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Leadership and employability of students: Evidence from higher institutions in Guizhou Province, China

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ABSTRACT

The study focused on leadership and employability of students in higher education institutions (HEIs). It aimed to examine the direct and indirect effects of student leadership on employability, as well as the mediating roles of emotional intelligence and self-efficacy in this relationship. The study examined the psychological mechanisms through which student leadership fosters employability, particularly by assessing emotional intelligence and self-efficacy as mediators. The research design adopted a cross-sectional quantitative approach using structural equation modeling (SEM). The sample size consisted of 413 undergraduate students drawn from 10 universities in Guizhou Province, China. Sampling technique involved the purposive selection of institutions and the voluntary participation of students via an online survey administered through the Questionnaire Star platform. Instruments used included the Student Leadership Practices Inventory, the Emotional Intelligence Scale, the Self-Efficacy Scale, and the Employability Scale. The validity and reliability of the instruments were confirmed through confirmatory factor analysis (CFA), with Cronbach's alpha values above 0.95 for all four constructs, and KMO values exceeding 0.94, indicating strong internal consistency and sampling adequacy. Method of data analyses included measurement model testing and structural model evaluation using AMOS 27.0, with item parceling strategies applied to ensure model parsimony. Findings revealed that student leadership had significant direct effects on emotional intelligence and employability. Emotional intelligence significantly enhanced self-efficacy, which in turn positively influenced employability. However, the direct path from leadership to self-efficacy and from emotional intelligence to employability was not statistically significant. Student leadership plays a central role in enhancing employability through a dual-path psychological mechanism involving emotional intelligence and self-efficacy. This indicates that leadership is not only a functional skill but also a catalyst for internal resource development critical to employment readiness. The study suggests integrating leadership training, emotional intelligence development, and confidence-building strategies into higher education curricula to systematically foster student employability.

Keywords: Higher education, student leadership, emotional intelligence, self-efficacy, employability.

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INTRODUCTION

The employment outcomes of university graduates have become a focal concern for governments and societies worldwide, given their direct implications for social stability, economic sustainability, and labor market resilience. The employment rate of recent graduates is increasingly recognized not only as a key social indicator but also as a reflection of a nation's educational quality and developmental trajectory (Shamsutdinov et al., 2021). In the case of China, this issue has become particularly pressing due to the convergence of two trends: a slowing national economy and a continuous expansion in university enrollment. These dynamics have contributed to

a steady rise in unemployment among college students, posing both socioeconomic challenges and systemic risks (Li et al., 2025; Xiang et al., 2023).

Meanwhile, global economies have encountered mounting uncertainties, with structural shifts in labor demands, technological disruption, and cross-border competition further complicating graduates' transition into employment. These macro-level pressures have not only intensified competition in the job market but have also exposed the limitations of traditional skill-based training. As a result, the question of how to cultivate adaptable, psychologically empowered, and employment-ready graduates has become central to higher education discourse and reform efforts. In this context, employability has emerged as a critical educational outcome, prompting scholars to explore diverse pathways for enhancing students' career preparedness.

A growing body of research has responded to these challenges by investigating the multiple determinants of employability, including institutional support, curriculum relevance, professional competencies, and psychosocial development (Cheng et al., 2022; Ng et al., 2021; Zhang et al., 2022). Among these variables, student leadership has gained attention as a promising—yet under-theorized—construct. Leadership qualities in university students have been found to play an important role in stimulating self-awareness, building positive self-concepts, fostering personal growth, and enhancing holistic competencies, all of which are strongly aligned with employability expectations in contemporary labor markets (Cui et al., 2022). Leadership development also contributes to shaping students' sense of purpose, initiative, and ability to work collaboratively, thereby improving not only the quality of job seekers but also the depth of their career resilience (Kour and Bhatia, 2025; Maduforo et al., 2024).

Given the centrality of employability in higher education policy and practice, extensive empirical and theoretical work has explored its core dimensions, predictors, and developmental mechanisms. Scholars have investigated factors such as professional competence, social capital, and family background, identifying them as critical to the formation of employability among university students (Jiang et al., 2023; Zhang et al., 2022; Karaca-Atik et al., 2023; Semenova et al., 2021). However, despite these advances, important gaps remain. Notably, relatively little research has examined employability from the perspective of internal psychological traits such as leadership, or analyzed how such traits interact with other personal factors to influence employment readiness.

In particular, the psychological mechanisms linking leadership to employability are not well understood. Emotional intelligence and self-efficacy—two interrelated psychological constructs—may serve as important mediators in this relationship. Emotional intelligence, understood as the capacity to perceive, manage, and utilize emotions effectively, is closely associated with interpersonal adaptability and stress management, both of which are valued in employment settings. Likewise, self-efficacy, or individuals' belief in their ability to succeed in specific contexts, is a key determinant of motivation, goal-setting, and perseverance—traits crucial to navigating the job market. Yet, few studies have developed integrated models that capture how leadership fosters these capacities and, in turn, enhances employability.

To address these conceptual and empirical gaps, the present study proposes to investigate the influence of college students' leadership on their employability by incorporating emotional intelligence and self-efficacy as mediating factors. Grounded in social cognitive theory and ability-based emotional models, this research builds a structural equation framework to examine both direct and indirect effects within this relationship. Accordingly, the study is guided by the following two research questions:

1. How does college students' leadership influence their employability?
2. How are leadership and employability among college students connected to emotional intelligence and self-efficacy?

LITERATURE REVIEW

Theories and concepts

Leadership is a complex and evolving concept that has gone through multiple theoretical stages. Scholars generally recognize four major stages in the development of leadership theory: trait theory, behavioral theory, contingency theory, and the new stage of leadership theory, including transformational and charismatic leadership. Early leadership theories, such as trait theory, emphasized innate characteristics such as dominance, energy, and intelligence (Zaccaro, 2007), whereas behavioral theories shifted focus to observable behaviors that could be learned or trained (Bandura, 1974). Later, contingency theories proposed that leadership effectiveness depends on the fit between a leader's style and situational variables (Ayman et al., 1995; Fiedler, 1964). More recent approaches, such as transformational leadership (Bass, 1999) and leader-member exchange theory (van Breukelen et al., 2006), emphasize mutual influence, emotional connection, and shared vision between leaders and followers. These shifts indicate that leadership is no longer viewed solely as a personal trait but as a dynamic interpersonal and contextual process (Dinh and Lord, 2012). Despite extensive exploration, a unified definition of leadership remains elusive due to its multidisciplinary nature.

