated by AI often cannot be obtained completely, and restrictions on full-text resources make me anxious.	0.689	0.885
Information access anxiety	When others use AI to find information that I cannot retrieve myself, I feel anxious and disappointed.	0.431	0.885

Table 1 (continued)

Dimension	Item	Loading	Reliability
Information screening anxiety	When judging the relevance of AI-generated information to my research topic, I feel considerable pressure	0.641	0.896
Information screening anxiety	The process of screening, organizing, and classifying AI-generated information troubles me	0.732	0.896

Dimension	Item	Loading	Reliability
Information screening anxiety	When judging the quality of AI search results, I feel anxious	0.636	0.896
Information screening anxiety	When organizing and classifying AI-generated information and summarizing it into new knowledge, I often have no clear idea where to start	0.453	0.896
Information screening anxiety	I worry that AI-generated information may contain errors	0.725	0.896
Information evaluation anxiety	When the quality of AI-generated information is poor, I feel frustrated	0.669	0.918
Information evaluation anxiety	I worry that AI-generated information is not updated in a timely manner and may miss higher-quality resources	0.564	0.918
Information evaluation anxiety	Repeatedly receiving duplicate information generated by AI annoys me	0.471	0.918

Dimension	Item	Loading	Reliability
Information evaluation anxiety	When AI-generated content is irrelevant to the topic, I feel irritated	0.482	0.918
Information evaluation anxiety	When AI-generated results do not meet my information needs, I feel frustrated and anxious	0.446	0.918
Information use anxiety	When foreign-language AI tools contain newer and more valuable academic information, I worry that I may miss it because of limitations in my own language ability	0.557	0.933
Information use anxiety	When choosing AI tools according to different needs, I feel conflicted and uncertain	0.602	0.933

Dimension	Item	Loading	Reliability
Information use anxiety	I worry that my professional knowledge is not solid enough, resulting in low efficiency in using AI-generated information	0.675	0.933
Information use anxiety	When extracting the core content of AI-generated information, I feel pressure	0.700	0.933
Information use anxiety	When I find the viewpoint I need in AI-generated information but cannot locate the original text, I feel restless and uneasy	0.642	0.933
Information use anxiety	Judging the reliability of AI information sources and whether they can be used makes me anxious	0.531	0.933

Information use anxiety	Faced with numerous AI-generated results, I do not know which information best meets my needs	0.600	0.933
-------------------------	---	-------	-------

3 Data Analysis

3.1 Sample Characteristics

A descriptive analysis was conducted on the valid samples (see Table 2). The gender distribution of the sample was relatively balanced, and the ranges of age and educational background were relatively broad. The sample involved disciplines such as economics, management, science, and law, and thus can, to a certain extent, reflect the overall situation of the university student population. In terms of AI tool use, about two-thirds of university students use AI tools three times or more per week, more than half use one to two types of AI tools, and more than 80% believe that AI has a certain impact on their study and daily life.

Table 2 Sample Descriptive Analysis

Attribute	Category	Frequency	Percentage/%	Attribute	Category	Frequency	Percentage/%
Gender	Male	207	39.2	AI tool use frequency (closest frequency)	More than 10 times per day	17	3.2
Gender	Female	321	60.8	AI tool use frequency (closest frequency)	3 times per day	124	23.5

Attribute	Category	Frequency	Percentage/%	Attribute	Category	Frequency	Percentage/%
Age	Under 18 years old	25	4.7	AI tool use frequency (closest frequency)	3 times per week	212	40.2
Age	18-24 years old	450	85.2	AI tool use frequency (closest frequency)	3 times per month	93	17.6
Age	25-45 years old	53	10.1	AI tool use frequency (closest frequency)	3 times per year	66	12.5
Education background	Junior college	15	2.8	AI tool use frequency (closest frequency)	Other	16	3.0
Education background	Undergraduate	443	83.9	Types of AI tools used	5 or more types	18	3.4
Education background	Master's	52	9.9	Types of AI tools used	3-5 types	159	30.1

Attribute	Category	Frequency	Percentage/%	Attribute	Category	Frequency	Percentage/%
Education back-ground	Doctoral	18	3.4	Types of AI tools used	1-2 types	310	58.7
	Literature	14	2.7		None	41	7.8
Discipline	Law	34	6.4	Types of AI tools used	Somewhat influential	291	55.1
	Management	161	30.5		Very influential	138	26.1
Discipline	Science	73	13.8	Self-assessed impact of AI	Little impact	99	18.8
	Economics	219	41.5				
Discipline	Engineering	24	4.5				
Discipline	Other	3	0.6				

3.2 Analysis of the Degree and Dimensions of University Students' Academic Information Anxiety in an AI Environment

The scale contains a total of 30 items. Each item is scored from low to high according to the degree of anxiety on a 1-5 scale. The mean item score is used as the quantitative representation of university students' level of academic information anxiety in an AI environment; accordingly, the degree of anxiety is classified...

are divided into four levels: normal ($1 \leq X \leq 2$), mild ($2 < X \leq 3$), moderate ($3 < X \leq 4$), and severe ($4 < X \leq 5$).

