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The Analysis of Success Factors for Job Seekers among Chinese University Graduates Based on Social Career Cognitive Theory

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ABSTRACT

In recent years, the employment rate of Chinese university graduates has continued to decline, especially after the COVID-19 pandemic. As the employment situation has become increasingly severe, job search has become one of the most important career issues for university graduates. This study aimed to explore the structural relationship between various factors that influence job-seeking outcomes for Chinese undergraduate graduates, using the self-management model in Social Cognitive Career Theory. A questionnaire survey was conducted, and 764 valid responses were collected. Using exploratory factor analysis, ten success factors were identified and validated through further factor analysis. The study confirms the applicability of the self-management model in addressing the employment challenges faced by Chinese graduates. This includes career counseling, curriculum design, professional development programs, policy-making, and employer engagement. Suggestions were made based on the ranking of the magnitude of the influence of each factor to improve the job-seeking outcomes for Chinese university students. These findings provide a theoretical basis for universities to design and implement effective employment training programs.

KEYWORDS

Chinese university graduates; Job search; Self-management model; Social career cognitive theory

1. Background

The optimal employment of university graduates is not only vital for their individual financial well-being but also instrumental in maintaining social harmony and stability (Wang, 2014). Recent statistics indicate a continuous rise in the number of Chinese higher education graduates each year since the onset of the coronavirus outbreak: 8.74 million in 2020 and 9.09 million in 2021, an annual increase of 350,000. This upward trend also continued into 2022 and 2023, with the number of graduates in these two years being 10.76 million and 11.58 million, respectively (Ye, 2021; Ministry of Education of the People's Republic of China, 2022). Contrarily, despite the escalating number of graduates, the employment rate is experiencing a downturn. The University Student Employability Survey Report from Zhaopin. com disclosed an 18.9% reduction in the employment rate of Chinese undergraduate graduates in 2021 compared to 2020, with an additional 6% decrease in 2022 relative to 2021 (Zhaopin. com, 2022). Consequently, addressing youth employment issues has surfaced as a paramount concern for proactive employment policies.

However, Chinese universities typically prioritize students' intelligence over professional and career

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preparation, resulting in various challenges for students (Cao et al., 2020). Such challenges encompass confusion and uncertainty about career planning, a situation compounded by aspects like employment stress and job market dynamics. "The 2017 White Paper on the Growth of Chinese University Students" documented that 95.7% of higher education students in China, especially first-year students and those in remote locales, experience confusion and perplexity regarding future career planning (Overseas Chinese Charity Foundation of China, 2017). To mitigate these issues, scholars advocate improving students' career intentions and readiness during their education is crucial (Sun & Wu, 2005; Yu et al., 2014). Nonetheless, the factors influencing the job search amongst Chinese university students remain scarcely explored, with higher educational institutions in China receiving limited attention regarding their role. Hence, it becomes imperative to discern the factors affecting job searches among university students and to address them adeptly.

Yang (2022) emphasizes the significance of understanding the determinants that influence job-seeking outcomes for Chinese university students. An empirical investigation into the determinants of successful job-seeking outcomes among Chinese university students, employing factor analysis, is imperative to refine the focus of employment policies across various influential factor categories within this demographic. Furthermore, this research facilitates universities in offering precise employment support to students, guided by these determinants, thereby fostering comprehensive and high-quality employment among them.

Using the self-management model of Social Cognitive Career Theory (SCCT), this research explores career development facets. Although SCCT has influenced global studies on university students' career paths, its use in China is limited. Shei et al. (2010) underscored self-efficacy's role in career choices, while Lent et al. (2016) focused on student career exploration. In China, Long et al. (2002) compared SCCT with traditional theories, and subsequent research, including Song et al. (2007) and Liu et al. (2021), emphasized its practicality.

Nonetheless, the efficacious implementation of SCCT in Western contexts may not be directly replicable in China, given the distinct socio-economic and political landscapes. Moreover, the self-management model, introduced in 2013, represents the least utilized version of the SCCT models within Chinese research. This study employs the self-management model as a framework to explore the factors influencing the job search processes of Chinese university students.

This study endeavors to identify pivotal factors influencing Chinese undergraduates' job-seeking behavior utilizing Exploratory Factor Analysis (EFA) and seeks to validate the SCCT's self-management model within a Chinese context through Confirmatory Factor Analysis (CFA) using current sample data. It assesses the model's relevance for Chinese university graduates' employment challenges and analyzes how success factors influence job-seeking attributes. Quantitative methods and statistical analysis are employed to investigate these relationships.

2. Literature review

2.1 Successful job searching

The study of successful job searching or the attainment of favorable employment outcomes has been a focal point of career research since the 1930s. The operational definition of successful job searching has been articulated in numerous manners. In China, it's often defined as a worker's ability to contribute economic and social value through specific labor and receive legal compensation within a set timeframe. For university students, successful employment is interpreted as the establishment of employment objectives and the realization of them following sufficient preparation (Huang, 2008).

Factors that influence successful job searching are manifold and can typically be categorized into two primary groups based on the chronology of their impact: antecedent factors (like personality traits or attitudes) and process factors that include behaviors during the job search (Van Hooft et al., 2021; Wang et al., 2017). This common categorization approach separates static and dynamic variables for

discussion. However, SCCT integrates static and dynamic variables as a whole, offering a more holistic view not seen in prior research.

2.2 Social cognitive career theory

SCCT is grounded in Bandura's (1986) Social Cognitive Theory, postulating a multifaceted interconnection among personal, cognitive, and environmental factors that mutually influence performance. Specifically, the Social Cognitive Theory underscores the significant role of cognitive factors. Lent et al. (1994) identified three pivotal social cognitive variables: self-efficacy expectation, outcome expectation, and goal choice, each postulated to exert a significant impact on SCCT. These constructs play a vital role in shaping individuals' perceptions of, and approaches to, tasks and challenges throughout their career paths.