Employability, similarly, is a multifaceted concept with evolving definitions in different research contexts. Clarke

and Patrickson (2008) defined it as “the capability to gain initial employment, maintain employment and obtain new employment if required.” Di Gregorio et al. (2019) viewed employability as a synergistic integration of knowledge, skills, and personal attributes that prepare individuals for the labor market. Later, Fugate et al. (2004) introduced a psychological approach to employability, emphasizing personal adaptability, identity, and human/social capital. From the organizational perspective, van der Heijde and van der Heijden (2005) defined employability as “the continuous fulfilling, acquiring or creating of work through the optimal use of competences.” These frameworks indicate that employability is both an individual asset and a contextually embedded capability that requires continuous development. Therefore, for higher education students, employability encompasses academic performance, emotional intelligence, self-efficacy, teamwork, and career adaptability (Li et al., 2024; Mittal, 2021).

Leadership originated in the middle of the 19th century and was initially used to describe the British Parliament's strong political influence and authority. Scholars' research on leadership has undergone four stages: trait theory, behavioral theory, contingency theory, and the new stage of leadership theory (Uslu, 2019). Due to the complexity of leadership, there is no unified consensus on the meaning of leadership.

Leadership is the process where one individual influences and leads a group to achieve a particular goal (Zaccaro et al., 2001). Leadership is the ability to influence others, especially the ability to inspire others to achieve highly challenging goals (Bass, 2019). However, in recent years, researchers have expanded the scope of leadership. Student leadership refers to the capacity of students to influence, organize, and inspire others toward achieving shared goals in academic or organizational settings. It is generally regarded as a composite capability encompassing self-awareness, effective interpersonal communication, social responsibility, adaptability, and problem-solving skills (Zhao and Wang, 2025). Fang et al. (2024) proposed a five-dimensional model of university student leadership, including leadership charisma, decisiveness, foresight, influence, and control. As such, student leadership is not merely about holding formal positions but involves the broader cultivation of leadership-related competencies that contribute to personal growth and employability.

Currently, research on university student leadership in China emphasizes both systemic challenges and the conceptual expansion of “student leadership” as a broader competency. Dai and Li (2020) respectively analyze the institutional/curricular barriers as well as the dual mechanisms (internal attributes and external environments) influencing student leadership development. Drawing from these insights, student leadership can be defined as “a series of related abilities that students have or need to acquire in leadership roles or non-leadership roles, including both self-leadership and team leadership” (Wang, 2023). Moreover, international scholars suggest that such leadership abilities are best nurtured through integrated education combining theoretical instruction, practical application, reflection, and mentorship (Shek et al., 2025).

The students' employability refers to their capacity to secure and maintain employment. Specifically, employability involves students demonstrating abilities that align with organizational requirements during job-seeking, enabling them to acquire and retain job opportunities. Employability is the capacity to learn the newest job skills and adjust to changing conditions with flexibility, most notably the capacity to be open to change (van Harten et al., 2020). Therefore, HEI students' employability is a comprehensive incorporation of capabilities and qualities. Improving these skills and qualities is vital for their successful employment, career development, and adaptation to the workplace environment. Given the perspectives of the researchers on the concept of employability, and considering that the focus of this study is college students, the authors believe that employability refers to the abilities acquired and maintained by college students through education and practice, which are necessary for their work. Furthermore, it can be seen as the traits that enable college students to meet the requirements of organizations, thus constituting their competence for work.

There is a diversity of academic studies on college students' employability at the moment, with academics looking at many different kinds of variables impacting it. These studies delve into family background, teamwork, self-confidence, and professional competence. HEI students from diverse family backgrounds demonstrate varied levels of employability (Qian et al., 2024). Family background significantly impacts employability and indirectly influences it through factors like individual effort, university level, and education quality (Nauta et al., 2009). Moreover, the curriculum design, teaching methods, and career guidance within the university environment all influence college students' employability (Okolie et al., 2020). College students may improve their capacity to adapt to the constantly shifting demands of the labor market by participating in clubs and gaining relevant job experience, which serve as vital connections between their academic education and future careers (Jackson and Tomlinson, 2022). Despite the extensive research on these factors, few researchers take college students' leadership ability as an important factor in studying the impact of college students' leadership on their employability.

Research hypotheses

HEI students' leadership is considered a vital asset in

enhancing their employability, primarily by fostering communication, collaboration, and influence capabilities that align with labor market demands. Previous research has indicated that students with leadership experience often exhibit stronger interpersonal and team coordination skills, which are key components of employability frameworks (Cui et al., 2022; Kour and Bhatia, 2025). Leadership roles also enhance students' self-regulatory capacities and their ability to adapt to dynamic environments—traits highly valued in job performance (Houghton et al., 2011). Moreover, McCormick et al. (2002) argue that individuals with leadership experiences tend to develop higher self-efficacy, which further contributes to confidence and persistence in job seeking. These findings suggest that student leadership plays not only a symbolic role in academic settings but also contributes directly to real-world employment readiness. Developing HEI students' leadership, therefore, not only aligns with educational objectives but also produces measurable employability gains (Tomasella et al., 2023). Based on this reasoning, the following hypothesis is proposed:

H1: The employability of HEI students and their leadership skills are positively correlated.