3.2.1 Degree of Academic Information Anxiety The descriptive statistics for the degree of academic information anxiety among college students in the AI environment (see Table 3) show that only 17.8% of individuals had a normal level of anxiety. The remaining students experienced mild (35.6%), moderate (39.2%), or severe (7.4%) anxiety. That is, college students generally experi-

enced varying degrees of academic information anxiety in the AI environment, with moderate anxiety accounting for the largest proportion.

Table 3 Characteristics of the Degree of Academic Information Anxiety Among College Students in the AI Environment

Anxiety level	Frequency	Percentage/%
Normal	94	17.8
Mild	188	35.6
Moderate	207	39.2
Severe	39	7.4
Total	528	100

3.2.2 Dimensions of Academic Information Anxiety Descriptive statistics were conducted for the six dimensions of college students' academic information anxiety in the AI environment (see Table 4). The mean values for information-acquisition anxiety and information-evaluation anxiety were both higher than 3.00, reaching the level of moderate anxiety. This indicates that college students generally experience moderate anxiety regarding academic information acquisition and quality evaluation in the AI environment. The mean values of the remaining dimensions ranged from 2.50 to 3.00. Among the six dimensions, whether viewed from the mean or the median, information-evaluation anxiety was the most severe, while search-strategy anxiety was the mildest. This suggests that, in the AI environment, college students experience relatively low anxiety in the academic information search-strategy stage, but are most uncertain about how to evaluate the quality of results after obtaining information.

Table 4 Characteristics of the Dimensions of Academic Information Anxiety Among College Students in the AI Environment

Dimension	Mean	Median	Standard deviation
Search-strategy anxiety	2.52	2.67	0.96
Information-collection anxiety	2.72	3.00	0.97
Information-acquisition anxiety	3.06	3.00	1.05
Information-screening anxiety	2.78	3.00	1.00
Information-evaluation anxiety	3.18	3.25	1.03
Information-use anxiety	2.90	3.00	1.00

3.3 Influence of Individual Background on College Students' Academic Information Anxiety in the AI Environment

3.3.1 Gender Taking each anxiety dimension and the total mean score as dependent variables and gender as the independent variable, Levene's test for homogeneity of variance and an independent-samples *t*-test were conducted to

examine the influence of gender on the dimensions of college students' academic information anxiety in the AI environment.

The results showed that the effects of gender were not significant for search-strategy anxiety ($p = 0.651$), information-collection anxiety ($p = 0.349$), information-acquisition anxiety ($p = 0.259$), information-screening anxiety ($p = 0.677$), information-evaluation anxiety ($p = 0.971$), information-use anxiety ($p = 0.143$), or the total mean anxiety score ($p = 0.458$) ($p > 0.05$). Therefore, gender had no significant influence on college students' academic information anxiety in the AI environment, and Hypothesis 1 was not supported.

3.3.2 Age ANOVA showed that age had a significant effect on the total mean score of college students' academic information anxiety ($p = 0.016$). Specifically, age had significant effects on four dimensions: search-strategy anxiety ($p = 0.010$), information-acquisition anxiety ($p = 0.015$), information-screening anxiety ($p = 0.036$), and information-use anxiety ($p = 0.004$) ($p < 0.05$); however, its effects on information-collection anxiety and information-evaluation anxiety were not significant.

To further reveal differences among age groups, the LSD method was used to conduct post hoc multiple comparisons for the dimensions with significant differences. The pairwise comparisons showing significant differences are presented in Table 5. Overall, the group under 18 years old had the highest anxiety level. Compared with the 25-45-year-old group, the two younger age groups were significantly higher in the dimensions of search-strategy anxiety, information-acquisition anxiety, information-screening anxiety, and in the total anxiety score. For information-use anxiety, the under-18 group was significantly higher than the other two age groups, and the 18-24-year-old group was significantly higher than the 25-45-year-old group. Overall, the results indicate a trend whereby the younger the age, the higher the level of academic information anxiety.

