RESEARCH ARTICLE

Historical Mission and Life Initiatives of College Students in the New Era: Employment Choices and Employment Psychology - Based on Questionnaires and Interviews from 31 Universities Nationwide

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Abstract

Against the background of digital transformation, industrial upgrading, and increasingly uncertain labor-market conditions, university students are expected to make career decisions that require both technological competence and market adaptability. This study examines university students' employment choices and employment psychology by combining bibliometric analysis, questionnaires, and semi-structured interviews from 31 universities. CiteSpace was used to identify research trends related to university employment, while interview materials from 150 students were analyzed with NVivo to identify recurring psychological patterns in career decision-making. The findings show that students attach strong importance to employment stability, income security, urban development opportunities, and work-life balance. At the same time, students with stronger digital skills, foreign-language ability, and practical experience appear more open to market-oriented sectors, technology-intensive jobs, flexible employment, and entrepreneurship. The study further identifies several psychological tensions, including the gap between ideal expectations and labor-market reality, dependence on family or university resources, hesitation in the face of uncertain career options, and anxiety after job-search setbacks. Based on these findings, the study proposes a multi-level support framework involving public policy, universities, enterprises, families, and students. The framework emphasizes technology-enabled career guidance, university-enterprise collaboration, accurate labor-market information, psychological resilience, and social responsibility in order to improve graduate employability and career quality.

Keywords: University students, technological literacy, market adaptability, employment psychology, social responsibility.

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1 Introduction

Digital transformation is reshaping the relationship between higher education and the labor market. Emerging technologies, platform-based employment, artificial intelligence applications, and the rapid upgrading of industrial structures have created new career opportunities for university graduates. At the same time, they have increased uncertainty in career decision-making by changing skill requirements, recruitment standards, and the organization of work [10, 29]. Recent research further suggests that AI-driven labor-market transformation is raising the importance of employability skills, digital literacy, adaptability, and curriculum-industry alignment [4, 27]. The transition from university to work is a key stage in young people's life development. Students must evaluate their own interests, knowledge base, technical skills, family expectations, regional preferences, and perceptions of market risk. In a technology-driven economy, employability is also influenced by students' career adaptability, self-confidence, and capacity to translate academic learning into workplace competence [14, 25].

Existing research has examined graduate employment pressure, career guidance, entrepreneurship education, and psychological stress. However, many discussions remain descriptive and tend to focus mainly on employment rates or administrative support. Less attention has been paid to how students understand technology-driven labor-market change and how their psychological responses influence career choices [5, 9, 18, 28]. Based on questionnaires and interviews from 31 universities, this study explores university students' employment choices and employment psychology from a social psychological perspective. It seeks to answer three questions. First, what research trends have emerged in studies of university student employment in recent years? Second, what preferences and psychological patterns characterize students' employment decision-making? Third, how can universities, enterprises, families, and public institutions work together to improve students' technological competence, market adaptability, and career resilience? By addressing these questions, this study aims to provide practical implications for high-quality employment and student development in a rapidly changing society.

This study draws on Social Cognitive Career Theory [15, 16] as its primary theoretical framework. SCCT posits that career choices are shaped by the interaction of self-efficacy beliefs, outcome expectations, and contextual supports and barriers. In a technology-driven and institutionally complex environment such as that facing Chinese university graduates, SCCT provides a useful lens for understanding how students' internal psychological states interact with external market signals, family expectations, and institutional resources to produce particular employment orientations. The framework also informs the multi-level support structure proposed in Section 6, connecting individual agency with systemic conditions.

2 Practical Demands: Technology-Driven Employment Challenges and Career Choices

Employment remains a central issue for students, families, universities, and society. As higher education expands, the number of graduates entering the labor market continues to increase, while employers' demand for digital skills, interdisciplinary knowledge, and practical problem-solving ability is also rising. This creates a more complex transition from education to employment and places greater pressure on universities to improve students' employability [1, 11, 20]. Employer-side and graduate-focused evidence also shows that digital skills and AI-related competencies are increasingly tied to employability and perceived employment quality [4], a trend that has been conceptually grounded in earlier frameworks of AI literacy [23].

2.1 Research trends in university student employment

This study first used CiteSpace to analyze academic literature related to university student employment over the past decade. The keyword clustering results indicate that the research field has gradually moved from a narrow concern with employment rate toward broader topics such as employment quality, employability, innovation and entrepreneurship, market demand, and student development [3]. Two features are particularly important. First, the background of employment research has become more closely connected with economic transformation and technological development. As industries adopt digital tools and intelligent systems, graduates are expected to possess stronger technical literacy and greater adaptability to changing work requirements [10, 29].