Initially, SCCT encompassed three interrelated models: the model of interest development, the model of career choice, and the model of task performance, each designed to investigate interest development, choice, and perseverance in education and career trajectories (Lent et al., 1994). Lent and Brown (2008) expanded SCCT in 2008 by introducing theoretical satisfaction models that contemplate performance in educational and professional spheres. Subsequently, Lent and Brown (2013) introduced the career self-management model.

A rigorous search within the Web of Science and Scopus databases yielded 735 journal articles and conference papers pertaining to SCCT. Notably, of these publications, 725 emerged subsequent to the year 2000, illustrating a recent uptick in SCCT research interest. Nevertheless, a mere 31 papers, constituting 4.28% of the total, originate from mainland China, highlighting the limited proportion of these works. Concurrently, Chinese scholars exploring the academic and career development of students via the SCCT framework predominantly employ the concept of career self-efficacy, examining students' learning attitudes, performance in specific academic realms (e.g., STEM), and professional interests and identities, among additional aspects (Chen et al., 2019; Liang, 2018; Zhou, 2016; Wu, 2015). Yet, research addressing successful job searches in China remains absent.

2.3 Career self-management model

The career self-management model recognizes individuals as active participants in managing their careers, engaging them in a cyclical process that entails goal evaluation, action execution, and progress reflection. Focusing on the process of career management, this model provides a comprehensive and dynamic framework for understanding individuals' career navigation (Lent et al., 2013). Although the self-management model represents the most recent addition to the SCCT, global research based on this model has been relatively sparse, with merely 15 out of 735 articles applying it.

In the career self-management model, the initially emphasized "interest factor" is supplanted by the "personality factor," which influences goal selection and action. While traditional models, highlighted by Lent and Brown, address the "content" or "what" of career development by detailing interests and roles, the career self-management model focuses on the "process" or "how." It outlines strategies for growth, adaptation, and transitions from academia to profession (Lent & Brown, 2013; Lent et al., 2018). This model shifts emphasis to the driving factors of career development, clarifying how individuals make choices and navigate challenges in their career trajectories. The Career Self-management Model encompasses the following factors:

Self-efficacy expectation (SE). Self-efficacy reflects an individual's belief in their capability to perform specific tasks, a belief shaped by various factors including experiences, observations, persuasion, and emotional states. Lent et al. (1994) notes self-efficacy relates to distinct behaviors and is context-dependent, highlighting one's adaptability. High self-efficacy leads to proactive job-seeking and persistence against challenges (Saks et al., 2015; Betz et al., 1983; Hackett et al., 1981).

Outcome expectation (OE). Outcome expectations, as a pivotal social cognitive construct, pertain to an individual's beliefs regarding the potential consequences of specific behaviors(Lent & Brown, 1994). When individuals anticipate positive outcomes from their efforts, they exhibit a higher

propensity to take action. Positive expectations motivate action, such as seeking rewarding jobs or careers aligning with personal values (Lent et al., 1994; Betz et al., 1997).

Learning experience (LE). Bandura's social cognitive theory (1986) identifies four key sources enhancing self-efficacy: performance accomplishments, vicarious learning, verbal persuasion, and emotional arousal. Lent et al.(1994) integrated these into the SCCT as "learning experiences", which foster self-efficacy and outcome expectations in professional contexts. The relationship between learning experiences and job search is complex. These experiences refine job search skills and promote lifelong learning (Brown & Brooks, 1991; Krumboltz, 1996; De Vos et al., 2011).

Contextual influences (CI). Lent et al. (2016) highlight the impact of contextual factors, especially social support (SS) and social barriers (SB), on self-efficacy and outcome expectations. Social support, both perceived and actual, affects career decision-making, with students often receiving it from family (SSF), teachers (SST), and friends (SSFR) (Fisher, 1999). Increased social support boosts resilience and determination (Guan et al., 2016; Liang et al., 2017). In contrast, social barriers pose external challenges that can directly or indirectly affect self-efficacy and expectations (Lent et al., 2000).

Career goal (CG). A career goal delineates an individual's aspiration to engage in a specific activity or field, underscored by a commitment to attain a desired level of achievement. Within the SCCT framework, goals motivate individuals, influencing job-seeking behaviors and decisions (Bandura, 1977; Lent et al., 1994; 2002).

Career action (CA). Blau (1994) identifies two career action dimensions: job search preparation and activities. Preparation involves information gathering to ready for the action phase, where job seekers apply, interview, and show commitment to job hunting (Liu et al., 2006). According to SCCT, high self-efficacy results in proactive career actions, guided by outcome expectations and career goals (Blau, 1994; Liu et al., 2006; Lent et al., 1994).

3. Method

3.1 Instruments

This study focused on Chinese university graduates and developed a questionnaire for job search success factors grounded in SCCT. Drawing from the self-management model of SCCT, as illustrated in Figure 1, job seekers' success is shaped by multiple determinants, encompassing learning experiences, self-efficacy expectations, outcome expectations, personality, social support and barriers, career goals, and career actions. The subsequent instruments were employed to gauge these variables:

The questionnaire crafted for this research includes 90 items that evaluate the factors influencing job search success among Chinese university graduates. This instrument amalgamates multiple scales: the

