

## Self-Efficacy in Academic Competitions: Key Influencing Factors for Private University Students

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**Abstract:** The innovative teaching model that integrates coursework and competitions is conducive to improving students' comprehensive abilities. Encouraging students to actively participate in subject competitions is an effective means to achieve educational goals. For private university students, this presents an opportunity for self-improvement and enhances their academic backgrounds, laying a solid foundation for building core competencies. This paper, focusing on private university students, primarily employs literature review and questionnaire methods to explore the factors influencing competition self-efficacy and how these factors interact. The research shows that both social support and identity recognition have significant positive impacts on competition self-efficacy. Additionally, identity recognition positively affects competition self-efficacy through the mediating role of social support. In response to these findings, the paper proposes recommendations for promoting teaching innovation in private universities, such as improving competition incentive mechanisms, enhancing academic identity recognition, fostering a supportive environment, and stimulating individual potential. This study also provides new perspectives for future research on self-efficacy and broadens the scope of related studies.

**Keywords:** Subject competitions; Private university students; Competition self-efficacy; Influencing factors

### 1. Introduction

The traditional theory-based teaching model no longer meets the current demand for enhancing the core competitiveness of university students. In recent years, many

universities have advocated for innovative teaching models that integrate competitions with coursework, promoting learning through competition. Subject competitions are also an effective means of aligning academic knowledge with industry practices. Private university students, unlike their counterparts from prestigious or public universities, often demonstrate lower motivation and success rates in subject competitions due to factors such as their educational background. This issue hampers the reform and development of private education. Existing research indicates that innovative teaching models combining subject competitions and classroom instruction can help mitigate private university students' educational and skill deficiencies, boosting their confidence and competitiveness. This study focuses on the self-efficacy demonstrated by private university students during competitions, investigating the factors that influence their self-efficacy and how these factors interact. By enhancing students' competition-related self-efficacy, this study further analyzes how the "integration of coursework and competition" model can fully play to its strengths, thereby improving private university students' core competitiveness, providing a foundation for their future employment, and offering insights for future research.

### 1.1 Current Research Status

The concept of self-efficacy was introduced by renowned American psychologist Albert Bandura in 1977. It refers to an individual's perception or belief in their ability to effectively control various aspects of their life. Current research on self-efficacy primarily focuses on academic self-efficacy and its relationship with other related factors. Academic self-efficacy is an extension of the self-efficacy concept in educational contexts. Bandura (1986) defined academic self-efficacy

as students' judgments about their ability to complete learning tasks and achieve learning goals [1,2]. Existing studies reflect researchers' understanding of the meaning and role of self-efficacy and explain its relationship with other related factors, such as the relationship between university students' learning engagement, perceived social support, and academic self-efficacy, which clarifies the mechanism influencing the learning engagement of special education students [3]. The exploration of self and identity has always been a critical area of research in human studies. Identity recognition is a focus across various disciplines such as philosophy, sociology, communication studies, and psychology. Contemporary university students' identity recognition has been influenced by the evolution of communication methods, showing more diversity and dynamism. Moreover, both domestic and international research on identity recognition is becoming more comprehensive, with scholars delving deeper into areas such as the development of new media, family relationships, interpersonal dynamics, and regional influences. Erik Erikson pointed out that identity recognition refers to an individual's awareness and acceptance of their characteristics and identity, a concept that is both complex and multidimensional. On an individual level, it is a state of self-perception and subjectivity, encompassing a unified sense of self-image, ideas, attitudes, and values. On a societal level, it is a group perception formed through social relationships and interactions. American psychologist Erikson proposed the concept of ego-identity, referring to adolescents' ability to develop self-identity through different roles, which lays the foundation for entering adulthood. In the context of globalization and digitalization, identity recognition has become more complex and dynamic. In-depth research on identity recognition is crucial for advancing both societal and individual development. Scholar Xiao and Yang [4] proposed that social support can be divided into two categories: objective, visible, or actual support, including direct material assistance and the existence and participation in social networks or group relationships; and subjective, perceived, or emotional support, which refers to an individual's feelings of being respected, supported, and understood within society,

closely tied to their subjective experiences. He also pointed out that research on social support should include the consideration of how individuals utilize the support they receive. Differences exist in how individuals use social support—some may have access to support but refuse help. Therefore, the assessment of social support should include the utilization of support as a third dimension [4,5].

In summary, this study will explore the influence of identity recognition and social support on students' competition self-efficacy from the perspective of subject competitions, building on existing research.