As shown in Figure 1, university development, higher education, innovation and entrepreneurship, university social services, academic development, and

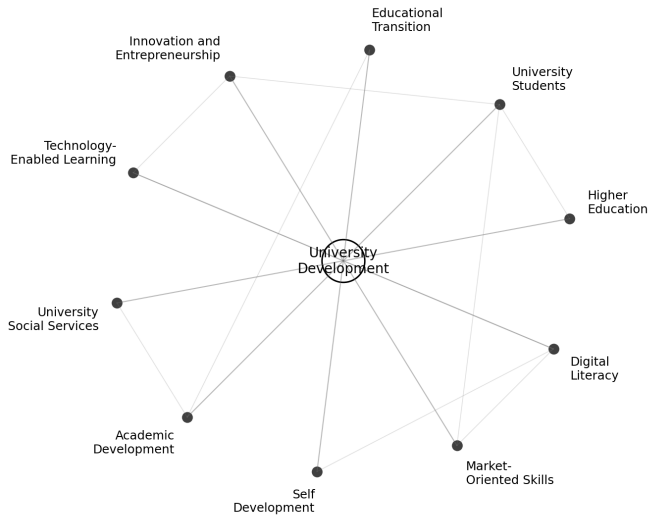

Figure 1. High-frequency keyword information analysis map.

student self-development are closely connected in the literature. These themes suggest that student employment is increasingly discussed as part of the broader transformation of higher education and social development.

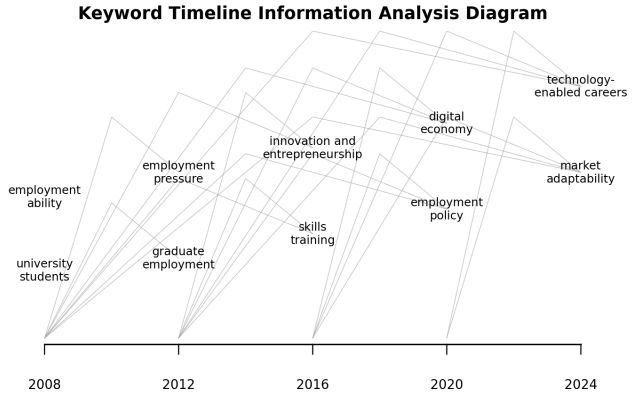

Figure 2. Keyword timeline information analysis map.

As shown in Figure 2, the keyword timeline further shows a movement from early concerns about employment ability and employment pressure toward more recent concerns about innovation, entrepreneurship, employment policy, digital economy, and market adaptability. This evolution is consistent with the growing importance of technology-enabled work and skill-based competition in the graduate labor market. It also echoes recent systematic and bibliometric evidence showing that employability programs, soft skills, and labor-market outcomes remain central concerns in higher education research [26, 30].

2.2 Questionnaire design and data collection

A structured questionnaire was developed to assess students' employment preferences, sector choices, regional priorities, and psychological orientations toward career decision-making. The questionnaire comprised four sections: (1) demographic information; (2) employment goal preferences measured on a five-point Likert scale (1 = not important at all, 5 = extremely important); (3) preferred employment sectors and geographic choices; and (4) self-assessed digital and language skill levels. The questionnaire was piloted with 20 students from two universities not included in the main sample, and minor wording adjustments were made based on their feedback. A total of 1,240 questionnaires were distributed across 31 universities via both online platforms and on-site administration. After removing incomplete responses, 1,187 valid questionnaires were retained, yielding a response rate of 95.7%. Descriptive statistics and frequency analyses were conducted using SPSS 26.0.

2.3 Interview sample and analytical procedure

To examine students' employment preferences and psychological responses more directly, the research team conducted semi-structured interviews with 150 university students from 31 universities. The sample included students from different regions, education levels, and disciplines, as summarized in Table 1. The interviews focused on job-search channels, employment goals, career expectations, preferred sectors, regional preferences, perceived skill gaps, family influence, and psychological pressure during career decision-making.

Due to differences in location and public-health conditions at the time of data collection, some interviews were conducted offline and others online. Each interview lasted approximately 40–60 minutes and was audio-recorded with participants' consent. Recordings were transcribed verbatim prior to analysis.

The coding process produced five recurring categories of employment mindset: steady progress, indifference, balance, doubt, and self-satisfaction. These categories reflect different ways in which students respond to employment uncertainty, labor-market competition, family expectations, and the need for self-development. In the interview excerpts below, the first letter (A or B) denotes university type (A: 985/211 universities; B: other universities), the second letter (X or Y) denotes gender (X: female; Y: male), and the number identifies

the individual participant.