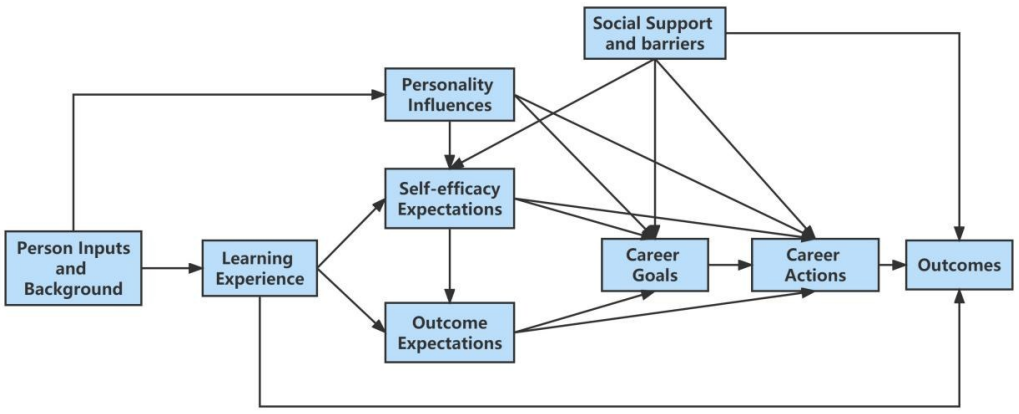

Figure 1 Career self-management model. Source: Lent et al. (2013)

Career Exploration and Decision-making Learning Experience Scale (Chinese version, 2019), Jinde's Ten-item Big Five Personality Inventory (2013), the General Self-efficacy Scale (Chinese version, 2001), Yu's Career Decision Outcome Expectations Scale (2004), Fisher's Career Influence Inventory (1999), Yonghong's Career Goal Scale (2004), and Blau's Career Exploration Scale (1993). The questionnaire preserves the original Likert scoring for each subscale. Specifically, the Career Exploration and Decision-making Learning Experience Scale (Chinese version) and the Career Exploration Scale employ a 5-point Likert scale, the Ten-item Big Five Personality Inventory uses a 7-point Likert scale, while the remaining scales utilize a 4-point Likert scale.

3.2 Participants and procedure

This cross-sectional study, conducted between June and July 2023, employed a stratified sampling method across 10 universities (i. e., 2 Double First-class institutions and 8 ordinary universities) in mainland China. Data were gathered through a questionnaire distributed to recent graduates from these institutions.

In 2022, the Ministry of Education of the People's Republic of China documented a total of 1,239 universities within the nation. Among these, 11.86% (147) have been distinguished with the "Double First-class" designation, signifying their superior academic disciplines, while the remaining institutions are classified as ordinary universities (Baidu Baike, 2022).

To ensure representation from various regions, the selection prioritized geographical diversity within China and the researcher's ease of access to students. Due to constraints in time and resources, ten universities were selected for sampling. These included two Double First-class institutions, such as Northeastern University at Qinhuangdao, and eight ordinary universities, including Yan'an University, Hebei Normal University of Science & Technology, and Dianchi College of Yunnan University. These include both public undergraduate institutions and private independent undergraduate institutions in China. The selection criteria aimed to capture diverse perspectives influenced by regional, cultural, or economic factors and to ensure efficient data collection.

Of the 1, 097 questionnaires distributed, 68 were excluded due to too short response times or respondents' families residing outside mainland China. This resulted in 1029 valid responses, a 93.80% response rate. Importantly, 964 of these respondents had secured job offers or further education opportunities. Their experiences, transitioning from academia to professional or further academic pursuits, provided valuable insights for this study.

Using a quantitative, empirical approach, the study evaluated inter-variable relationships (Sekaran & Bougie, 2009). The online questionnaire required phone numbers for data uniqueness, with all personal data encrypted, securely stored, and later deleted to ensure participant privacy.

Factor analysis is a widely adopted statistical method designed to identify the fundamental components or dimensions represented by each variable or question. Its primary objective is to ascertain the alignment of data with predetermined dimensions or constructs. Furthermore, this method is instrumental in quantifying the factor loadings associated with each variable or question for every identified factor, which in essence reveals the strength of their relationship.

To thoroughly assess the dataset, a two-fold approach was utilized. Initially, exploratory factor analysis (EFA) was carried out using the SPSS 26.0 software. This procedure aids in pinpointing the potential underlying factor structures without imposing any preconceptions of the data. Subsequent to EFA, confirmatory factor analysis (CFA) was executed with AMOS 24.0. This study randomly allocated 964 respondents into two groups: one group consisting of 464 respondents for EFA, and the other comprising 500 respondents for CFA.

4. Findings

Table 1 presents the demographic breakdown of the 964 respondents. Among them, 469 were male (48.65%), while 495 were female (51.35%). In terms of geographical distribution, 32.16% hailed from

eastern China, 25.93% from central China, and 41.91% from western China. The data further indicates a close split between respondents from rural backgrounds, 469 (48.65%), and those from urban origins, 495 (51.35%).

Economically, the household income levels were distributed as follows: 33.92% fell into the low-income bracket, 37.97% were middle-low income, 25.00% were in the middle-income category, and a mere 3.11% were considered high-income. Moreover, Table 1 details the educational attainments of respondents' parents. Interestingly, fathers were statistically more inclined than mothers to possess a college degree or higher.

In terms of academic credentials, the vast majority, 65.35%, were graduates from the ordinary universities, while the remaining 34.65% are from Double First-class universities. Delving into specific disciplines, the majors were dispersed as: humanities at 21.78%, social sciences at 17.53%, natural sciences and agriculture at 13.38%, engineering technology and military science commanding 34.34%, and the final 12.97% were dedicated to medicine and healthcare.