Table 5 LSD Post Hoc Tests Among Age Groups

Dependent variable	Age (<i>I</i>)	Age (<i>J</i>)	Mean difference (<i>I</i> - <i>J</i>)	Significance
Search-strategy anxiety	25-45 years old	Under 18 years old	-.516*	0.026
Search-strategy anxiety	25-45 years old	18-24 years old	-.407*	0.003
Information-acquisition anxiety	25-45 years old	Under 18 years old	-.704*	0.006

Dependent variable	Age (<i>I</i>)	Age (<i>J</i>)	Mean difference (<i>I</i> – <i>J</i>)	Significance
Information-acquisition anxiety	25–45 years old	18–24 years old	-.341*	0.025
Information-screening anxiety	25–45 years old	Under 18 years old	-.606*	0.012
Information-use anxiety	18–24 years old	Under 18 years old	-.470*	0.022
Information-use anxiety	25–45 years old	Under 18 years old	-.792*	0.001
Information-use anxiety	25–45 years old	18–24 years old	-.323*	0.026
Mean information-anxiety score	25–45 years old	Under 18 years old	-.620*	0.005
Mean information-anxiety score	25–45 years old	18–24 years old	-.271*	0.040

3.3.3 Educational Attainment Taking educational attainment as the independent variable, ANOVA was conducted for each dimension of information anxiety. The results showed that the effects on search-strategy anxiety ($p = 0.299$), information-collection anxiety ($p = 0.435$), information-acquisition anxiety ($p = 0.078$), information-screening anxiety ($p = 0.296$), information-evaluation anxiety ($p = 0.676$), information-use anxiety ($p = 0.077$), and the overall mean of information anxiety ($p = 0.217$) were not significant ($p > 0.05$). Accordingly, educational attainment showed no significant influence on any anxiety dimension or on the overall level, and Hypothesis 3 was not supported.

3.3.4 Discipline

ANOVA was used to examine the influence of discipline on the various dimensions of information anxiety. The results show that discipline had a significant effect on the overall mean of academic information anxiety ($p = 0.030$). Specifically, discipline had significant effects on the dimensions of information screening anxiety ($p = 0.042$), information evaluation anxiety ($p = 0.015$), and information utilization anxiety ($p = 0.016$) ($p < 0.05$), while its effects on the other three dimensions were not significant.

Among the six anxiety dimensions, students in engineering (3.0639) and law (3.0637) had mean anxiety scores above 3. Students in “other disciplines” had

the lowest average anxiety level (1.9556), while the mean scores for the remaining disciplines ranged from 2.6 to 3.0.

In summary, among the six dimensions of academic information anxiety in the AI environment, age significantly affected search strategy anxiety, information acquisition anxiety, information screening anxiety, and information utilization anxiety. Discipline significantly affected information screening anxiety, information evaluation anxiety, and information utilization anxiety. Gender and educational level had no significant effects.

3.4 Effects of AI Tool Use on College Students' Academic Information Anxiety in the AI Environment

3.4.1 Frequency of AI Tool Use ANOVA and LSD post hoc tests showed (see Table 6) that the frequency of AI tool use had a significant effect on college students' overall academic information anxiety ($p = 0.029$). In terms of specific dimensions, significant between-group differences were found for information acquisition anxiety ($p = 0.018$), information evaluation anxiety ($p = 0.042$), and information utilization anxiety ($p = 0.014$), while the differences in the remaining three dimensions were not significant ($p > 0.05$).

In terms of anxiety level, ultra-high-frequency users who used AI tools 10 or more times per day were mainly in the normal or mild-anxiety range, markedly lower than other groups. High-frequency users who used AI tools three times per day or three times per week were mainly in the mild-to-moderate anxiety range. Medium- and low-frequency users who used AI tools three times per month or three times per year were mainly in the moderate-anxiety range, with relatively high overall anxiety. For the dimensions in which significant differences were observed—information acquisition anxiety, information evaluation anxiety, and information utilization anxiety—medium-frequency users who used AI tools three times per month had significantly higher mean anxiety scores than the other groups.

Table 6 Effects of AI Tool Use Frequency on Academic Information Anxiety

	10 times/day	3 times/day	3 times/week	3 times/month	3 times/year	Other	<i>F</i>	<i>p</i>
Search strat- egy anxi- ety	1.88 ± 1.20	2.44 ± 0.86	2.44 ± 0.93	2.80 ± 1.00	2.75 ± 0.93	2.42 ± 1.09	1.588	0.136

Dimensions	10 times/day	3 times/day	3 times/week	3 times/month	3 times/year	Other	<i>F</i>	<i>p</i>
Information collection anxiety	2.67 ± 1.12	2.67 ± 0.94	2.65 ± 0.94	2.90 ± 0.98	2.94 ± 0.97	2.80 ± 1.00	1.512	0.160
Information acquisition anxiety	2.69 ± 1.21	3.10 ± 1.04	3.00 ± 1.05	3.25 ± 1.00	3.12 ± 1.01	3.16 ± 1.12	2.446	0.018*
Information screening anxiety	2.68 ± 1.15	2.81 ± 0.96	2.72 ± 1.00	2.89 ± 0.95	2.85 ± 0.97	2.92 ± 1.24	1.416	0.196
Information evaluation anxiety	2.31 ± 1.19	3.27 ± 1.00	3.14 ± 1.03	3.35 ± 1.00	3.13 ± 0.99	3.01 ± 1.12	2.105	0.042*
Information utilization anxiety	2.68 ± 1.15	2.85 ± 1.02	2.87 ± 0.96	3.06 ± 0.96	3.02 ± 1.02	3.09 ± 1.07	2.539	0.014*
Mean information anxiety	2.10 ± 1.13	2.89 ± 0.92	2.89 ± 0.88	3.06 ± 0.95	2.99 ± 0.92	2.94 ± 0.95	2.249	0.029*