To ensure coding reliability, two independent coders analyzed a randomly selected subset of 30 interview transcripts (20% of the total sample). Inter-coder reliability was assessed using Cohen's kappa, yielding a coefficient of 0.81, which indicates strong agreement [31]. Discrepancies were resolved through discussion until consensus was reached. The remaining transcripts were then coded by the primary researcher following the agreed coding framework. Member checking was also conducted with eight participants to verify the accuracy of interpretations.

3 Results Analysis

3.1 Preference for stability and predictable development

At present, university students navigate a tension between career idealism and pragmatic necessity, demonstrating a clear preference for stable and predictable career paths over higher-risk alternatives. The survey found that students' preferences for the goals of "salary and benefits", "settlement policy" and "work-life balance" were higher than their preferences for the goals of "playing up hobbies and interests" and "matching the right job". The most typical is the mentality of "system preference", in which students' willingness to choose to work in government agencies, public institutions, and state-owned central enterprises is significantly higher than that of foreign enterprises, private enterprises, and entrepreneurship. The overall preference for the ideal employment unit target of "within the system" has also gradually shifted from "civil servant fever" to favoring strategically important state enterprises and institutions, with 31 students (20.7%) who explicitly expressed their willingness to enter the "system", and 22 (14.7%) chose institutions or state-owned enterprises. As for employment outside the system, students preferred large and medium-sized enterprises as a whole (BX06). At the same time, the degree of willingness to work for foreign enterprises decreased significantly, and the willingness to work for private enterprises increased (AY06, BY09). Further comparison reveals that female students are more willing to choose to work in the system than male students; students with relatives working in the system are more willing to choose to work in the system; college students who grew up in rural areas are more inclined to work in government organizations than those who grew up in urban areas; students with higher technical skills, such as foreign languages and computers, are more inclined to work outside the system.

The interviews show that many university students remain highly sensitive to employment stability. Their preferred employment goals often include salary and benefits, settlement opportunities, job security, and work-life balance. Compared with more uncertain choices such as entrepreneurship or highly competitive private-sector positions, stable employment is often perceived as a safer path for reducing risk and meeting family expectations. This preference does not mean that students lack ambition. Rather, it reflects a psychological response to uncertainty in the labor market. When students perceive that job competition is intense and that future development is difficult to predict, stable employment becomes a way to manage risk. The result is a pragmatic career orientation shaped by market uncertainty, perceived employability, and family expectations [7, 19, 24].

3.2 Desire for simplified job-search processes

A notable pattern across the interview data is students' tendency to rely on institutional and relational resources rather than engaging in proactive, self-directed job search. Analysis of the interview materials found that close to 30% of students reported that social relations played a more important role in finding a suitable career. "We would go to the briefing sessions in advance because the counselors would inform us in advance." (BY22) "I think the most effective way to find a job is to have a centralized job fair at school." (AY12) "Why do you need to work hard on your own if you have connections, besides, it's already difficult for girls to find a job, especially for us engineering majors who have to rely on some connections at home." (BX08) Further analyzing the emergence of this "lying flat" (*tangping*) mentality, the main manifestations are: First, the "command dependence" of the employment policy. Many students hope that the state can directly introduce relevant policies to ensure their own employment, but also hope that others can help them quickly and smoothly find their favorite jobs. For example, they hope that the school can really recommend employment enterprises, hope that their supervisors would directly provide case examples, and some even expect teachers to submit résumés on their behalf. "I think the school can give us resume templates so we can just fill in the information in without having to think hard." (BY24) "Career guidance courses may not be that useful, I think the school can contact companies directly and pass our information to them." (BY18)

Table 1. Basic information of interviewed university students.

Category	Group	Number	Share	Description
University type	985/211 universities	78	52.0%	Students from more selective universities
University type	Other universities	72	48.0%	Students from non-985/211 universities
Gender	Male	73	48.7%	Interviewed students coded as Y
Gender	Female	77	51.3%	Interviewed students coded as X
Region	Guangxi	79	52.7%	Offline interviews were mainly used
Region	Other provinces	71	47.3%	Online interviews were mainly used
Education level	Undergraduate	82	54.7%	Bachelor-level students
Education level	Postgraduate	68	45.3%	Master-level students
Discipline	Social science / natural science	150	100%	Students from different disciplinary backgrounds

Secondly, "geographical dependence" in the choice of employment area. The survey found that students gave priority to "more prosperous and rapidly developing cities", "heading to Guangzhou", "second-tier cities with convenient transportation", "city where they graduated from university", "home town", etc. "I feel that I should be able to find a better job in Guangdong, and Guangdong is a big city, so the future development prospect must be very good." (AY10) "I'll look for a job in Beijing first, I'll have more face when I tell others, and if I can't find one, I'll go back to my hometown to look for a job." (AX07).