Table 1 Person input and background of respondents

Factor	Type	Sample size	Proportion
Gender	Male	469	48.65%
	Female	495	51.35%
Family Location	In eastern China	310	32.16%
	In central China	250	25.93%
	In western China	404	41.91%
Household Location Type	Rural family	469	48.65%
	Urban family	495	51.35%
Household Income Level	Low income class (< 50,000 CNY)	327	33.92%
	Middle-low-income class (50,000-100,000 CNY)	366	37.97%
	Middle class (100,001-300,000 CNY)	241	25.00%
	High income class (>300,001 CNY)	30	3.11%
Educational Level of Father	Middle school or below	478	49.59%
	High school or junior college	256	26.55%
	College, bachelor degree or above	230	23.86%
Educational Level of Mother	Middle school or below	549	56.95%
	High school or junior college	226	23.44%
	College or bachelor degree or above	189	19.61%
Institution Type	Double First-Class universities	334	34.65%
	Ordinary universities	630	65.35%
Major	Humanities (Philosophy, History, Literature, Art)	210	21.78%
	Social Sciences (Education, Law, Economics, Management)	169	17.53%
	Natural Sciences & Agriculture	129	13.38%
	Engineering Technology & Military Science	331	34.34%
	Medicine & Healthcare	125	12.97%

Upon reliability assessment, the Cronbach's alpha values for the individual scales ranged from 0.703 to 0.931. However, the overall questionnaire exhibited a coefficient of 0.955. All coefficients surpassed the 0.7 threshold, meeting reliability standards. It's noteworthy that the reliability of a comprehensive questionnaire often surpasses its subscales. This is primarily because, as per statistical tenets, a measurement tool with more items typically has enhanced reliability (Nunnally, 1978). Additionally, items in an aggregate scale often span several interrelated concepts or dimensions (Tavakol & Dennick, 2011).

4.1 Exploring success factors for Chinese university graduates in job seeking

To assess the determinants of success for job seekers, several statistical indicators, including the

Table 2 Reliability analysis of the instruments

Scale of each factor	Cronbach's alpha
Learning Experience (LE)	0.913
Personality Influences (PI)	0.703
Self-efficacy Expectation (SE)	0.887
Outcome Expectation (OE)	0.838
Social Supports (SS)	0.852
Social Barriers (SB)	0.854
Career Goal (CG)	0.890
Career Action (CA)	0.918
The overall questionnaire	0.955

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, Bartlett's test of Sphericity, and the determinant score, were employed to validate the suitability of the dataset for factor analysis (Pallant, 2010). The obtained KMO value was 0.959, suggesting a robust sample size and underscoring the appropriateness of factor analysis for this dataset. Further reinforcing this, Bartlett's test of Sphericity yielded a highly significant p-value of less than 0.001, highlighting a potent correlation among the variables.

Factor loading values denote the correlation magnitude between analyzed items and the considered factors. Items with a standard loading coefficient exceeding 0.7 typically indicate a robust correlation. In contrast, items with an insignificant or low coefficient suggest a tenuous association and might be candidates for exclusion. During this assessment, certain items, specifically LE17, LE18, LE19, PI4, PI5, PI6, SS16, SS17 exhibited coefficients below 0.5 and were subsequently excluded. The refined factor loading matrix emerged from an orthogonal rotation maximizing variance.

Table 3 presents the data before the extraction process, highlighting that the initial dataset consisted of 82 linear components. The research utilized maximum orthogonal variance rotation on common factors. Factors were subsequently categorized based on a factor load matrix exceeding 0.5. Any factor with a load less than 0.4 underwent suppression (Krueger & Maaren, 2018). Ultimately, the dataset retained only 10 linear components with eigenvalues surpassing 1, as delineated in Table 2. This suggests that these 10 factors account for 67.13% of the shared variance among the 82 variables. Notably, Component 1 accounts for 29.30% of this variance—the most significant contribution among all components, marking it as the predominant factor. As components increase in number, there is a corresponding decrease in the percentage of variance explained. Furthermore, in Table 3, utilizing the same maximum orthogonal variance rotation, most load values in the table exceed 0.5, signaling a potent positive correlation with their associated components. Remarkably, some load values, such as those for SB3 and SB5 in Component 6, surpass 0.7, denoting an exceptionally strong correlation. Each component correlates with several variables, with their respective loads explicating these connections.

The table presented organizes variables based on their respective factors. Utilizing Principal Component Analysis, 10 distinct components emerged: *Learning Experience (LE), Career Action (CA), Self-efficacy Expectation (SE), Social Support from Teachers (SST), Social Support from Families (SSF), Social Barriers (SB), Outcome Expectation (OE), Social Support from Friends (SSFR)*, *Personalities Influence (PI)*, and *Career Goal (CG)*. These components, derived from a consolidation of 82 variables, are enumerated sequentially from 1 to 10. It is worth highlighting that social support was further segmented into three separate components, representing support from teachers (Component 4), family (Component 5), and friends (Component 8). Within Component 2's 14 factors, 13 pertain to career actions, whereas the sole exception, "I try my best to achieve the career goals I have set," aligns with career actions despite being under the career goals category. Hence, Component 2 is aptly

classified as *Career Action*. Taken together, these components align with the variables outlined in the self-management model of SCCT.

The principal four factors, defined by their variance contributions, are LE (accounting for 30.638% of the overall variance), CA (accounting for 11.582% of the overall variance), SE (accounting for 5.828% of the overall variance), and SST (accounting for 4.424% of the overall variance). Utilizing SPSS, one can directly compute the common factor score variables by transitioning to the data view and identifying the newly added factor score variables appended to the original dataset. To thoroughly analyze the relationships among the variable pairs with the highest scores out of the ten variables, scatter plots were generated, showcasing pairwise comparisons of the factor scores for LE, CA, SE, and SST, as illustrated in Figure 2.

As can be seen in Scatterplot 1, most of the data points are clustered within a central area, but there is no clear trend. There does not appear to be a significant correlation between learning experience and career action.

The subsequent plot indicates that enhanced learning experiences are associated with elevated self-efficacy expectations. As posited by SCCT, such learning experiences aid in transforming personal inputs and contextual variables into self-efficacy and outcome expectations (Lent et al., 2016). Schaub and Tokar (2005) found that learning experiences positively correlate with respective self-efficacy beliefs and outcome expectations.