3.4.2 Types of AI Tools Used ANOVA on the types of AI tools used showed that this factor had a significant effect on the overall mean of academic information anxiety ($p = 0.000$). It also had significant effects on all dimensions: search strategy anxiety ($p = 0.000$), information collection anxiety ($p = 0.000$),

information acquisition anxiety ($p = 0.000$), information screening anxiety ($p = 0.002$), information evaluation anxiety ($p = 0.002$), and information utilization anxiety ($p = 0.000$) ($p < 0.05$).

After LSD post hoc tests were conducted and the pairwise comparisons with significant differences were compiled (see Table 7), it was found that college students who used five or more AI tools had significantly lower anxiety levels than the other groups. For information utilization anxiety, college students who used 3-5 AI tools had significantly higher anxiety levels than those who used 1-2 tools. Search strategy anxiety was significantly negatively correlated with the number of AI tool types used. In the remaining dimensions, there was no significant difference in anxiety between students who used 3-5 AI tools and those who used two or fewer AI tools.

Table 7 LSD Post Hoc Tests Among Groups by Types of AI Tools Used

Dependent variable	AI tool use type (<i>I</i>)	AI tool use type (<i>J</i>)	Mean difference (<i>I</i> – <i>J</i>)	Significance
Search strategy anxiety	5 or more types	3-5 types	–.647*	0.006
Search strategy anxiety	5 or more types	1-2 types	–.838*	0.000
Search strategy anxiety	5 or more types	None	–.989*	0.000
Search strategy anxiety	3-5 types	1-2 types	–.190*	0.039
Search strategy anxiety	3-5 types	None	–.341*	0.039
Information collection anxiety	5 or more types	3-5 types	–1.244*	0.000
Information collection anxiety	5 or more types	1-2 types	–1.165*	0.000
Information collection anxiety	5 or more types	None	–1.089*	0.000
Information acquisition anxiety	5 or more types	3-5 types	–1.065*	0.000

Dependent variable	AI tool use type (<i>I</i>)	AI tool use type (<i>J</i>)	Mean difference (<i>I</i> – <i>J</i>)	Significance
Information acquisition anxiety	5 or more types	1-2 types	–.989*	0.000
Information acquisition anxiety	5 or more types	None	–1.118*	0.000

Table 7 (continued)

Dependent variable	AI-tool use category (I)	AI-tool use category (J)	Mean difference (I–J)	Significance
Information screening anxiety	5 or more types	3-5 types	–.912*	0.000
Information screening anxiety	5 or more types	1-2 types	–.764*	0.001
Information screening anxiety	5 or more types	None	–.874*	0.002
Information evaluation anxiety	5 or more types	3-5 types	–.920*	0.000
Information evaluation anxiety	5 or more types	1-2 types	–.713*	0.004
Information evaluation anxiety	5 or more types	None	–.614*	0.034
Information evaluation anxiety	3-5 types	1-2 types	.208*	0.037
Information use anxiety	5 or more types	3-5 types	–1.087*	0.000
Information use anxiety	5 or more types	1-2 types	–.999*	0.000
Information use anxiety	5 or more types	None	–1.121*	0.000

Dependent variable	AI-tool use category (I)	AI-tool use category (J)	Mean difference (I-J)	Significance
Mean information anxiety score	5 or more types	3-5 types	-1.003*	0.000
Mean information anxiety score	5 or more types	1-2 types	-.914*	0.000
Mean information anxiety score	5 or more types	None	-.968*	0.000

3.4.3 Self-assessment of AI influence

An ANOVA was conducted with self-assessment of AI influence as the independent variable. The results showed that it had no significant effect on overall academic information anxiety ($p = 0.504$). Further tests of each anxiety dimension found that the significance levels for retrieval strategy anxiety ($p = 0.078$), information collection anxiety ($p = 0.331$), information acquisition anxiety ($p = 0.696$), information screening anxiety ($p = 0.614$), information evaluation anxiety ($p = 0.625$), and information use anxiety ($p = 0.260$) were all greater than 0.05, indicating that self-assessment of AI influence had no significant effect on any anxiety dimension.

In summary, within the module on AI-tool use, AI use frequency significantly affects the dimensions of academic information acquisition anxiety, information evaluation anxiety, and information use anxiety; the types of AI tools used have significant effects on all six anxiety dimensions; whereas self-assessment of AI influence is not significantly correlated with any dimension. Therefore, Hypotheses 5 and 6 are supported, while Hypothesis 7 is not supported.