Another theme is students' desire for clear, convenient, and reliable job-search channels. Some students prefer campus recruitment, centralized job fairs, university recommendations, and direct information from counselors or teachers. These channels reduce uncertainty and transaction costs during job search. However, excessive dependence on ready-made resources may weaken students' initiative, especially when they expect universities or families to solve most employment difficulties for them. From a market perspective, this indicates the importance of transparent employment information and early career preparation. Students need not only job information but also the ability to evaluate job quality, understand employer requirements, compare industry prospects, and present their own skills effectively. Career management skills are therefore a key component of graduate employability [2, 6].

3.3 Integration of personal goals and social contribution

Contemporary university students tend to hold relatively settled career expectations, while simultaneously demonstrating openness to innovative and non-traditional career paths. They seek meaningful career development and hope to find work that aligns with both their personal strengths and broader social expectations. The interviews suggest that students are motivated to present an authentic professional identity during job applications while simultaneously seeking external validation and peer recognition. When confronted with career advice that conflicts with their own preferences, students generally display a conciliatory attitude, attempting to reconcile competing expectations rather than asserting unilateral choices. This orientation, however, frequently gives rise to indecision and avoidance when employment decisions must actually be made. "I got an offer from a company with pretty good strength, and what I studied is also in this area, the position is also what I prefer, but my parents want me to go to graduate school, graduate students out of the development prospects will be greater, I think what my parents said also has a point, I really don't know how to choose." (BY17) "I quite want to continue to work in this company, I have my own unique way of learning about this area of technology, but I heard my schoolmates say that this position doesn't have good development prospects, so I'm very torn." (AY02) In the face of career choices, college students often feel panicked if they don't follow the crowd. Many students in the interviews had dilemmas such as "being questioned about their career choices by people around them", "hoping to find a job with high development potential, but popular careers are very competitive", and felt anxious and uneasy. "Now I'm a little bit doubtful about my choice, I've received an offer from a company with a good salary, but other students in our major didn't choose this position, and I don't know if I've made the right choice." (BY20)

Students' future career expectations also show a combination of personal and social considerations. Many students hope to realize their own value, obtain recognition from others, and find work that is consistent with their interests and abilities. At the same time, they do not view employment as purely individual. They often consider family expectations, peer opinions, regional development

opportunities, and the social value of their chosen careers. This interaction can create psychological conflict when students must choose between an attractive job offer, further study, family advice, and uncertainty about long-term development. Such conflict is especially common when students face new occupations or technology-related sectors whose future development is promising but difficult to evaluate. For example, students may be interested in data analysis, platform work, digital marketing, intelligent manufacturing, or technology services, but they may also worry about skill obsolescence, job instability, or insufficient preparation. These concerns reflect the growing connection between digital competence, AI-related readiness, and broader twenty-first-century employability [4, 29], a relationship that has been conceptually grounded in earlier frameworks of AI literacy [23].

3.4 Technology, regional mobility, and skill development

Technological advancement and talent competition have become central to national development strategies worldwide. In China, the rapid upgrading of industrial structures has made the employment of university graduates increasingly prominent on the policy agenda. At the same time, the economic disruptions caused by the COVID-19 pandemic accelerated industrial restructuring and intensified graduate employment pressure, contributing to a growing mismatch between graduates' employment expectations and available labor-market opportunities [18].

Despite abundant graduate supply, qualified candidates willing to work at the grassroots level remain scarce. A strong preference for urban public-sector employment continues to characterize the career orientations of many Chinese graduates. In response to this urban concentration bias and the persistent regional development imbalance across China, the government has introduced targeted policies to encourage graduates to pursue careers in rural and grassroots settings [17], aiming to redirect graduate talent toward underserved regions and strengthen graduates' sense of social responsibility.

Technology has become a major factor affecting students' employment choices. Students with stronger digital skills often perceive more career options, while those with weaker skills may prefer familiar and stable paths. Regional preference is also closely connected with market perception. Many students prefer large cities because they believe that large urban labor markets provide more information, higher salaries, stronger industry clusters, and better long-term development opportunities. However, excessive concentration in large cities may intensify competition and create mismatches between student expectations and available positions. A balanced view is therefore needed. Students should be encouraged to evaluate regional opportunities based on industry structure, technology resources, cost of living, career development space, and personal growth potential. At the same time, universities should provide more information about opportunities in different regions and sectors, including small and medium-sized cities, technology parks, public-service organizations, and emerging industries. Recent research also suggests that micro-credentials, flexible training, and AI-oriented skill development may help students build more adaptive employability portfolios for changing labor markets [21, 27]. This can help students avoid a single pathway mentality and improve the quality of employment decisions.