HEI students' leadership and self-efficacy are strongly correlated. Students who possess higher levels of self-efficacy typically exhibit more confidence in their capacity to accomplish objectives and exert a larger effect on others, hence resulting in better leadership qualities. Consequently, leadership and self-efficacy are related according to social cognitive theory. It suggests that managers with high self-efficacy are perceived by their direct collaborators as taking more initiative, displaying high resistance to challenging circumstances, and promoting flexible viewpoints (Anderson et al., 2008). Furthermore, it appears that individuals who have high self-efficacy typically seek leadership responsibilities, putting in greater effort to fulfill them and demanding more time when faced with challenges (McCormick et al., 2002). Active leadership responsibilities are more likely to be assumed by HEI students who have more self-efficacy. They feel that their capacity for problem-solving, motivating others, and achieving objectives makes them able to take on leadership responsibilities in groups. At the same time, taking on leadership roles can enhance an individual's self-efficacy. By leading teams and achieving success, HEI students strengthen their confidence in problem-solving and facing challenges, thus further enhancing self-efficacy. Thus, this research proposes:

H2a: The leadership and self-efficacy of HEI students are positively correlated.

HEI students' employability is greatly impacted by self-efficacy (S.E.), which increases their enthusiasm and initiative when looking for work. Students who feel they can find acceptable jobs in the job market are more inclined to trust in their abilities, which makes them more willing to actively search out work prospects, send resumes, and engage in interviews. During the job search process, HEI students can gather information through various means, such as online platforms and on-site recruitment events. Undergraduates who get various types of assistance will gain more self-efficacy and will be further equipped to accomplish their professional aspirations (Yao-Ping et al., 2018). Students have high self-efficacy can maintain positive beliefs and thus improve their ability to deal with problems. In short, students with higher self-efficacy have better employability (Tsai et al., 2024). Additionally, students who have high self-efficacy are more inclined to overcome obstacles, have an optimistic outlook, and deal with stresses and changes in their jobs, which, in turn, improves their employability. Therefore, this study posits that:

H2b: Self-efficacy and HEI students' employability are positively correlated.

Emotional Intelligence (E.I.) refers to a person's capability to recognize, understand, and regulate their feelings as well as their capability to recognize, understand, and process the feelings of others (Mayer et al., 2008). Emotional intelligence and leadership among college students are significantly correlated. Students who possess strong leadership qualities are more capable of controlling and moderating the emotions of others, avoiding emotional disturbances that might harm team dynamics and productivity (Houghton et al., 2011). Additionally, emotional intelligence helps HEI students build and maintain positive interpersonal relationships, which is crucial in leadership (Por et al., 2011). Leaders need to communicate and collaborate effectively with team members, and emotional intelligence assists them in better understanding others' emotions and needs, facilitating better interactions and enhancing their leadership abilities. Therefore, this study posits that:

H3a: Emotional intelligence and leadership among HEI students are positively correlated.

A key element of HEI students' employability is emotional intelligence. Since it helps them to build solid relationships with others and achieve in the profession, students who have high emotional intelligence have more chances to succeed in the job search process. Additionally, emotional intelligence helps HEI students build and maintain positive interpersonal relationships during job interviews, which is essential for working harmoniously with colleagues, superiors, and clients (Poudel, 2023). HEI students with high emotional intelligence can better understand others' emotions and needs, enabling them to communicate and

collaborate effectively with others. Emotional intelligence equips HEI students with adaptability and resilience, allowing them to cope better with career changes and challenges. They can flexibly adjust their emotions and behaviors to adapt to different work environments and situations. The academic achievement and future employability of these students are significantly influenced by their emotional intelligence (Rizwan et al., 2019). Therefore, this study develops:

H3b: Emotional intelligence and HEI students' employability are positively correlated.

Higher emotional intelligence among HEI students increases the likelihood that they will comprehend their skills and emotional states clearly and concisely. They can better manage their emotions, handle negative emotions, and remain calm and optimistic when facing challenges. This emotional intelligence helps enhance HEI students' self-efficacy, meaning they believe they can overcome difficulties and succeed. Furthermore, those with high emotional intelligence are more capable of handling emotional problems and keeping emotions from clouding their judgment while applying for jobs (Strickland, 2000). Approaching problems and conflicts with objectivity and composure facilitates problem-solving, strengthening HEI students' self-efficacy. The way individuals manage their emotions and behave has a big influence on their self-efficacy (Ran et al., 2022). The development of emotional intelligence in college students is essential to their self-efficacy and confidence. Therefore, this study develops:

H4: Self-efficacy and emotional intelligence are positively correlated.

Research model

Figure 1 shows the final research model for this study. The independent variable (college student leadership), mediating variables (self-efficacy, emotional intelligence), and dependent variable (employability) are all included in the study model. Employability is significantly affected by college student leadership. Furthermore, leadership among college students has a significant impact on emotional intelligence and self-efficacy, and employability is positively impacted by both self-efficacy and emotional intelligence. Additionally, emotional intelligence raises self-efficacy.

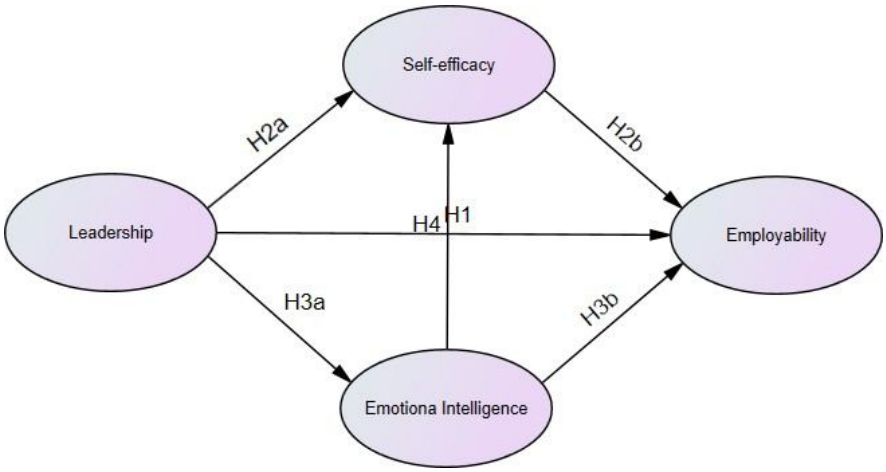

Figure 1. Theoretical structural equation model.