4 Discussion

Overall, nearly half of university students experience moderate or severe academic information anxiety in the AI environment. The overall level of anxiety is slightly lower than that found in previous studies^[27], possibly because AI has improved the efficiency of academic information processing and thereby alleviated academic information anxiety. However, this study found that information evaluation anxiety was the most prominent anxiety dimension across all types of analysis. Although academic information is more conveniently obtained in the AI era, university students are more concerned about the reliability and accuracy of results.

4.1 Analysis of variables with significant effects

Among individual background factors, age and discipline, and among AI-use factors, use frequency and use category, significantly affect university students' academic information anxiety. The relationships between the influencing factors and academic information anxiety are shown in Figure 1.

Text in the figure:

Individual background: age; discipline.

AI use status: use frequency; use category.

Academic information anxiety among university students in the AI environment: retrieval strategy anxiety; information collection anxiety; information acquisition anxiety; information screening anxiety; information evaluation anxiety; information use anxiety.

Visible connection labels include: $p = 0.010^*$, $p = 0.108$, $p = 0.004^*$, $p = 0.090$, $p = 0.036^*$, $p = 0.015^*$, $p = 0.181$, $p = 0.168$, $p = 0.128$, $p = 0.042^*$, $p = 0.016^*$, $p = 0.136$, $p = 0.160$, $p = 0.018^*$, $p = 0.196$, $p = 0.042^*$, $p = 0.014^*$, $p = 0.000^*$, $p = 0.000^*$, $p = 0.000^*$, $p = 0.002^*$, $p = 0.002^*$, and $p = 0.000^*$.

Figure 1 Model of factors influencing university students' academic information anxiety in the AI environment

4.1.1 Age and discipline Regarding age, this study found that, overall, the level of information anxiety in the AI environment is negatively correlated with age: younger people have grown up in the information age and, although they are highly receptive to new things and strongly willing to try them, they have not yet formed mature information-processing systems. Therefore, when faced with the massive amount of information brought by AI, they lack effective retrieval strategies, have difficulty rapidly screening and using information, and are more likely to fall into anxiety. Older groups, by contrast, draw on their prior experience in academic information processing; when facing AI-generated information of uneven quality, they have stronger judgment and processing abilities, and their anxiety levels are relatively lower.

Disciplinary category has a significant effect on academic information anxiety in the AI environment. Differences in the research characteristics and information needs of different disciplines directly lead to differentiation in anxiety levels. Disciplines such as law and engineering have extremely high requirements for the accuracy, rigor, reliability, and authority of information; therefore, these

Students in these disciplines, when facing the uncertainty and quality differences of AI-generated content, are more likely to experience stronger anxiety due to the pressure of information verification and screening.

4.1.2 Frequency and Types of AI Tool Use The frequency of AI tool use has a significant impact on academic information anxiety, with the overall level of anxiety showing a pattern of "higher in the middle and lower at both ends."

The group whose frequency of use is close to 3 times per month has the highest anxiety level, whereas ultra-high-frequency users who use AI tools more than 10 times per day have significantly lower anxiety than the other groups; this is especially prominent in the dimension of search-strategy anxiety. This may be because high-frequency users are more familiar with tool characteristics and have richer relevant experience, enabling them to conduct academic research more efficiently with the help of AI, and therefore experience lower levels of anxiety.

In addition, the compatibility between the types of AI tools used and users' own information literacy affects undergraduates' level of academic information anxiety in the AI environment. This study found that the mean anxiety value changes approximately in an inverted-U shape as the number of types of AI tools used increases: specifically, undergraduates who use more than 5 types of AI tools have the lowest anxiety level; the group using 3-5 types has the highest mean anxiety value; and the group using fewer than 3 types falls between the two. Undergraduates using more than 5 types of AI tools usually have a stronger desire to explore AI tools or richer experience in using them. The higher users' information literacy, the better they can select and complement AI tools according to their needs, thereby improving information-processing efficiency; thus their anxiety level is the lowest. By contrast, although undergraduates using fewer than 3 types may not necessarily have outstanding information literacy, the smaller number of tools reduces the difficulty of screening and organizing information and alleviates information overload, so their anxiety is relatively mild. Undergraduates using 3-5 types of AI tools often have higher usage needs, but are constrained by their own information literacy or are still in the exploratory stage of tool use. Unable to skillfully control multiple AI tools, they are prone to falling into decision-making dilemmas when facing multi-source AI-generated information, which in turn intensifies their anxiety.

In summary, the fit between individual information-processing ability and tool-use strategies, together with personal factors such as age and discipline, jointly constitutes important factors influencing the level of academic information anxiety in the AI era.

4.2 Analysis of Variables with No Significant Impact

Among the 7 independent variables, gender, educational attainment, and self-assessed AI impact did not have a significant effect on undergraduates' academic information anxiety. This result differs from some previous studies.