4 Theoretical Exploration: Employment Psychology under the Technology-Market-Society Interaction

4.1 Internal Psychological Mechanisms and External Market Signals in University Students' Career Decision-Making

The employment choices of university students are shaped by both internal psychological factors and external environmental conditions. Internally, students evaluate their interests, abilities, confidence, values, and risk tolerance. Externally, they respond to labor-market structure, industry demand, family resources, university support, and social expectations. A social psychological perspective is useful because it explains how students' perceptions of the environment influence motivation, decision-making, and emotional responses during the job-search process.

In a relatively stable labor market, students may rely on traditional career paths and familiar employment information. In a rapidly changing market, however, they must interpret uncertain signals: which industries are growing, which skills are valued, and which positions provide sustainable development. Social cognitive career theory suggests that career choices are shaped by self-efficacy, outcome expectations, and contextual supports or barriers [15, 16].

Such uncertainty increases the importance of career

self-efficacy, information-processing ability, and adaptability. Students who can actively collect market information, reflect on their strengths, and adjust their goals are more likely to make effective choices. The interviews suggest that students' employment psychology is not simply optimistic or pessimistic. Many students are pragmatic: they desire stability but also want personal growth; they respect family advice but also hope to maintain autonomy; they value income but also consider work meaning and social contribution. These mixed orientations should be understood as a rational response to a complex labor market rather than as a lack of motivation.

4.2 New competence requirements for university students

The current labor market requires university graduates to develop comprehensive competence. Professional knowledge remains important, but it is no longer sufficient. Students also need technological literacy, data awareness, communication skills, teamwork, problem-solving ability, and the capacity to learn continuously. These competencies are closely related to the employability skills expected by employers and higher education stakeholders [11, 29, 30]. In AI-driven labor markets, employability skills also interact with academic achievement and motivation in shaping the quality of employment [4].

Market adaptability is another key competence. It refers to students' ability to understand employer needs, respond to changes in industry demand, identify emerging opportunities, and adjust career strategies accordingly. Students with high market adaptability are less likely to rely on a single preferred employment path and more likely to develop alternative plans based on changing market conditions [5, 7, 24]. Social responsibility should also be integrated into employability. High-quality employment is not only about individual income or job security. It also involves contributing to organizations, communities, and social development through responsible work behavior. Students who understand both market logic and social value may develop a more sustainable and meaningful approach to career planning [9, 28].

4.3 Typical psychological challenges in employment choices

First, there is often a gap between ideal expectations and labor-market reality. Some students expect high salaries, large-city opportunities, or rapid career advancement, but they may lack sufficient internship experience, professional skills, or realistic knowledge of entry-level positions. This gap can generate anxiety and reduce confidence in career decision-making [12, 28]. Second, some students overemphasize geographic location. Large cities are attractive because they provide rich career resources, but the competition is also stronger. If students evaluate opportunities only by city level, they may overlook positions in other regions that provide better growth space, lower living costs, or more suitable industry environments. Third, family support can be both a resource and a source of pressure. Family advice may help students reduce uncertainty and obtain useful information, but excessive dependence may weaken students' independent judgment. When family expectations conflict with students' interests or market realities, students may experience hesitation and psychological stress. Prior research on Chinese undergraduates also shows that career-specific parental behaviors are associated with career exploration and adaptability [8]. Fourth, job-search setbacks and entrepreneurial failure may lead to self-doubt. Students who experience repeated rejection may question their ability and lower their expectations. Those who attempt entrepreneurship without adequate market knowledge or mentorship may face high risk. Therefore, psychological resilience and adaptive career resources are important for helping students transform setbacks into learning experiences [14, 25]. Evidence from Chinese college-student samples also suggests that psychological vulnerability is closely linked with broader cognitive and emotional factors, which reinforces the need to integrate mental-health awareness into employment guidance [18].

5 Path Selection: Multi-Level Support for Technology-Oriented and Market-Responsive Employment

Graduate employment is influenced by the coordinated interaction of public policy, universities, enterprises, families, and students. A single actor cannot solve employment pressure alone. Existing approaches to graduate employment support in China have focused primarily on job placement and stress-reduction services, with comparatively less attention to the quality and accessibility of career counseling across the full duration of university study [26]. Drawing on synergy theory, this study therefore proposes a multi-level support framework that coordinates the contributions of five actor levels—public

policy, universities, enterprises, families, and students—to create a mutually reinforcing cycle of career development support. The framework emphasizes accurate information, technological empowerment, psychological counseling, practical experience, and social responsibility. As illustrated in Figure 3, student employment attitudes are shaped by both an inner environment (family, university, and enterprises) and an outer environment (socioeconomic conditions, industry-market dynamics, technology systems, and educational culture). Effective support should connect these levels systematically rather than treating student career psychology as an isolated individual issue.