## 2. Research Design

### 2.1 Research Questions and Hypotheses

Self-efficacy directly influences the functional role of an individual's motivational psychological process during the execution of an activity. Bandura and colleagues' research indicated that self-efficacy primarily affects behavior choices, motivational effort, cognitive processes, and emotional processes [6]. Social support has a universally beneficial effect on individuals, whether in everyday life or under stressful conditions. Social support enhances an individual's sense of belonging, and bolsters their confidence and ability to cope by providing tangible material assistance or intangible resources such as respect and care. This, in turn, helps individuals overcome difficulties and achieve growth [7]. Previous research has pointed out that strong social support benefits both physical and mental health [8], significantly reducing anxiety and depression [9,10], while also enhancing self-esteem, self-efficacy, and subjective well-being [11,12]. Therefore, the following hypothesis is proposed:

**H1:** Social support has a significant positive impact on private university students' competition self-efficacy.

Identity is the mark or unique quality of an individual or group. Identity recognition includes both the identification of individual traits and attributes as well as the recognition of the relationship between individuals and groups [13,14]. Scholars have proposed that identity recognition is the premise for capacity building and autonomous development. Capacity building facilitates autonomous development and simultaneously deepens

identity recognition. Autonomous development is not only the result of identity recognition and capacity building but also helps elevate both to a higher level [15]. Furthermore, social support, as an important mediating variable, can positively or negatively affect mental health [16]. Thus, the following hypotheses are proposed:

**H2:** From the perspective of subject competitions, identity recognition positively affects private university students' competition self-efficacy.

**H3:** From the perspective of subject competitions, identity recognition positively affects private university students' competition self-efficacy through the mediating role of social support.

## **2.2 Research Methods**

This study primarily employs the literature review method and a questionnaire survey. By reviewing literature related to subject competitions, the variables “competition self-efficacy,” “social support,” and “identity recognition” were clearly defined, and research hypotheses were proposed. Subsequently, a questionnaire was designed based on established scales, targeting private university students. The questionnaire consists of 53 scale items and 8 personal information items. An online self-administered questionnaire survey was conducted, and SPSS software was used for reliability and validity testing, descriptive statistical analysis, linear regression analysis, and mediation effect testing. A total of 438 questionnaires were collected, of which 228 were valid.

## **2.3 Reliability and Validity Testing**

Cronbach's  $\alpha$  reliability coefficient was used to assess the consistency and stability of the questionnaire. The analysis results indicate that the reliability coefficients for competition self-efficacy, social support, and identity recognition all exceeded 0.8, indicating that the questionnaire has a high level of reliability. The structural validity of the questionnaire was assessed to evaluate the effectiveness of the item design. Factor model fitness analysis was conducted, and the results show that the KMO values were all greater than 0.7, with p-values less than 0.001, indicating that the questionnaire meets a certain level of validity. In conclusion, the reliability and validity of the

questionnaire meet the required standards, so no revisions to the questionnaire are necessary, and the formal survey can proceed.

## **2.4 Descriptive Statistical Analysis**

First, the basic information and characteristics of the respondents were statistically analyzed. In this survey, the gender distribution was relatively balanced, with 53.1% female and 46.9% male participants. Regarding grade level, 22.8% were freshmen, 14.9% sophomores, 36.8% juniors, and 25.4% seniors, indicating that the survey covered multiple grade levels, which is conducive to observing and comparing students' characteristics from different academic stages. Additionally, the respondents were from 60 different majors, suggesting that the sample covers a wide range of disciplines, ensuring a degree of generalizability in analyzing the impact of different academic backgrounds on participation in subject competitions. Regarding award experience, 41.2% of students had won awards, while 58.8% had not, allowing for further analysis of whether award experience affects students' self-efficacy. Finally, only 29.2% of students reported obtaining competition information through a single channel, while 70.8% accessed information through multiple channels, with school announcements and social media being the most prominent. This reflects the importance of active promotion by both schools and external sources in encouraging student participation in competitions.

## **2.5 Linear Regression Analysis**

In this study, the dependent variable, competition self-efficacy, is a continuous numerical variable, so linear regression analysis was selected. Identity recognition and social support were used as independent variables, while competition self-efficacy served as the dependent variable in the regression analysis. The results are shown in Table 1.

First, the model demonstrates a good fit, with an adjusted R-squared of 0.729, indicating that the regression model effectively captures the influencing factors of self-efficacy. The linear regression model is significant,  $F = 306.332$ ,  $P < 0.001$ , meaning that at least one of the two independent variables significantly affects the dependent variable, self-efficacy. The P-value

for identity recognition is  $< 0.001$ , with a B value of 0.441, confirming H1, meaning that identity recognition significantly and positively affects competition self-efficacy. The P-value for social support is also  $< 0.001$ , with a B value of 0.431, confirming H2, meaning that social support significantly and positively affects competition self-efficacy. Thus, the linear regression equation is as follows:

Competition Self – Efficacy =  $0.323 + 0.441 * Identity Recognition + 0.431 * Social Support$  (1)  
To further verify the reliability of the regression model, collinearity diagnostics, serial correlation diagnostics, and residual normality diagnostics were conducted. The results show that the VIF values for the two independent variables involved in this study are all less than 5, DW = 1.764, and the residual histogram profile closely matches the normal curve. This suggests that the final conclusions drawn from this regression model are accurate and reliable, genuinely reflecting the causal relationship between the independent and dependent variables.