4.2.1 Gender and Educational Attainment Previous studies hold that gender is an important factor affecting academic information anxiety; compared with men, women are more likely to experience anxiety in information tasks

. However, this study found that in the AI environment, gender has no significant effect on academic information anxiety. This difference may be related to changes in social attitudes: as the concept of gender equality deepens, differences in mindset among undergraduates of different genders in information processing are gradually narrowing.

With regard to educational attainment, conventional understanding holds that higher educational attainment is usually accompanied by the accumulation of individual experience, the growth of skill reserves, and mental maturity, which will synchronously reduce the level of academic information anxiety

21

. However, in the AI era, large language models represented by Chat-GPT can rapidly process massive amounts of information and shorten the cycle of knowledge accumulation

28

; moreover, their low-threshold characteristics have narrowed the digital access divide and the usage divide

29

. This enables AI technology to break down the knowledge barriers constructed by educational attainment, bringing groups with different educational backgrounds closer to the same starting point. In this context, external factors such as the friendliness of tool-interaction design and the complexity of the information environment exert an influence that exceeds differences in educational attainment, thereby resulting in no significant correlation between educational attainment and anxiety level.

4.2.2 Self-Assessed AI Impact Regarding self-assessed AI impact, this study found that it does not have a significant effect on academic information anxiety. This may be because individuals' subjective evaluation of the impact of AI tools more often reflects their attitudes and perceptions; it is not linked to factors such as individual information literacy and the external information environment, and may not directly translate into anxiety experiences. Therefore, it is difficult for it to affect the state of academic information anxiety.

Overall, academic information anxiety among undergraduates is widespread in the AI era. Information-evaluation anxiety caused by problems such as erroneous information, poor quality, delayed updates, repetitive content, and irrelevance profoundly affects undergraduates' anxiety levels. At the same time, the differentiation of information needs brought about by disciplinary differences, as well as the complex associations among age, frequency of AI tool use, types of AI tools used, and individual information literacy, also jointly influence undergraduates' academic information anxiety.

5 Implications

5.1 Taking Account of Multidimensional Differences in Anxiety and Providing Personalized Coping Strategies

This study shows that age and discipline have significant effects on the dimensions of undergraduates' academic information anxiety in the AI environment, whereas gender and educational-attainment differences do not show significant effects. Therefore, for undergraduates of different ages and disciplines, universities should implement targeted measures based on their actual needs.

In terms of age, undergraduates aged 18-24 have a high acceptance of new things, but they have not yet formed a mature information-processing system; their anxiety levels in the dimensions of search strategies and information acquisition are significantly higher than those of the 25-45 age group. For the 18-24 age group, universities may offer specialized AI literacy courses, systematically teaching topics such as the operational logic of AI tools and methods of information identification, so as to help them build a sound information-processing system. For the 25-45 age group, emphasis may be placed on training in basic hands-on operation of AI tools and scenario-based academic applications, further meeting their academic research needs.

In terms of discipline, engineering and law undergraduates show relatively high levels of academic information anxiety in the AI environment, with anxiety especially prominent in the three dimensions of information use, information evaluation, and information screening. Teaching in engineering majors may focus on cultivating capabilities in AI-assisted literature retrieval and experimental data processing, guiding undergraduates to use AI to improve the efficiency of retrieval and experimental data processing, so that AI can efficiently support engineering design and problem solving. For law undergraduates, it is necessary to strengthen integrated teaching of AI and legal databases.

For legal studies, emphasis should be placed on guiding students to use AI to screen legal cases and statutory documents that are both authoritative and timely, so as to alleviate the pressure of information verification and selection.

5.2 Cultivating College Students' Ability to Evaluate and Use Academic Information in an AI Environment

This study found that 82.2% of college students experience academic information anxiety to varying degrees. Among these, information-evaluation anxiety caused by problems such as errors in AI-generated information, uneven quality, and delayed content updates is the most prominent. At the same time, ultra-high-frequency users who use AI tools more than 10 times per day show significantly lower anxiety levels in dimensions such as information evaluation and information acquisition than medium- and low-frequency users. This indicates that proficient tool use and information-evaluation competence are key to alleviating academic information anxiety.

Accordingly, universities should optimize cultivation pathways based on AI-enabled academic scenarios. On the one hand, they should offer targeted courses related to AI information evaluation, enabling college students to gradually develop critical thinking through systematic learning and improve their ability to identify and evaluate AI-generated information. On the other hand, they should build diversified practice platforms to strengthen students' ability to use information. Through academic forums, practical competitions, and other activities, students can be guided to use AI to complete tasks such as academic information collection and organization, thereby consolidating their theoretical foundations and improving their proficiency in tool use. By enhancing college students' comprehensive ability to use academic information in an AI environment, academic information anxiety can be effectively alleviated.