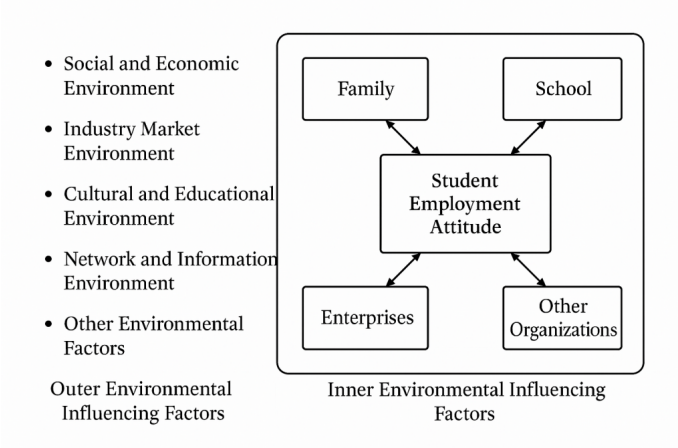

Figure 3. Employment pathways under the social psychological inner- and outer-circle system.

5.1 Public-policy support: improving labor-market information and opportunity access

Public-policy support should focus on improving the transparency, fairness, and accessibility of graduate employment opportunities. This includes strengthening labor-market information platforms, publishing reliable data on industry demand, supporting internship and training programs, and reducing discrimination in recruitment. A broader employability perspective requires attention to both individual skills and labor-market structure [19, 20]. In the context of digital transformation, employment-support platforms should move beyond simple job posting. They can integrate skill-demand analysis, regional industry information, employer credibility, training resources, and career development pathways. Such data-based services would help students make informed decisions and reduce anxiety caused by information asymmetry.

5.2 Enterprise support: precision matching and university-industry collaboration

Enterprises are key actors in improving graduate employability. Employers can provide clearer job descriptions, transparent recruitment procedures, skills-based selection criteria, and structured internship opportunities. Precision matching between student skills and employer needs can reduce mismatches and improve employment quality. For technology-related positions, enterprises can cooperate with universities to develop training modules, case-based projects, innovation competitions, micro-credentials, and practical certification programs. Recent studies further show that participation in employability-building activities and flexible skill credentials can contribute to students' perceived employability and graduate outcomes [13, 21]. University-industry collaboration should not be limited to final-year recruitment. It should begin earlier through lectures, project courses, mentorship, workplace visits, and internships. Students need repeated exposure to real work situations in order to understand job requirements, test their interests, and build pre-professional identity [2, 12].

5.3 University support: technology-enabled career guidance and psychological resilience

Universities should build a career-support system that combines academic learning, skills development, labor-market information, and psychological counseling. Career guidance should be embedded throughout the university experience rather than concentrated only before graduation. First-year students can be guided to understand career fields and skill requirements. Middle-year students can receive training in digital tools, communication, teamwork, and internship planning. Final-year students can receive targeted support in resume preparation, interview skills, job negotiation, and psychological adjustment. Recent evidence indicates that employability programs and student-centered inputs can help universities design more effective career-support systems [22, 26].

Technology can improve the precision of university career services. For example, universities can use digital platforms to collect students' career interests, skill profiles, internship experiences, and job-search progress. With appropriate privacy protection, these data can help counselors identify students who need additional guidance, recommend training resources, and connect students with suitable

opportunities. This approach is consistent with digital competence development and data-informed educational support [10]. Psychological counseling should focus on employment resilience. Students who experience anxiety, hesitation, or self-doubt need support that combines emotional care with practical problem-solving. Universities can establish early-warning mechanisms for employment stress, offer group counseling and individual consultation, and help students transform rejection into learning feedback. The goal is not simply to reduce pressure, but to enhance students' ability to make realistic, flexible, and confident career decisions.

5.4 Family support: warm guidance and respect for student autonomy

Families play an important role in shaping students' employment expectations and psychological security. Supportive families can provide emotional encouragement, information resources, and financial stability during the job-search process. However, family expectations may also create pressure if parents impose career choices that conflict with students' interests, abilities, or market information [8, 16]. A constructive family environment should respect students' autonomy while offering informed advice. Parents can help students evaluate choices, but final career decisions should be based on the student's abilities, values, market information, and long-term development. Universities can also strengthen communication with families by providing career education materials, employment-policy information, and guidance on how to support students during career transitions.