METHOD

Data collection

To ensure scientific rigor and practical relevance, this study selected the top 10 universities in Guizhou Province, based on statistical data provided by the Guizhou Provincial Department of Education, as the sampling frame for data collection. The survey was administered via the "Questionnaire Star" platform and distributed to students from the selected institutions. A total of 413 valid responses were collected, comprising 205 senior students and 208 junior students. As shown in Table 1, 63.9% of the respondents were male, while 36.1% were female. In terms of age distribution, the majority of participants were between 22 and 23 years old, which is consistent with the

typical age range of undergraduate students. Regarding leadership training participation, 67.1% of students reported having never participated in any such activities, and 20.3% indicated only one instance of participation, suggesting a generally low level of engagement in formal student leadership training programs. Notably, 61.7% of the surveyed students had experience serving as class cadres, aligning with the study's focus on student leadership and supporting the credibility and relevance of the collected data.

Table 1. Descriptive statistics.

Characteristics	Category	Count	Percent
Gender	Male	264	63.9%
	Female	149	36.1%
Class	Junior	208	50.4%
	Senior	205	49.6%
Location	Village	369	89.3%
	Town	44	10.7%
Age	18-19	4	1.1%
	20-21	89	21.5%
	22-23	243	58.8%
	≥24	77	18.6%
Per capita monthly household income (Unit: Yuan)	≤ 3000	238	57.6%
	3001-5000	138	33.4%
	5001-7000	35	8.6%
	7001-9000	1	0.2%
	>9000	1	0.2%
Class committee experience	Yes	255	61.7%
	No	158	38.3%
The number of leadership training sessions attended	0	277	67.1%
	1	84	20.3%
	2	36	8.7%
	3	9	2.2%
	≥4	7	1.7%
	Total	413	100.0%

Measurement of variables

All original scales were developed in English and were translated into Chinese following Brislin's (1980) back-translation method to ensure linguistic and conceptual equivalence. The initial translation was conducted by a bilingual scholar, and a separate expert performed the back-translation. Discrepancies were resolved through discussion among three bilingual researchers to ensure accuracy and cultural relevance for Chinese undergraduate students. A pilot test was then conducted with 30 students in Guizhou Province to confirm the clarity, contextual appropriateness, and psychometric properties of the translated items.

This study includes four scales: college students' leadership scale, college students' employability scale, self-efficacy scale, and emotional intelligence scale. The student leadership practices inventory (SLP scale) was created by Posner and Kouzes (1993). The scale design of employability is from Rothwell et al. (2008). The scale design of self-efficacy is from Ng and Lucianetti (2016). The scale design of emotional intelligence is from Wong and Law (2002).

To mitigate the risk of common method bias (CMB), several procedural and statistical remedies were adopted. Procedurally, all respondents were assured of anonymity and the absence of right or wrong answers to minimize evaluation apprehension. Psychologically distinct constructs were separated across different sections of the questionnaire. Statistically, Harman's single-factor test was performed, and the results showed that the first factor accounted for less than 40% of the total variance, indicating that common method bias was not a major concern in this study. Due to the relatively large number of items in the original scales and the need to enhance model parsimony and ensure reliable parameter estimation in SEM, item parceling was applied. Specifically, for each construct, items were randomly assigned into 2 to 3 parcels based on internal consistency and factor loading similarity (following the recommendations of Little et al., 2002). This strategy helped reduce measurement error and improve the overall model fit without distorting the underlying factorial structure of the constructs.

RESULTS

Validity test and reliability

Ensuring the scientific validity of the analysis necessitates a rigorous assessment of the measurement quality employed in this study. To evaluate the internal consistency of each construct, Cronbach's alpha coefficient was utilized as the primary reliability test. As presented in Table 2, the reliability analysis yielded Cronbach's alpha values of 0.960 for employability, 0.966 for emotional intelligence, 0.968 for self-efficacy, and 0.950 for leadership among college students. All scale-level alpha coefficients exceeded 0.90, and the alpha values for individual dimensions ranged from 0.757 to 1.000, indicating excellent internal consistency. These results confirm that the measurement instruments used in this study possess high reliability and demonstrate robust internal consistency, thereby supporting the overall dependability of the data collected.

Table 2. Reliability analysis of scales.

Measurement scale	Cronbach's alpha	Number of items
SLP	**0.950**	**15**
—MO	0.898	3
—IN	0.870	3
—CH	0.833	3
—EO	0.882	3
—EN	0.837	3
EP	**0.960**	**16**
—UN	0.893	3
—FI	0.905	5
—MA	0.938	6
—SF	0.757	2
EI	**0.966**	**16**
—EX	0.915	4
—EV	0.913	4
—MAN	0.898	4
—US	0.934	4
SE	**0.968**	**13**
—INN	0.924	5
—PE	0.933	5
—DC	0.919	3

Notes: SLP = student leadership; EP = employability; EI = emotional intelligence; SE = self-efficacy; MO = Model; IN= Inspire; CH = Challenge; EO = Enable; EN= Encourage; UN = university; FI = field; MA= market; SF = self-belief; EX= expressive ability; EV = evaluating capability; MAN = management ability; US = Using ability; INN = innovate; PE = persuade; DC = deal with change

Prior to doing a confirmatory component analysis, the verification variables' partial and simple correlation coefficients were calculated using the Kaiser-Meyer-Olkin (KMO) test and Bartlett's sphericity test to ensure the study was scientific. The data is more logical and appropriate for factor analysis, the stronger the correlation. The prevailing consensus is that data are more suitable for factor analysis the higher the KMO index. When the KMO index is between 0.8 and 0.9, it signifies that the data is appropriate for factor analysis; when the KMO index is over 0.9, it indicates that the data is extremely appropriate for factor analysis. A KMO index of less than 0.5 suggests that factor scoring is not appropriate for the given data.