5.3 Building an AI + Information Literacy Education System to Improve the Efficiency of Multi-Source Information Integration

This study shows that both the frequency and the variety of AI tool use significantly affect academic information anxiety. In terms of frequency, ultra-high-frequency users who use AI more than 10 times per day have significantly lower anxiety levels than other groups, whereas medium-frequency users who use AI three times per month show more severe information anxiety. In terms of variety, college students who use more than five AI tools score significantly lower across all anxiety dimensions; however, the information-use anxiety of the group using three to five tools is higher than that of the group using one to two tools. This demonstrates the key role of the fit between tool use and information literacy.

Therefore, universities need to build a tiered and adaptive AI + information literacy cultivation system to precisely improve the efficiency of multi-source information integration. A tiered teaching model may be adopted: at the basic level, all college students should be taught general content such as basic AI tool operations and information-retrieval norms; at the advanced level, medium- and high-frequency users should receive strengthened training in information-screening skills and in the ability to integrate multi-source information in complex scenarios. At the same time, an adaptive guidance mechanism for AI tool use should be established. Through AI literacy assessments, personalized tool recommendation lists can be matched to college students, preventing them from blindly pursuing a larger number of tools. Ultimately, this will enable a precise fit between information-processing ability and tool-use strategies, reducing college students' academic information anxiety.

6 Conclusion

The accelerated arrival of the AI era has brought convenience to college students' study and work while also presenting new challenges. By improving the diagnostic scale for college students' academic information anxiety, this paper measured and analyzed the new characteristics of college students' academic

information anxiety in the AI era from the two aspects of degree and dimension, analyzed the effects of individual background and AI use on each anxiety dimension, and proposed implications based on data analysis.

The theoretical contributions of this paper mainly include three points. First, it revises the traditional understanding of the influencing factors of academic information anxiety, pointing out that in the AI era, discipline and age are key factors affecting academic information anxiety, whereas gender and educational level do not show significant effects. Second, it reveals the association between AI-use behavior and academic information anxiety, indicating that the fit between individuals' information-processing ability and their tool-use strategies is an important factor influencing college students' academic information anxiety in an AI environment. Third, it identifies the central position of information-evaluation anxiety, showing that college students' ability to evaluate and judge information is a core factor affecting their own anxiety status. Its practical contribution lies in providing a basis for universities to formulate AI literacy and information literacy course plans for students of different ages and disciplines around different anxiety dimensions, while also offering a feasible reference for universities to improve students' information-evaluation and application abilities.

The limitations of this paper are as follows: the total questionnaire sample size is not large enough; the respondents are mainly concentrated among economics and management majors and undergraduate students; the research results are susceptible to the influence of extreme values; and the discussion of the complex relationships among the indicators remains to be deepened. When drawing on the relevant conclusions, it is necessary to consider actual scenarios and pay attention to applicable conditions and boundaries.

In future research, more diversified online questionnaire data can be used to construct more generalizable quantitative indicators and to continue exploring the psychology and behavior of college students when handling academic information tasks in an AI environment.

References

- [1] Han J, Yoo H, Kim Y, et al. RECIPE: how to integrate ChatGPT into EFL writing education[C]. New York: Association for Computing Machinery, 2023:416-420.
- [2] Alkaissi H, McFarlane S I. Artificial hallucinations in ChatGPT: implications in scientific writing[J]. Cureus, 2023(2):e35179.
- [3] Chen Lanjie, Wu Lanbing, Xu Fang. Research on information anxiety: a systematic analysis of manifestations, causes, consequences, and interventions[J]. Digital Library Forum, 2025(4):50-60.
- [4] Wurman R S. Information anxiety[M]. New York: Doubleday, 1989:356.

- [5] Li Yuling, Cao Jindan. Defining the concept of information anxiety[J]. *Research on Library Science*, 2011(3):2-4.
- [6] Shen Litian, Lu Quan, Cao Gaohui, et al. Research on users' information anxiety in the process of academic information seeking[J]. *Information Science*, 2021(6):143-151.
- [7] Xia Ru. Research on influencing factors of information anxiety in master' s students' academic information searching[D]. Dalian: Liaoning Normal University, 2024.
- [8] Wang Shuyi, Zhang Qingwei. Opportunities and challenges brought by ChatGPT to researchers[J]. *Library Tribune*, 2023(3):109-118.
- [9] Zhao B, Chen M, Lin R, et al. Influence of information anxiety on core competency of registered nurses: mediating effect of digital health literacy[J]. *BMC Nursing*, 2024(1):626.
- [10] Naveed M A, Anwar M A. Towards information anxiety and beyond [J]. *Webology*, 2020(1): 65-80.
- [11] Zhou Maochun, Gao Yuyuan. Artificial intelligence alleviating users' information anxiety: A case study of ChatGPT [J]. *Journal of Academic Library and Information Science*, 2024(3): 80-89.
- [12] Arnold M, Goldschmitt M, Rigotti T. Dealing with information overload: a comprehensive review [J]. *Frontiers in Psychology*, 2023: 1122200.
- [13] Dong Huanqing, Cao Gaohui, Pang Pei. The formation path of users' information-seeking behavior with generative AI tools: From the perspective of digital literacy and artificial intelligence literacy [J]. *Library Tribune*, 2025(10): 152-160.
- [14] Bawden D, Robinson L. The dark side of information: overload, anxiety and other paradoxes and pathologies [J]. *Journal of Information Science*, 2009(2): 180-191.
- [15] Zhou Tao, Li Songzhao, Deng Shengli. Research on users' intention to shift information seeking: From search engines to generative AI [J]. *Library and Information Service*, 2024(3): 49-58.
- [16] Yu Wenqing, Song Xianping, Cao Yuchi. Research on the mechanism by which information cocoons affect college students' information literacy [J]. *Journal of Higher Education Management*, 2025(1): 113-124.
- [17] Zhou Ziqi, Gao Fei, Fang Chunhui, et al. Risk analysis and countermeasure research on college students' AI dependence: Based on Bloom' s taxonomy of cognition [J]. *Journal of Yunnan Minzu University (Natural Sciences Edition)*, 2025(3): 363-368.
- [18] Liu Siqu, Kuang Miaomiao, Xiao Yue, et al. Research on the influencing mechanism of researchers' information anxiety in the AIGC context [J]. *Library*