5.5 Student agency: active learning, market awareness, and responsible career planning

Students themselves are the central actors in career development. They should avoid passive waiting and begin career planning early. This includes understanding industry trends, developing digital and professional skills, participating in internships, building portfolios, improving communication ability, and seeking feedback from teachers, employers, and peers. Career ownership and proactive career management are important predictors of students' perceived employability [2, 6]. In technology-related fields, students should cultivate a habit of continuous learning. Even basic familiarity with data tools, digital platforms, online collaboration, and information analysis can improve employability. Students in humanities, social sciences, business, engineering, and natural sciences can all benefit from combining disciplinary knowledge with technology-enabled problem solving. Given the increasing relevance of AI-related skills, students should also develop responsible and practical AI literacy—a competence whose conceptual foundations were established before the current wave of AI-driven labor-market change [23]—rather than relying only on traditional disciplinary credentials [27]. Through active learning and responsible planning, students can better adapt to market changes and contribute to social development through their future careers.

6 Discussion

6.1 Stability orientation as a rational response to structural uncertainty

The strong preference for public-sector and institution-based employment found in this study is consistent with earlier observations of a persistent "iron rice bowl" mentality among Chinese graduates [1], but the present findings extend this literature in an important direction. Rather than attributing stability preference to passivity or risk-aversion alone, the interview evidence suggests that this orientation reflects a pragmatic and context-sensitive response to genuine structural conditions: intensifying graduate-labor-market competition, rising housing costs in large cities, and uncertainty about the long-term trajectory of technology-driven industrial restructuring. From a Social Cognitive Career Theory perspective [15, 16], this pattern is consistent with the role of contextual barriers in shaping outcome expectations. When students perceive the private-sector labor market as unpredictable and the cost of failure as high, stable employment functions as a risk-reduction strategy rather than an absence of ambition. This interpretation aligns with employability research showing that career decision-making is fundamentally embedded in perceived opportunity structures and individual assessments of risk [7, 19].

A notable extension of prior findings is the moderating role of digital skill level. Students who reported stronger competence in digital tools, foreign languages, and data-related tasks demonstrated significantly greater openness to private-sector, technology-intensive, and entrepreneurial career paths. This suggests that technological self-efficacy functions as a key individual-level variable that interacts with structural conditions to differentiate employment orientations within the same institutional

and labor-market context. This relationship has not been systematically documented in previous studies of Chinese graduate employment [1, 20], and represents a contribution of the present study to the literature on graduate employability in technology-transforming economies [4, 29].

6.2 Dependence orientation and the limits of institutional support

The finding that close to 30% of students reported relying heavily on social connections, university recommendations, or family networks as their primary job-search strategy raises important questions about the distribution of career management skills among Chinese university graduates. While reliance on institutional and relational resources is not inherently problematic, the interview data reveal a more passive orientation in which some students expect universities or families to resolve employment challenges on their behalf, with limited personal initiative in skill-building, information-gathering, or employer engagement.

This pattern is consistent with research showing that career management skills—including the ability to evaluate labor-market information, present personal competencies, and navigate recruitment processes—are unevenly distributed among graduates and represent a significant but often overlooked dimension of employability [2, 6]. The present findings further suggest that excessive dependence on ready-made channels may reinforce information asymmetry: students who lack proactive search strategies are less likely to access accurate data on emerging industries, regional opportunities, or skill requirements in technology-related positions. From a policy perspective, this points to the need for career education to shift from job-matching assistance toward developing students' autonomous career agency, particularly in the context of AI-driven labor-market change [27].

6.3 Psychological conflict between personal identity and social expectations

A recurring theme across the interview data was the experience of psychological tension when students' own career preferences diverged from family advice, peer choices, or socially legitimated career paths. This finding resonates with SCCT's emphasis on the role of contextual supports and barriers in shaping career choices [16], and is consistent with prior research on Chinese undergraduates showing that parental career behaviors are closely associated with students' career exploration and adaptability [8].

The present study extends this line of research by documenting a specific form of conflict that is becoming more prevalent in a technology-transforming labor market: the difficulty of evaluating career options in newly emerging sectors whose development trajectories are difficult to assess. Students expressed interest in data analysis, digital marketing, intelligent manufacturing, and platform-based work, but simultaneously reported anxiety about skill obsolescence, insufficient preparation, and the absence of reliable peer or family reference points for evaluating these paths. This suggests that psychological uncertainty in career decision-making is not simply a product of individual risk-aversion, but is partly generated by the structural novelty of technology-driven occupations and the consequent absence of established social scripts for evaluating them. Career guidance systems that provide accurate, sector-specific information on technology-related occupations may help reduce this form of decision-making paralysis [10, 12].

6.4 Digital competence as a differentiating factor in employment orientations

Across all four thematic areas identified in the results, digital competence emerged as a consistent differentiating variable. Students with stronger self-assessed digital skills showed higher openness to market-oriented sectors, greater willingness to consider non-urban employment opportunities, stronger entrepreneurial interest, and lower dependence on institutional job-search channels. This pattern is consistent with recent evidence that digital literacy and AI-related competencies are increasingly tied to employability and employment quality in technology-driven labor markets [4, 23, 29].