The relationship between learning experiences and social support from teachers depicted in Scatterplot 3 exhibits a nuanced pattern. Initially, as LE increases, SST declines; however, in the latter half of the graph, SST rises with an increase in LE. Such a parabolic trend has received limited attention in prior literature. Nonetheless, Wigfield et al. (2000) posited that as individuals accumulate more learning experiences, they may recalibrate their expectations, reducing their reliance on or anticipation of social support. Ireland and Lent (2018) supported this notion, illustrating a positive correlation between social support and varied learning experiences, thereby reinforcing the link between teacher support and the depth of learning. Future research could delve deeper into this intricate relationship.

The fourth scatter plot did not show a definitive trend between self-efficacy and career action. However, the fifth and sixth scatter plots display positive correlations: one between career action and social support from teachers, and another between self-efficacy expectation and the same support. Wang and Jiao (2022) further noted that enhanced career social support, coupled with improved career decision-making self-efficacy, augments university students' career management proficiency.

The fifth scatter plot indicates a mild positive correlation between CA and SST. Lent et al. (2002) determined that perceived social support bolsters an individual's confidence in career decisions, fostering more proactive job-seeking behaviors. Individuals who sense affirmative support from teachers tend to be more proactive in job search endeavors and in pursuing career aspirations.

The last scatter plot delineates the relationship between SE and SST, evident from the data points predominantly clustered centrally, indicating a mild positive correlation. Social support augments self-efficacy, as external encouragement bolsters an individual's confidence in addressing challenges and decision-making. Lent et al. (2001) highlighted the pivotal role of social support in mediating the association between career-related self-efficacy and outcome expectations. Such support can notably influence an individual's career self-efficacy; for instance, students fortified by their teachers' encouragement and affirmation may be more assured in contemplating diverse career trajectories.

4.2 Confirming factors influencing Chinese university graduates job seeking based on SCCT

In the preceding section, EFA was used to discern the underlying structure of the data. Subsequently, CFA is employed to ascertain the robustness and generalizability of these identified structures. The analysis validated ten components comprising 82 items, drawing upon the model developed through the

Table 3 Latent components and factor loadings

Component 1	*% of Variance*	*Factor*	*LE8*	*LE7*	*LE6*	*LE3*	*LE9*	*LE4*	*LE20*	*LE2*	*LE5*	*LE11*	*LE10*	*LE1*	*LE12*	*LE13*	*LE15*	*LE16*	*LE14*
	30.638	Coefficients	0.774	0.767	0.747	0.732	0.725	0.702	-0.698	0.691	0.688	0.684	0.676	0.658	0.644	0.619	0.607	0.604	0.601
Component 2	% of Variance	Factor	CA6	CA11	CA12	CA5	CA13	CA9	CA3	CA8	CA4	CA10	CA7	CA1	CA2	CG5			
	11.582	Coefficients	0.788	0.774	0.773	0.769	0.760	0.748	0.745	0.744	0.737	0.722	0.631	0.615	0.567	0.541			
Component 3	% of Variance	Factor	SE4	SE5	SE10	SE7	SE3	SE2	SE9	SE8	SE6	SE1							
	5.828	Coefficients	0.765	0.753	0.702	0.696	0.678	0.646	0.640	0.631	0.628	0.545							
Component 4	% of Variance	Factor	SS7	SS8	SS4	SS2	SS5	SS1	SS6	SS3									
	4.424	Coefficients	0.784	0.770	0.705	0.679	0.668	0.667	0.665	0.625									
Component 5	% of Variance	Factor	SS12	SS13	SS11	SS15	SS14	SS10	SS9										
	4.239	Coefficients	0.753	0.734	0.706	0.678	0.670	0.612	0.550										
Component 6	% of Variance	Factor	SB3	SB5	SB6	SB1	SB2	SB4											
	2.869	Coefficients	0.880	0.875	0.838	0.814	0.776	0.769											
Component 7	% of Variance	Factor	OE5	OE6	OE2	OE3	OE4	OE1											
	2.117	Coefficients	0.708	0.668	0.659	0.655	0.652	0.626											
Component 8	% of Variance	Factor	SS22	SS23	SS24	SS21	SS19	SS20	SS18										
	2.014	Coefficients	0.722	0.701	0.683	0.617	0.544	0.537	0.535										
Component 9	% of Variance	Factor	PI2	PI3	PI1														
	1.822	Coefficients	0.766	0.750	0.699														
Component 10	% of Variance	Factor	CG1	CG3	CG2	CG4													
	1.596	Coefficients	0.577	0.563	0.553	0.537													