Table 3 displays the findings of this study's KMO and Bartlett's Test. The KMO value for the SLP scale is 0.947, with Bartlett's Test of Sphericity being 4 728.265, $p<0.01$. For the E.P. scale, the KMO value is 0.960, with Bartlett's Test of Sphericity being 5 587.533, $p<0.01$. The KMO value for the E.I. scale is 0.964, with Bartlett's Test of Sphericity being 6 254.390, $p<0.01$. Finally, for the S.E. scale, the KMO value is 0.965, with Bartlett's Test of Sphericity being 5 374.777, $p<0.01$. According to these findings, every scale's structure is appropriate for use in confirmatory factor analysis.

Table 3. KMO and Bartlett's test.

Scales		SLP	EP	EI	SE
KMO measure of sampling adequacy		0.947	0.960	0.964	0.965
Bartlett's test of sphericity	Approx. Chi-Square	4 728.265	5 587.533	6 254.390	5 374.777
	df.	105	120	120	78
	Sig.	0.000	0.000	0.000	0.000

KMO = Kaiser-Meyer-Olkin; Approx = approximate chi-square test; df. = degree of freedom; Sig. = significance.

Confirmatory factor analysis (CFA)

The CFA of college students' leadership

The findings indicate that each dimension's AVE value in the leadership scale validity test for college students is greater than 0.5, as shown by the analysis results in Table 4. Additionally, all C.R. values are higher than 0.8. This suggests that the composite reliability and convergence validity of each dimension are both suitable.

Table 4. Convergent validity and composite reliability test results of each factor (SLP).

Path relationship			First-order			Second-order		
			Factor loading	AVE	CR	Factor loading	AVE	CR
EN1	<---	EN	0.75					
EN2	<---	EN	0.831	0.638	0.841	0.821		
EN3	<---	EN	0.813					
IN1	<---	IN	0.868					
IN2	<---	IN	0.876	0.731	0.89	0.933		
IN3	<---	IN	0.819					
CH1	<---	CH	0.745					
CH2	<---	CH	0.742	0.597	0.816	0.986	0.804	0.953
CH3	<---	CH	0.827					
MO1	<---	MO	0.866					
MO2	<---	MO	0.855	0.722	0.886	0.853		
MO3	<---	MO	0.872					
EO1	<---	EO	0.761					
EO2	<---	EO	0.834	0.682	0.865	0.881		
EO3	<---	EO	0.878					

After conducting reliability and validity tests, the model's fit was studied using AMOS 27.0 software. This type of model fit examines the relationships between variables using Structural Equation Modeling (SEM). In structural equation modeling, fit indices are used to evaluate how well the model fits the data. Commonly used indices include χ^2/df, Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), Normed Fit Index (NFI), and Incremental Fit Index (IFI).

Table 5. Model fit index of the college student leadership scale.

Fit index	Standard	Value
CMIN/DF	1-3 is excellent, 3-5 is good	3.449
RMSEA	<0.05 is excellent, <0.1 is good	.077
IFI	>0.9 is excellent, >0.08 is good	.957
TLI	>0.9 is excellent, >0.08 is good	.945
CFI	>0.9 is excellent, >0.08 is good	.957

As can be seen from Table 5, the CMIN/DF for college student leadership is 3.449, RMSEA is .077, IFI value is 0.957, TLI value is 0.945, and CFI value is 0.957. All these indices have reached good levels, indicating a good fit for college student leadership.

The CFA of the employability scale

Table 6 shows the validity test and analysis results of the employability scale for college students. It can be understood from the data that the minimum AVE value of each dimension is 0.612, all of which are > 0.5. The minimum value of C.R. is 0.759, and all values are > 0.7. This suggests that the composite reliability and convergence validity of each dimension are both good.

Table 7 shows the CMIN/DF for college student employability is 3.346, RMSEA is 0.075, IFI value is 0.958, TLI value is 0.949, and CFI value is 0.958. All these indices have reached good levels, indicating a good fit for the college student employability scale.

Table 6. Composite reliability and convergent validity test results of each factor (EP).

Path relationship			First-order			Second-order		
			Factor loading	AVE	CR	Factor loading	AVE	CR
EP1	<---	SF	0.821	0.612	0.759	0.885		
EP2	<---	SF	0.742					
EP3	<---	UN	0.819					
EP4	<---	UN	0.877	0.738	0.894	0.898		
EP5	<---	UN	0.879					
EP6	<---	FI	0.798					
EP7	<---	FI	0.765					
EP8	<---	FI	0.824	0.656	0.905	0.943	0.826	0.95
EP9	<---	FI	0.799					
EP10	<---	FI	0.86					
EP11	<---	MA	0.785					
EP12	<---	MA	0.848					
EP13	<---	MA	0.839	0.719	0.939	0.909		
EP14	<---	MA	0.893					
EP15	<---	MA	0.845					
EP16	<---	MA	0.875					

Table 7. Model fit index of the employability scale.

Fit index	Standard	Value
CMIN/DF	1-3 is excellent, 3-5 is good	3.346
RMSEA	<0.05 is excellent, <0.1 is good	.075
IFI	>0.9 is excellent, >0.08 is good	.958
TLI	>0.9 is excellent, >0.08 is good	.949
CFI	>0.9 is excellent, >0.08 is good	.958

The CFA of the emotional intelligence scale

The outcomes of the analysis listed in Table 8 demonstrate that the minimum AVE value of each dimension is 0.687, all of which are > 0.5. The minimum C.R. value is 0.898, all of which are > 0.7. Overall, this indicates that all dimensions of the emotional intelligence scale have good convergence validity and composite reliability.

Table 8. Composite reliability and convergent validity test results of each factor (E.I.).