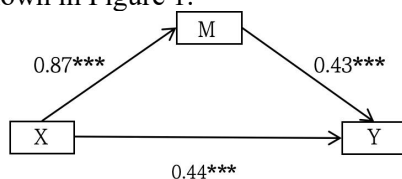
**Table 1. Results of Linear Regression Analysis**

	Unstandardized Coefficients	Standardized Coefficients	T	P	VIF
(Constant)	.323		3.665	<.001	
Identity Recognition	.441	.446	6.467	<.001	3.983
Social Support	.431	.440	6.375	<.001	3.983
	Adjusted R-squared		.729		
	F		306.332		
	P		<.001 <sup>b</sup>		

**\*Dependent Variable: Competition Self-Efficacy**

**2.6 Mediation Effect Test**

With identity recognition as the independent variable (X), social support as the mediating variable (M), and competition self-efficacy as the dependent variable (Y), the mediation effect test was conducted using the PROCESS plugin in SPSS, selecting Model 4. The results are shown in Figure 1.



**Note:** \*\*\*P < 0.001, \*\*P < 0.01, \*P < 0.05

**Figure 1. Path Coefficient Diagram of X, M, and Y**

**Table 2. Breakdown of Total Effect, Direct Effect, and Mediation Effect**

	Effect Value	SE	LLCI	ULCI	Effect Percentage
Total Effect	0.82	0.04	0.74	0.89	
Direct Effect	0.44	0.07	0.30	0.57	53.66%
Mediation Effect	0.38	0.08	0.23	0.54	46.34%

As shown in Table 2, the confidence intervals do not pass through zero, indicating that identity recognition has a direct effect on competition self-efficacy, and it also exerts a mediation effect through social support. Therefore, hypothesis H3 is confirmed. The direct effect (0.44) and mediation effect (0.38) account for 53.66% and 46.34% of the total effect, respectively.

**3. Results**

**3.1 Improve Competition Incentive Mechanisms and Enhance Academic Identity Recognition**

The enhancement of private university students' self-efficacy in subject competitions requires the support of identity recognition, which is a key factor in promoting self-development and self-realization among university students. Students need to establish a clear sense of self-positioning, master relevant academic theories and skills, and enrich their practical experience. Positive self-awareness and recognition of one's academic identity are essential, extending from individual identity recognition to group and social identity. The construction of students' identity recognition also requires support from universities. Schools can improve their student support systems by optimizing psychological counseling, academic guidance, and employment services, increasing their care for students to strengthen students' sense of belonging and identification with the school. Additionally, universities can expand the types and coverage of scholarships and financial aid to ensure students' rights to a normal education and livelihood. Moreover, enhancing faculty development, particularly in private universities, should meet the actual educational needs of society. Further improvements to the integration of coursework

and competitions in private universities should form a school culture with unique values, beliefs, methods, language, environment, and systems, thereby creating a positive learning atmosphere that fosters students' identity recognition through encouragement and support.

### **3.2 Create a Supportive Environment and Stimulate Individual Potential**

The results indicate that in subject competitions, the higher the level of objective support, subjective support, and utilization of support by students, the higher their competition self-efficacy. The degree of material or financial support received, as well as emotional experiences of respect, support, and understanding in social life, affect students' confidence formation, which directly influences their self-efficacy. Social support plays a crucial mediating role between identity recognition and self-efficacy for private university students. This means that effective social support not only helps private university students better accept and understand their identity but also boosts their confidence and sense of competence. Social support is not just an external aid but also a means of stimulating individuals' internal potential. Therefore, it is essential to emphasize the construction and optimization of a social support system specifically for private university students, fostering an inclusive and supportive campus environment. Educators, in addition to providing objective support related to subject competitions, should also guide students to better perceive emotional support from teams, teachers, family, and friends during the competition process. Private university students should recognize that their development is not isolated; they can rely on social support for better growth. When facing difficulties, they should actively seek social support, such as consulting teachers or applying for assistance from the university. These joint efforts will help enhance students' competition self-efficacy, creating a positive feedback loop of growth through social support.

### **4. Conclusion**

This study, focusing on private university students' competition self-efficacy, offers new perspectives for related research and enriches

the body of work on self-efficacy. For private university education and teaching, the results of this empirical study provide strong evidence for promoting teaching reform. By enhancing students' subjective identity recognition and improving objective support systems, universities can better leverage the role of support utilization, fostering a positive learning atmosphere that unlocks private university students' potential in competitions and ultimately boosts their future core competitiveness. However, there are inevitable limitations to this study. For example, the geographical scope of the questionnaire sample is limited, with some remote regions and private universities not covered. To ensure the generalizability and objectivity of the research results, the sample size could be increased in future studies. Furthermore, the current study considered relatively few independent variables during the questionnaire design process, and subsequent research could further explore additional influencing factors.

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