These findings carry implications for curriculum design and career education. If digital self-efficacy functions as a gateway variable that shapes the perceived range of feasible career options, then interventions aimed at strengthening students' technology competencies may have effects that extend well beyond technical skill acquisition, producing broader changes in career orientation, risk tolerance, and labor-market engagement. This is particularly relevant for students in non-technical disciplines—humanities, social sciences, and business—who may not receive systematic digital training as part of their degree programs but who stand to benefit substantially from targeted technology

literacy development [21, 27].

6.5 Limitations

Several limitations should be acknowledged when interpreting the findings of this study. First, the interview sample was geographically concentrated, with 52.7% of participants drawn from universities in Guangxi province. Although the remaining 47.3% represented other provinces and online interviews extended the geographic reach of the data collection, the findings may not fully capture the employment psychology of graduates in regions with substantially different labor-market conditions, such as the Pearl River Delta, the Yangtze River Delta, or northeastern China. Second, both the questionnaire data and the interview responses rely on self-report, which introduces the possibility of social desirability bias, particularly for items related to employment goals and skill self-assessment. Third, the cross-sectional design of the study does not permit causal inference about the relationship between psychological orientations and actual employment outcomes. It is possible that the employment attitudes documented here shift substantially as students move through the job-search process and receive feedback from the labor market. Longitudinal research tracking the same cohort from pre-graduation through the first two to three years of employment would provide stronger evidence on the stability and consequences of the psychological patterns identified here. Fourth, while NVivo-assisted coding enhanced the systematicity of qualitative analysis, the five-category coding framework was developed inductively from the data of this particular sample and may not be directly transferable to other institutional or cultural contexts without further validation.

6.6 Theoretical contributions

This study makes three contributions to the existing literature. First, it extends Social Cognitive Career Theory [15, 16] to the specific context of AI-driven labor-market transformation in China, demonstrating that contextual barriers—including information asymmetry, geographic labor-market concentration, and the structural novelty of technology-intensive occupations—interact with self-efficacy beliefs to produce identifiable patterns of employment orientation among university graduates. This application enriches SCCT by specifying the mechanisms through which technology-driven environmental change enters into career decision-making processes.

Second, the study identifies digital skill level as a moderating variable between employment sector preference and psychological risk tolerance, a relationship that has not been systematically examined in prior studies of Chinese graduate employment. The finding that technological self-efficacy is associated with greater openness to market-oriented, non-urban, and entrepreneurial career paths suggests that digital competence development may function not only as a labor-market signal but also as a psychological resource that expands students' perceived range of viable career options.

Third, the study proposes a multi-level synergy framework that operationalizes SCCT's contextual supports and barriers construct across five actor levels—public policy, universities, enterprises, families, and students. This framework moves beyond individualist models of graduate employability by explicitly connecting students' internal employment attitudes with the institutional and social conditions that shape them, and by specifying the distinct contributions that each actor level can make to improving career readiness and employment quality among Chinese university graduates.

7 Conclusion

This study examined university students' employment choices and employment psychology under the combined influence of technological change, market competition, and social expectations. Based on bibliometric analysis, questionnaires, and interviews from 31 universities, the study found that students value stability and predictable development, but they also recognize the importance of technological competence, market adaptability, and social contribution. These findings are consistent with broader research showing that graduate employability is shaped by individual capital, labor-market context, career adaptability, digital competence, and the quality of institutional employability support [4, 5, 13, 25, 26, 29].

The findings also reveal several psychological tensions in career decision-making: the gap between ideal expectations and labor-market reality, dependence on family or university resources, uncertainty about emerging industries, geographic preference for large cities, and self-doubt after job-search setbacks. These tensions show that employment support should not be limited to job placement. It should also include technology literacy, market information, psychological resilience, and social responsibility.

The study proposes a multi-level support framework involving public policy, universities, enterprises, families, and students. Public policy should improve employment information and opportunity access; enterprises should participate in skills training and precision matching; universities should provide technology-enabled career guidance and psychological counseling; families should offer warm support while respecting student autonomy; and students should actively develop skills, market awareness, and responsible career plans. Together, these efforts can help university students improve career readiness, adapt to technological and market changes, and achieve higher-quality employment in a changing society.

Data Availability Statement

Data will be made available on request.

Funding

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Conflicts of Interest

The author declares no conflicts of interest.

Ethical Approval and Consent to Participate

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. All participants were informed of the purpose of the study, its voluntary nature, and their right to withdraw at any time without consequence. Written informed consent was obtained from all participants prior to their involvement in the study. No personally identifiable information was collected or disclosed. The study was approved by the Research Ethics Committee of Zhongkai University of Agriculture and Engineering.

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