Path relationship			First-order			Second-order		
			Factor loading	AVE	CR	Factor loading	AVE	CR
EI1	<---	EX	0.815	0.73	0.915	0.874	0.846	0.956
EI2	<---	EX	0.88					
EI3	<---	EX	0.861					
EI4	<---	EX	0.861					
EI5	<---	EV	0.811	0.729	0.915	0.952		
EI6	<---	EV	0.873					
EI7	<---	EV	0.853					
EI8	<---	EV	0.876					
EI9	<---	MAN	0.851	0.687	0.898	0.962		
EI10	<---	MAN	0.818					
EI11	<---	MAN	0.827					
EI12	<---	MAN	0.819					
EI13	<---	US	0.901	0.765	0.929	0.888		
EI14	<---	US	0.856					
EI15	<---	US	0.866					
EI16	<---	US	0.874					

Table 8 shows that the CMIN/DF for the emotional intelligence scale is 3.468, RMSEA is 0.077, IFI value is 0.961, TLI value is 0.952, and CFI value is 0.961. All these indices have reached good levels, indicating a good fit for the emotional intelligence scale.

Table 9. Model fit index of the emotional intelligence scale.

Fit index	Standard	Value
CMIN/DF	1-3 is excellent, 3-5 is good	3.468
RMSEA	<0.05 is excellent, <0.1 is good	.077
IFI	>0.9 is excellent, >0.08 is good	.961
TLI	>0.9 is excellent, >0.08 is good	.952
CFI	>0.9 is excellent, >0.08 is good	.961

The CFA of the self-efficacy scale

The findings in Table 10 demonstrate that the minimum AVG value of each dimension of the emotional intelligence scale was 0.71, which was > 0.5. At the same time, the minimum C.R. value of all dimensions of the emotional intelligence scale was 0.92, which was > 0.7, and met the requirements for further research and analysis. So, overall, this indicates that all dimensions of the emotional intelligence scale have good convergence validity and composite reliability.

Table 10. Composite reliability and convergent validity test results of each factor (S.E.).

Path relationship			First-order			Second-order		
			Factor loading	AVE	CR	Factor loading	AVE	CR
SE1	<---	DC	0.882					
SE2	<---	DC	0.898	0.792	0.92	0.951		
SE3	<---	DC	0.89					
SE4	<---	INN	0.851					
SE5	<---	INN	0.802					
SE6	<---	INN	0.849	0.71	0.925	0.958		
SE7	<---	INN	0.878				0.921	0.972
SE8	<---	INN	0.832					
SE9	<---	PE	0.86					
SE10	<---	PE	0.802					
SE11	<---	PE	0.873	0.738	0.934	0.97		
SE12	<---	PE	0.877					
SE13	<---	PE	0.882					

Table 11 uncovers that the CMIN/DF for the self-efficacy scale is 3.216, RMSEA is 0.073, IFI value is 0.974, TLI value is 0.967, and CFI value is 0.974. All these indices have reached good levels, indicating a good fit for the self-efficacy scale.

Table 11. Model fit index of the self-efficacy scale fit index.

Fit index	Standard	Value
CMIN/DF	1-3 is excellent, 3-5 is good	3.216
RMSEA	<0.05 is excellent, <0.1 is good	.073
IFI	>0.9 is excellent, >0.08 is good	.974
TLI	>0.9 is excellent, >0.08 is good	.967
CFI	>0.9 is excellent, >0.08 is good	.974

Model and hypothesis testing

To construct the structural model, this study employed item parceling. The specific approach of this method is to combine two or more items in the same scale into a new comprehensive index, and analyze the data according to the comprehensive score (average or total score of each item) of the two or more indicators.

This study's college student leadership scale, originally comprising 15 items, was parcelled into five new indicators based on five dimensions. Similarly, the college student employability scale, originally consisting of 16 items, was parcelled into four new indicators based on four dimensions. Initially comprising 16 items, the emotional intelligence scale was parcelled into four new indicators based on four dimensions. Lastly, the self-efficacy scale, comprising 13 items, was parcelled into three new indicators based on three dimensions.

After conducting reliability and validity tests on scales measuring college student leadership, employability, self-

efficacy, and emotional intelligence, college student leadership is now considered the independent variable, employability is the dependent variable, and self-efficacy and emotional intelligence are mediating variables for model construction. The model's fit was studied using AMOS 27.0 software, employing Structural Equation Modeling (SEM) to further study the correlations between variables. As shown in Table 12, the model's CMIN/DF is 3.525, RMSEA is 0.078, IFI value is 0.965, TLI value is 0.954, and CFI value is 0.965. All these indices have reached good levels, representing a good fit for the model.

Table 12. Model fit index.

Fit index	Standard	Value
CMIN/DF	1-3 is excellent, 3-5 is good	3.525
RMSEA	<0.05 is excellent, <0.1 is good	.078
IFI	>0.9 is excellent, >0.08 is good	.965
TLI	>0.9 is excellent, >0.08 is good	.954
CFI	>0.9 is excellent, >0.08 is good	.965

Figure 2 depicts the path diagram of the model created after importing the questionnaire data into AMOS, illustrating the linear relationships between variables. Ellipses represent latent variables, with SLP as the independent variable, E.I. and S.E. as mediating variables, and E.P. as the dependent variable. Rectangles represent observed variables. Circles within rectangles indicate measurement errors (e.g., e1 to e19). Unidirectional arrows connecting two variables suggest causal relationships, with arrows pointing from the independent variable to the factor variable. To measure the degree of effect or relationship between variables, path coefficients are represented by the values on the arrows. In Table 13, the route coefficient values between the independent and dependent variables in Figure 2 are described in detail.