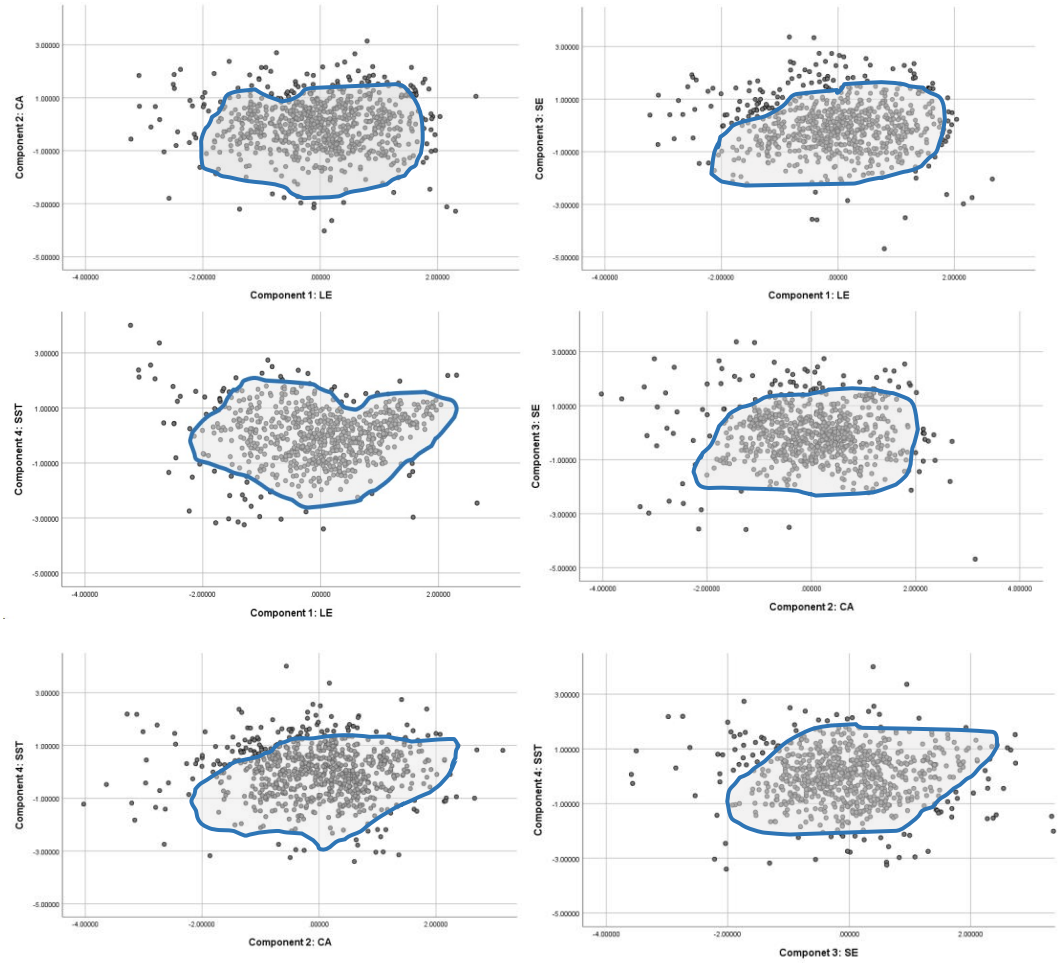

Figure 2 Scatter plots between normalized LE, CA, SE, and SST

exploratory phase. With a sample size of 500, this analysis offers a sample-to-item ratio of 5, indicating a reasonably sized sample (Bentler & Chou, 1987).

Table 4 Model AVE and CR indicator results

Factor	Average variance extracted AVE values	CR value of combined confidence
LE	0.549	0.936
PI	0.612	0.824
SE	0.546	0.923
OE	0.578	0.891
SST	0.558	0.91
SSF	0.5	0.875
SSFR	0.48	0.88
SB	0.638	0.913
CG	0.757	0.94
CA	0.582	0.947

Table 4 displays the convergent validity analysis results using Average Variance Extracted (AVE) and Composite Reliability (CR). Conventionally, AVE values exceeding 0.5 and CR values surpassing 0.7 signify robust convergent validity. Nonetheless, Fornell and Larcker (1981) suggested that a construct maintains acceptable convergent validity even when AVE is below 0.5, provided CR exceeds

0.6. Thus, AVE values in the range of 0.4 to 0.5 are deemed satisfactory. This research executed Confirmatory Factor Analysis (CFA) on ten factors encompassing 82 items. As evidenced by Table 3, all ten factors presented AVE values above 0.4 and CR values surpassing 0.8, denoting commendable factor consistency.

Table 5 Model fitness index

Commonly Used Indicators	Cardinality Ratio of Freedom χ2/df	RMSEA	RMR	GFI	CFI	NFI	NNFI	IFI	AGFI	SRMR
Judgment Criteria	<3	<0.10	<0.05	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	<0.1
Value	2.873	0.05	0.036	0.828	0.901	0.915	0.966	0.915	0.859	0.047
Default Model: χ2(3003)=44829.192, p=1.000										

Using the SCCT self-management model, this research used a first-order confirmatory factor analysis for Chinese university graduates' job-seeking success. Model fitness indices reflect how closely a model matches observed data. According to Table 5 criteria, the Cardinality Ratio of Freedom is 2.873, indicating a good fit. The RMSEA value is well below 0.10, signifying a close fit. Indices like NFI, NNFI, CFI, and IFI surpass 0.9, denoting excellent model fitness, while GFI (0.828) and AGFI (0.859) are just below 0.9. Despite challenges in meeting all fit standards, as shown in Arpaci and Baloğlu's (2016) study with GFI and AGFI over 0.8, the model largely fits well with the data.

The final SEM model integrates the findings from Figure 3, as illustrated. According to Hair et al. (2017), an HTMT value below 0.85 (though occasionally a threshold of 0.9 is adopted) signals discriminant validity between two factors. In this study, all HTMT values were under 0.85, which confirms strong discriminant validity among the factors.

This underscores the uniqueness and distinguishability of the ten explored factors (LE, PI, SE, OE, SST, SSF, SSFR, SB, CG, CA, LE). Each latent variable's path coefficients for its measures are noteworthy, exceeding 0.5, emphasizing the significant relevance of each measure to its respective latent variable. For instance, OE5's standardized regression coefficient is 0.756, which conveys that the direct influence of the latent variable, outcome expectancy, on the OE5 measure is 0.756. The measurement model determining the success factors for job seekers exhibited a commendable fit, and its tight alignment with the data affirms the scale's robust outcome validity.

5. Discussion

Utilizing exploratory factor analysis, the initial set of 90 items impacting the employment outcomes of Chinese university graduates was streamlined to 82 items, grouped into ten distinct dimensions. These dimensions encompass: Learning Experience (LE), Career Action (CA), Self-efficacy Expectation (SE), Social Support from Teachers (SST), Social Support from Families (SSF), Social Barriers (SB), Outcome Expectation (OE), Social Support from Friends (SSFR), Personalities Influence (PI), and Career Goal (CG). Notably, these dimensions align with key variables within the SCCT's self-management model, underscoring its relevance to Chinese university students' employment challenges. The validation factor analysis showcased significant relationships in and among the test and structural models, discarding redundant variables. Thus, researchers are presented with an optimized set of items to gauge these success determinants. Furthermore, the factors were ranked based on their variance contribution, with LE>CA>SE>SST>SSF>SB>OE>SSFR>PI>CG. The prioritized ranking based on variance contributions offers insights into the predominant factors influencing the employment trajectories of Chinese higher education students.