and Information Service, 2024(11): 123-135.

[19] Qian Qianwen, Li Chunxing, Wang Dongyi, et al. The boat of anxiety in the AI era: An exploration of the mechanism generating information anxiety in the use of ChatGPT [J]. *Journal of the National Library of China*, 2024(4): 42-53.

[20] Feng Juxin. Research on the factors influencing college students' information anxiety in the context of conflicting health information [D]. Wuhan: Central China Normal University, 2024.

[21] Li Chao. A study on intergenerational differences in public information anxiety and mitigation strategies: From the perspective of libraries [J]. *Library Work and Study*, 2020(12): 10-18.

[22] Xu Linlin, Hu Jiehui, Su Yang. A study of learners' cognition and behavior in AI-assisted academic English writing [J]. *Foreign Language World*, 2024(3): 51-58.

[23] Liu Kai. Research on the application of generative AI tools in innovating college students' learning models [J]. *University Education*, 2025(3): 70-74, 101.

[24] Balbinotti S, Mielniczuk de Moura A M. Ansiedade informacional em alunos de curso preparatório para ingresso no ensino superior: um estudo no Emancipa da unidade Centro Histórico de Porto Alegre [J]. *Revista Ibero-americana de Ciência da Informação*, 2021(1): 171-193.

[25] Shen Yutian. An empirical study of users' information anxiety in academic search [D]. Wuhan: Central China Normal University, 2020.

[26] Guo Yajun, Liu Zhenyang, Guo Yijun, et al. Research on information needs of college-student AIGC users: A case study of ChatGPT [J]. *Information Science*, 2024(8): 34-44.

[27] Quan Zhaojuan, Xu Xin, Mao Lu. The status of information anxiety among university teachers and students and countermeasures [J]. *Library Research and Work*, 2024(9): 58-66, 74.

[28] Lü Naiji. Barriers to knowledge sharing and ChatGPT [J]. *Innovation*, 2023(6): 108-116.

[29] Zhang Xiaoyan, Lei Miao. Challenges faced by library services in artificial intelligence scenarios and coping strategies [J]. *Library and Information*, 2024(6): 113-121.

Influencing Factors and Coping Strategies of College Students' Academic Information Anxiety in the AI Environment

Tong Zhaojuan¹ Zhu Zhu² Yang Qianhui³

1. Shanghai University of Finance and Economics Library, Shanghai, 200433

2. School of Finance of Shanghai University of Finance and Economics, Shanghai, 200433

3. College of Civil Engineering and Architecture of Shandong University of Science and Technology, Qingdao, 266590

Abstract The rapid iteration and widespread application of AI technology have led to an explosion of academic information, which causes academic information anxiety among college students in their academic pursuits. Focusing on the new characteristics of college students' academic information anxiety in the AI environment, this paper presents the level and dimensions of students' anxiety based on 528 valid questionnaires. Through questionnaire survey and data analysis, this study revises the traditional model of factors influencing information anxiety. It shows that age and academic discipline have significant effects on college students' academic information anxiety in the AI environment, while gender and educational background exhibit no significant differences. In addition, this study explores the relationship between college students' AI usage and the dimensions of academic information anxiety, revealing that the compatibility of individual information processing ability with tool use strategies is key to alleviating academic information anxiety. These findings provide strategic references for universities to build an AI-enhanced information literacy education system and carry out stratified AI literacy and information literacy instruction targeting students' anxiety characteristics across different disciplines and age groups.

Keywords AI environment; Academic information anxiety; AI literacy; Information literacy; Influencing factors; College students

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv. Machine translation. Verify with the original.