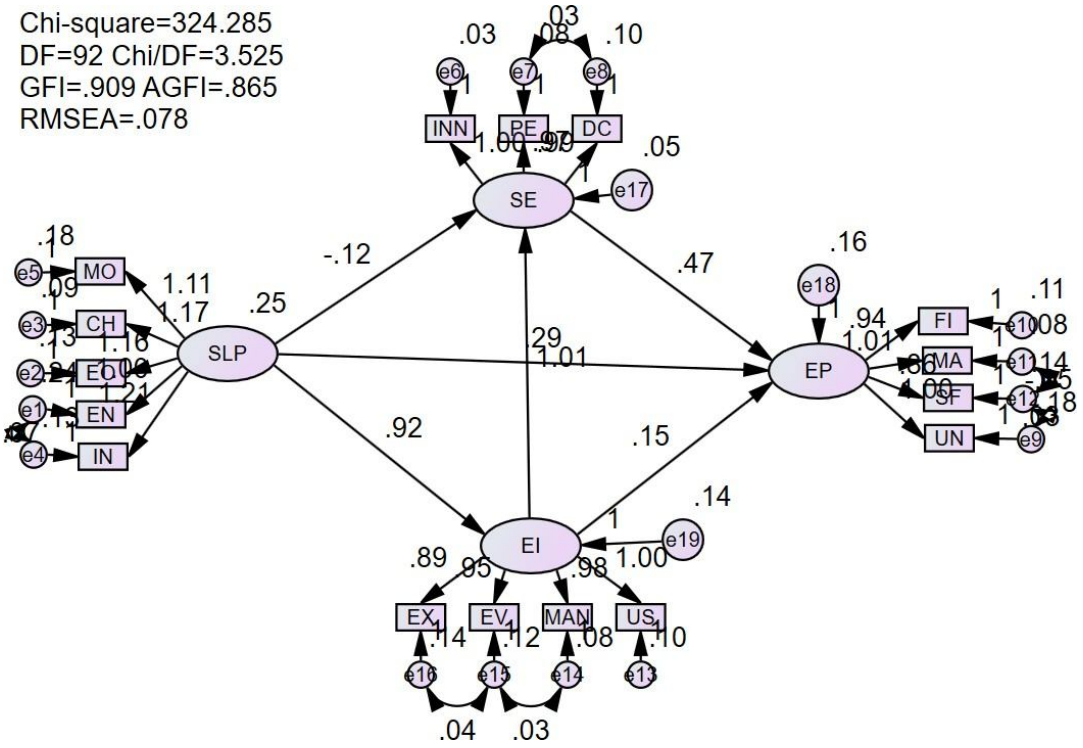

Figure 2. Path Diagram of the model.

Figure 2 reflects the unstandardized regression coefficients of the research model, which are displayed as the study's path coefficients in Table 13. The standard error of the parameter is denoted by S.E., while the standard error of the parameter measuring the critical ratio is represented by C.R. Based on the study results, the hypothesis is supported if the path coefficient reaches the level and the C.R. is larger than 1.96 and $p < 0.05$. On the other hand, if this is not the case, the study hypothesis is not validated.

To assess the route structural equation model (SEM) in this research, AMOS 27 was utilized. Table 13 presents the path analysis results, which demonstrate that the relationship hypotheses testing demonstrated a significant and positive correlation between self-efficacy and emotional intelligence ($\beta = 1.005$, $p < 0.001$), as well as a significant and positive relationship between employability and self-efficacy ($\beta = 0.467$, $p < 0.001$). Student leadership had a beneficial impact on emotional intelligence ($\beta = 0.923$, $p < 0.001$) and student leadership had a beneficial impact on employability ($\beta = 0.29$, $p < 0.001$). As a result, H1, H2b, H3a, and H4 are accepted. Self-efficacy is negatively impacted by leadership among college students ($\beta = -0.12$, $p = 0.058$), and there is a 0.151 path association between employability and emotional intelligence, with a critical ratio (C.R.) less than 1.96 and $p > 0.05$. Consequently, H2a and H3b are not validated.

Table 13. Path coefficient of structural equation model.

Hypothesis		Path		Path coefficient	S.E.	C.R.	P	Results
H1	SE	<---	EI	1.005	0.06	16.875	***	Supported
H2a	SE	<---	SLP	-0.12	0.063	-1.895	0.058	Not Supported
H2b	EP	<---	SE	0.467	0.136	3.437	***	Supported
H3a	EI	<---	SLP	0.923	0.067	13.692	***	Supported
H3b	EP	<---	EI	0.151	0.166	0.911	0.362	Not Supported
H4	EP	<---	SLP	0.29	0.086	3.367	***	Supported

*P < 0.05, **P < 0.01, ***P < 0.001

Among the proven hypotheses, college student leadership is a significant influencing factor on employability. Students with leadership skills often possess better self-management abilities and can develop a leadership style that suits them. Cultivating this ability will play a greater role in team-based job searches, as students can continuously enhance their leadership skills, improving employability. The ultimate goal of fostering college student leadership aligns with enhancing student employability, with similar practical outcomes. This also validates the research hypothesis that college student leadership positively impacts employability (H4).

Emotional intelligence has a crucial positive influence on self-efficacy. Students with good emotional intelligence can better manage their emotions during job searches, handle negativity, and maintain composure and optimism when facing challenges. That will enhance the student's employability. Therefore, this study supports the hypothesis that emotional intelligence has a major influence on self-efficacy (H1).

Employability significantly benefits from self-efficacy. Students who have greater self-efficacy are better positioned. They are more likely to actively seek job opportunities, submit resumes, and participate in interviews because they believe they can find suitable positions in the job market. This aligns with Guan et al. (2013)'s study, which shows that overall self-efficacy influences professional goals, which - in turn - influences employability, confirming the study's finding that employability is significantly positively impacted by self-efficacy (H2b).

Emotional intelligence is significantly enhanced by college student leadership. Students with strong leadership skills can effectively manage and handle others' emotions, avoiding negative impacts from emotional instability. This is consistent with the findings of Sánchez et al. (2020), where senior executives tend to score higher in emotional intelligence compared to the general population, proving the research hypothesis (H3a) that leadership among college students significantly improves emotional intelligence.