The findings of the study indicate that the learning experience is the most crucial factor in determining the employment success of Chinese university graduates. Schaub and Tokar (2005) robustly support the hypotheses of Lent et al., positing that these experiences profoundly influence individuals' self-efficacy beliefs and outcome expectations. Positive encounters in a particular domain enhance individuals' confidence in their abilities within that area. Such experiences allow individuals to

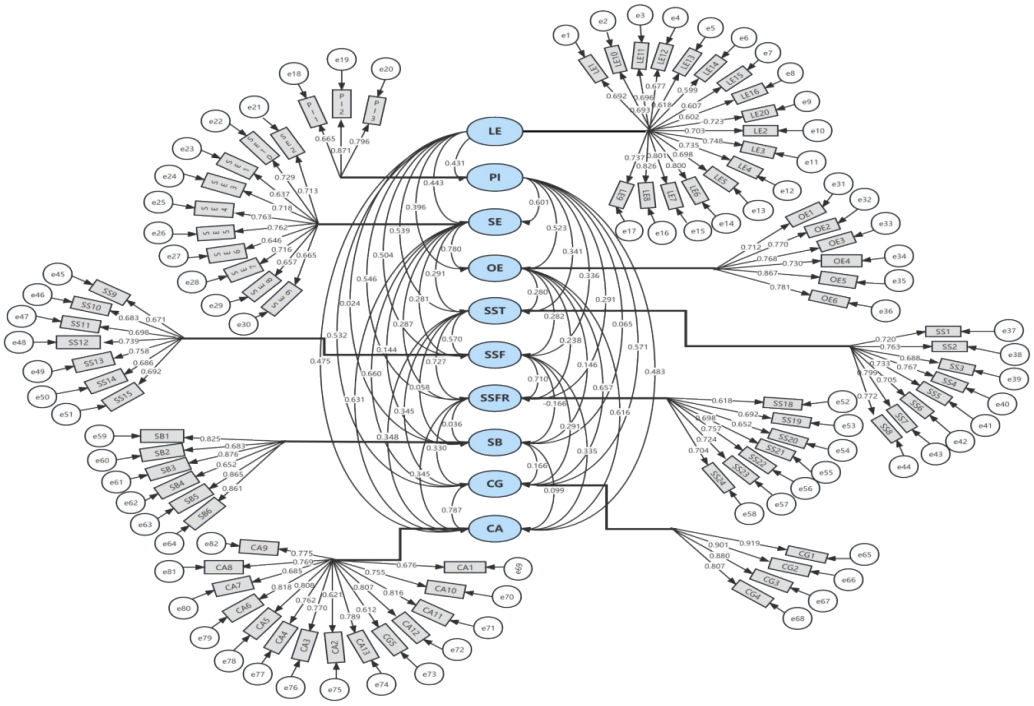

Figure 3 SEM of the success factors for job seekers among Chinese university graduates

more accurately forecast the results of their endeavors. Favorable learning experiences can also ignite an individual's passion for a career field, leading to increased engagement and effort. Moreover, confronting and overcoming challenges within these experiences can foster resilience, enabling individuals to better navigate career-related pressures (Schiefele, 2009). Learning experiences are instrumental in acquiring career knowledge, refining skills, bolstering self-efficacy, and fostering professional roles (Anderson, 1982; Ericsson et al., 2007). Furthermore, Schaub and Tokar (2005) view these experiences as a pivotal intermediary between personal characteristics, like personality traits, and the sociocognitive processes crucial to interest development, career selection, and performance.

In this study, the impact of career action on job search success outcomes was found to be second only to learning experience. Brown et al. (2006) posited that career actions are pivotal in assisting individuals to define and achieve their career objectives. Through consistent introspection and planning, one can articulate career goals and formulate aligned action plans. Employing effective job search strategies is vital for securing desired positions. Empirical evidence suggests that a proficient job search strategy markedly elevates the likelihood of job acquisition. Furthermore, career actions bolster individuals' self-efficacy and professional identity. Through proactive initiatives, they can steadily progress towards their career milestones, ultimately actualizing their vocational visions (Bandura, 1986). Moreover, career actions facilitate adaptability in a dynamic and demanding professional environment. In light of the evolving career landscape, individuals need to perpetually refine their career advancement strategies (Smith & Johnson, 2020).

Self-efficacy significantly influences job search outcomes. Studies indicate that individuals possessing elevated self-efficacy tend to adopt proactive job search tactics, including networking, pursuing informational interviews, and actively submitting job applications (Lent et al., 2000). Such strategic measures augment the probability of securing superior job positions, culminating in career advancement. Moreover, self-efficacy directly correlates with job performance. Those with a high degree of self-efficacy possess a staunch belief in their capability to adeptly execute tasks and surmount

challenges. This conviction engenders enhanced diligence, tenacity, and drive, fostering exemplary job performance (Bandura, 1997). Consequently, such individuals are predisposed to attain superior job performance metrics and garner affirmative appraisals from superiors. In essence, self-efficacy is instrumental in shaping individuals' career perceptions, job search outcomes, and performance efficacy. Cultivating and sustaining elevated self-efficacy is imperative for career accomplishment.