There is no evident relationship between leadership and HEI students' self-efficacy. Although student leadership was hypothesized to positively influence self-efficacy, the result (H2a) was not statistically significant. One possible explanation lies in the domain-specific nature of leadership development among college students. In Chinese HEIs, leadership experiences—such as serving as class cadre or student club officer—may emphasize organizational responsibility and social recognition more than personal cognitive empowerment. This may lead to an inflated sense of external competence that does not translate into genuine internal efficacy. Prior research also suggests that leadership behaviors driven by social desirability or

institutional roles may fail to foster the internal belief system necessary for self-efficacy development (Bandura, 1997; Ng and Lucianetti, 2016). Furthermore, in the context of Guizhou Province, where formal leadership training is scarce, students may equate leadership with positional authority rather than skill-based confidence, weakening the SLP–SE link. Similarly, the hypothesized direct effect of emotional intelligence on employability (H3b) was not supported. This finding contradicts some previous studies that highlight EI as a predictor of workplace success (Wong and Law, 2002). A possible explanation is that the effect of emotional intelligence on employability among university students may be largely indirect, operating through mediators such as self-efficacy or stress management (Schunk and DiBenedetto, 2020). Additionally, emotional intelligence is a complex, multidimensional construct. While aspects like emotion regulation may enhance employability, heightened emotional sensitivity could lead to overanalysis and job-related anxiety, particularly in uncertain employment environments like Guizhou. These conflicting facets may neutralize the overall effect, rendering it statistically insignificant in this model.

DISCUSSION

Theoretical implications

This study advances the theoretical understanding of employability by proposing a comprehensive framework that foregrounds student leadership as a core psychological competency influencing university students' employment readiness. Existing literature has often emphasized external or structural determinants of employability—such as institutional prestige, internship experience, or disciplinary skills training—while paying insufficient attention to the internal developmental capacities of students (Gupta and Mahajan, 2024; Monteiro et al., 2025; Schueller, 2023). This research repositions student leadership not as a contextual or peripheral factor, but as an intrinsic, trainable capability that interacts with students' cognitive and emotional systems, thereby offering a more agentic and personalized account of employability development.

In doing so, the study responds to the theoretical gap concerning how internal psychological constructs operate in conjunction to shape employability. Specifically, by incorporating self-efficacy and emotional intelligence as sequential mediators, the model transcends linear cause-effect assumptions and offers a dual-path explanatory structure grounded in social cognitive theory and ability-based models. Prior studies have largely treated these constructs as independent predictors (Cuartero and Tur, 2021; Pirsoul et al., 2023; Udayar et al., 2020), yet this study shows that student leadership can activate self-efficacy beliefs and emotional regulation capacities, which in turn reinforce students' employability. This integrated approach refines our understanding of how students internally mobilize psychological resources to meet external career expectations.

Moreover, the study contributes a theoretically cohesive model that connects leadership, emotional intelligence, and self-efficacy within a unified competence development pathway. Rather than isolating each psychological trait, this research illustrates their dynamic interplay, capturing how personal influence, motivational confidence, and emotional regulation jointly form employability capital. This framework aligns with emerging calls in higher education research for holistic, psychologically grounded models that explain not only what makes students employable, but how such qualities can be cultivated through leadership development, emotional training, and identity-based learning interventions.

Through this integrative perspective, the research expands existing theoretical boundaries by offering a process-oriented, multidimensional model of employability, grounded in the developmental potential of university students' psychological competencies. It thus contributes to a more nuanced and actionable theory of graduate employability, with implications for both educational psychology and employability policy in higher education.

Practical implications

Based on the above research findings, this research paper proposes three recommendations to enhance college students' employability:

First, the government should raise awareness of the importance of college student leadership, emphasizing the effect of college student leadership, self-efficacy, and emotional intelligence on employability. At the national level, a robust mechanism for cultivating college student leadership should be established, including introducing courses specifically designed for developing college student leadership, integrating leadership training into the regular educational curriculum, and aligning it with students' major courses to form a comprehensive training system.

Second, universities should dynamically adjust the structure and layout of higher education majors and resources, constantly develop new professional skills training courses, reform teaching and training models, and combine theoretical knowledge with reality and practice. And, universities should establish dedicated institutions for student leadership training, organizing various student organizations, clubs, or volunteer teams to provide students with opportunities to actively engage in organization and management activities, thereby enhancing their leadership skills and fostering their self-efficacy and emotional intelligence. This would create a

conducive environment at the institutional level, which, in turn, would lead to the development of the students' leadership skills.

Finally, during the period of university, while learning theoretical knowledge, college students must earnestly strengthen the exercise of practical ability, actively participate in various training held by the university to improve job-hunting ability, and various professional ability training related to the major, actively participate in practical practice activities, in the practice process to exercise their theoretical knowledge, in practice to sharpen their job-hunting skills and methods. And, college students should recognize student leadership's significant role in employability. Leadership is a crucial skill that holds significant importance for personal development and future career chances.

Conclusion

This study investigated the relationship between college students' leadership and their employability, integrating self-efficacy and emotional intelligence as mediating variables. Drawing on survey data from 413 students at ten universities in Guizhou Province, we constructed a structural equation model to explore the internal psychological mechanisms that link leadership traits to employment readiness. The results confirmed that student leadership significantly enhances employability both directly and indirectly through the dual pathways of self-efficacy and emotional intelligence. This finding contributes to the growing body of research that highlights the role of personal psychological competencies in shaping employability, offering both theoretical insight and practical guidance for higher education institutions aiming to strengthen graduate outcomes.

Despite these contributions, the study is not without limitations. The use of a geographically limited sample—students from ten universities in Guizhou Province—may constrain the generalizability of the findings to broader national or international contexts. Additionally, the research employed a cross-sectional design, which limits the ability to infer causal relationships or developmental patterns over time. However, these limitations do not invalidate the study's conclusions. Guizhou, as a province undergoing rapid educational development, provides a relevant and diverse student population for examining leadership and employability. Furthermore, the structural equation model used in the analysis is robust and statistically sound, offering scientifically valid insights into the internal dynamics of employability formation.

Future research may extend this work by employing longitudinal data to track how leadership skills evolve and influence employability over time. Expanding the sample across multiple regions and university types would also improve external validity and provide a more comprehensive understanding of the model's applicability. Moreover, incorporating experimental or intervention-based approaches—such as leadership training programs or emotional intelligence workshops—could further validate the causal relationships identified in this study and inform targeted strategies for enhancing student outcomes in higher education.

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Conflicts of interest

The authors of this research paper state that there is no conflict of interest.

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