The fourth most influential factor for Chinese university graduates was supports from school teachers. Compared to support from parents and friends, support from teachers was the top social support factor in this study. This influence was evident across five domains: career preparation, resource access, academic and professional coursework, personal appraisals, and comprehensive career development. Schools and teachers hold a pivotal role in students' career trajectories. Their professional guidance equips students with a nuanced comprehension of job market dynamics. Furthermore, they furnish pivotal job search strategies, amplifying students' aptitude in leveraging available job search resources. Such targeted guidance has been shown to positively correlate with students' job placement success (Liu, 2014). The endorsements from educators and institutions bolster students' professional stature, engendering heightened trust and appeal among potential employers. A school's prestige, paired with individualized teacher commendations, significantly influences job search outcomes (Chen et al., 2018). With an intimate awareness of a student's scholastic and personal attributes, teachers can proffer tailored evaluations and endorsements. Such personalized testimonials serve as potent leverage in job search endeavors (Wang et al., 2020). Broadly, educational institutions proffer holistic career development resources, enabling students to chart their professional journey meticulously, hone pertinent competencies, and access specialized training. Empirical studies validate the positive ramifications of such institutional career support on students' job satisfaction and overall career progression (Wu et al., 2016).

Specifically on methodology to improve employment rate, universities can boost student employment rates by emphasizing enriched learning experiences, enhancing self-efficacy, facilitating career actions, and strengthening social support. To enrich learning experiences, universities can partner with businesses to offer internships and practical training, aligning theoretical knowledge with real-world applications. Updating course content based on market needs ensures students gain relevant skills. Engaging students in interdisciplinary projects nurtures holistic thinking, while alumni sharing experiences encourages learning. For self-efficacy, offering career counseling helps students define career goals and build confidence. Mental health services nurture a positive self-image and resilience. To promote career action, institutions can provide training in resume writing and interview skills, organize job fairs for employer-student interaction, and offer job-seeking resources. Enhancing social support involves fostering faculty-student mentorships, maintaining active alumni networks for career guidance, and building sustainable business partnerships to secure student opportunities.

Enterprises can identify apt candidates by enhancing university students' learning experiences, self-efficacy, and job-seeking efforts. By partnering with higher education institutions, enterprises offer internships and real-world exposure, helping students apply theory to practice and stay updated through on-campus industry seminars. Collaborating with universities for career lectures aids students in understanding their strengths and charting career paths, with timely feedback bolstering their confidence. Regular colleges and universities recruitment events promote direct employer-student interaction, and company mentors provide invaluable guidance to students.

As for university students, upon recognizing the four pivotal factors influencing their successful employment, they can employ the following strategies to enhance their job-seeking success rate. Students should proactively engage in academic discussions, laboratory projects, and extracurricular activities to enrich both their scholarly and practical experiences. Pursuing internships or summer job opportunities will familiarize students with industry dynamics and provide authentic work experiences. It is advisable to strategize one's career trajectory in advance, setting clear objectives for employment goals. Reflecting upon one's strengths, interests, and potential is crucial for fostering self-confidence.

Persistence in the face of challenges, rather than premature surrender, bolsters self-efficacy. Proactively establishing rapport with faculty members can garner additional academic or professional advice. Participating in mentorship programs leverages the opportunity to garner extensive guidance and support from educators.

6. Conclusion

This study has several significant limitations. In terms of research methodology, the theoretical foundation of this study, SCCT, was primarily formulated within a Western cultural context, and directly applying it to Chinese culture might overlook certain employment factors for undergraduates. Therefore, future studies should attempt to include more impact factors from non-self-administered models. Secondly, using two English measurement scales, Fisher's Career Influence Inventory (1999) and Blau's Career Exploration Scale (1993), the validity of these two un-Chinese-language scales in China has not been tested on a large scale.

In terms of samples and content, model invariance tests were conducted on only 964 participants from mainland China. As a result, the findings cannot be generalized to regions outside of mainland China. Additional research is required to investigate success factors among other underrepresented majors, such as art and sports. Additionally, as the primary data for the study are from 2022, employment will change as the epidemic policy changes. Finally, this study did not include person inputs or background contextual factors, which are hypothesized to be direct predictors of learning experiences in SCCT (Lent et al., 1994). It is, therefore, still being determined how these factors relate to job-seeking results.

Therefore, further research is required to investigate these associations in Chinese university graduate samples using factor analysis. Despite its limitations, this study still provides some value at the theoretical and practical levels. SCCT mainly considers individuals' self-efficacy, outcome expectations, and goals and action paths. The combination of EFA and CFA in this study can validate the fit of the theoretical assumptions of SCCT in the Chinese cultural context at the empirical level. EFA helps to reveal those potential factors affecting university students' employment that have not yet been explicitly considered in the framework of SCCT, and provides new ideas for subsequent research. Through CFA, researchers can explicitly verify the fit of the preset model, thus confirming the validity and application boundaries of SCCT in the Chinese cultural context.

From a practical standpoint, this study offers guidance for educational practices. Recognizing the paramount influencing factors allows educational institutions to recalibrate and structure their curriculum, ensuring students prioritize the development of these aspects during their learning journey. For instance, if academic and hands-on experience are identified as vital, the universities can amplify opportunities for internships and practical involvement. For university students, understanding these key elements signifies an ability to tailor their academic and job-seeking strategies, enhancing their competitiveness and market value. During recruitment, enterprises and organizations can scrutinize applicants based on their proficiency in these four critical factors, allowing for a more precise assessment of potential value and fit. When formulating education and employment policies, governments can leverage these pivotal elements to optimize resource allocation and policy direction, fostering successful employment of graduates. Recognizing these essential factors enables vocational training institutions to design more targeted training programs, assisting students in addressing any deficiencies in these areas.

In summation, this research, which delves into the factors influencing successful employment of Chinese university graduates, not only augments and localizes theoretical frameworks but also furnishes concrete, pragmatic guidance for the universities, enterprises, university students, and governmental entities, contributing to the evolution of a more harmonious and effective educational and employment ecosystem.

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Disclosure statement

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