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The Impact of Meaning in Life on Academic Self-Efficacy: The Moderating Role of Psychological Resilience

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Abstract: This study aims to investigate the impact of meaning in life on the academic self-efficacy of university students and the moderating role of resilience in this relationship. A questionnaire survey was conducted among 540 university students using the Meaning in Life Questionnaire, the Academic Self-Efficacy Scale for University Students, and the Resilience Scale. Data were analyzed using SPSS. The results showed that: (1) Meaning in life, resilience, and academic self-efficacy were all significantly positively correlated with each other (ps < 0.001); (2) Meaning in life significantly and positively predicted academic self-efficacy (β = 0.325, t = 8.639, p < 0.001); (3) Resilience played a significant moderating role in the relationship between meaning in life and academic self-efficacy (B = -0.0023, p < 0.05). Specifically, for students with low resilience, the positive impact of meaning in life on academic self-efficacy was more pronounced, whereas this effect was weaker for students with high resilience. The findings suggest that enhancing students' meaning in life is an effective way to boost their academic confidence, and that meaning in life serves as a crucial compensatory protective factor, especially for students with lower levels of resilience.

Keywords: Meaning in Life; Academic Self-Efficacy; Resilience; Moderating Effect; University Students
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1.Introduction

A sense of meaning in life is considered a core human motivation, referring to an individual's perception of the purpose, comprehension, and value of their existence [1-3]. A substantial body of research has confirmed that a strong sense of meaning in life is a vital psychological capital that promotes individual well-being, stimulates positive coping strategies [4], and provides sustained motivation for pursuing personally important goals [5]. For university students, their mental health, adaptability, and academic achievement are integral components of their overall development. Among these, academic self-efficacy—a student's belief in their ability to successfully achieve academic goals—is a key predictor of academic success, persistence, and positive adjustment to university life [6-9]. Therefore, exploring the deep-seated psychological factors that influence academic self-efficacy is of great significance for promoting students' healthy development and fostering a well-rounded personality. Recent research has extended the theory of meaning in life to the educational context, finding that when students derive a sense of meaning from their educational pursuits, their academic self-efficacy is significantly enhanced [6, 10]. This "existential" level of importance appears to be an effective way to inspire students' belief in their capacity to succeed academically.

However, university life is fraught with various pressures and challenges, and not all students can smoothly translate their perception of meaning in their studies into firm self-efficacy beliefs. In this process, resilience may play a crucial role. Resilience is defined as an individual's ability to maintain or quickly recover psychological functioning when faced with adversity or significant stress [11, 12]. It is an important protective factor that can buffer the negative impact of stress on mental health [13]. Research indicates that a sense of meaning in life is itself a significant resource that promotes resilience, with some studies even suggesting an "upward spiral" relationship where they mutually reinforce each other [4]. Concurrently, self-efficacy has been identified as a core characteristic of highly resilient individuals [14, 15]. Those with high resilience possess stronger self-efficacy beliefs and can cope with challenges more effectively [15].

Based on the above theories and empirical evidence, this study posits that the relationship between meaning in life and academic self-efficacy is not uniform across all contexts but may be moderated by an individual's level of resilience. Students with high resilience may be better at utilizing their sense of meaning to fend off academic stress, thereby more effectively consolidating and enhancing their academic self-efficacy. Conversely, for students with weaker resilience, even if they recognize the importance of their studies, their inability to cope effectively with setbacks may prevent the sense of meaning from being successfully converted into stable academic self-efficacy beliefs. Therefore, this study proposes the following hypotheses:

H1: Meaning in life will significantly and positively predict students' academic self-efficacy.

H2: Resilience will moderate the relationship between meaning in life and academic self-efficacy.

2.Methods

2.1 Participants

Using convenience sampling, 540 students from a university were selected as participants. Before the survey, the principles of voluntary participation and anonymity were explained. The questionnaire was distributed and collected uniformly via an online platform. A total of 540 questionnaires were collected, all of which were valid, resulting in a 100% effective response rate. Among the participants, 269 were male (49.8%) and 271 were female (50.2%); 94 were only children (17.4%), and 446 were non-only children (82.6%).

2.2 Research Tools

2.2.1 Meaning in Life Questionnaire

The Meaning in Life Questionnaire (MLQ) developed by Steger et al. (2006) was used [16]. The scale consists of 10 items and includes two dimensions: "Presence of Meaning" and "Search for Meaning." This study focused on the "Presence of Meaning" dimension, which comprises 5 items (e.g., "My life has a clear sense of purpose"). A 7-point Likert scale was used, ranging from 1 (Absolutely Untrue) to 7 (Absolutely True), with higher scores indicating a stronger sense of meaning in life.

2.2.2 Academic Self-Efficacy Scale for University Students

The Academic Self-Efficacy Scale, adapted from Pintrich's scale and revised by Liang Yusong, was used [17]. The scale contains 22 items and includes two dimensions: "Efficacy for Academic Ability" and "Efficacy for Academic Behavior" (e.g., "I am confident I can master the course content"). A 5-point Likert scale was used, from 1 (Completely Disagree) to 5 (Completely Agree), with higher scores indicating greater academic self-efficacy. The Cronbach's alpha for this scale in the current study was 0.917.

2.2.3 Resilience Scale

The Connor-Davidson Resilience Scale (CD-RISC) developed by Connor and Davidson (2003) was used [18]. The scale has 25 items designed to assess an individual's ability to cope with stress or adversity (e.g., "I am able to adapt to change"). It uses a 5-point Likert scale, from 0 (Not true at all) to 4 (True nearly all the time), with higher scores indicating a higher level of resilience. The Cronbach's alpha for this scale in the current study was 0.719.

2.3 Data Analysis

SPSS 26.0 was used for descriptive statistics and correlation analysis. The PROCESS macro (Model 1) was used to test the moderation effect.

3.Results

Statistics of basic demography variables and comparison of differences between main variables (N=540)

		N	Meaning in Life	Academic self-efficacy	Psychological resilience
			M*±*SD	***M*±*SD***	***M*±*SD***
gender	Man	269	47.684±10.288	73.323±15.589	89.022±13.883
	Woman	271	47.447±10.040	72.089±14.519	87.229±14.873
	t		0.272	0.953	1.448
Family formation	Only-child	94	48.309±12.335	75.713±15.904	89.223±15.181
	Non-only child	446	47.408±9.643	72.070±14.817	87.890±14.240
	t		0.666	2.139	0.815

Note: * p < 0.05, ** p < 0.01, *** p < 0.001; “p” is the probability, reflecting the probability of an event.

Table 1 reveals that there were no significant differences (ps > 0.05) in meaning in Life, academic self-efficacy, and psychological resilience based on gender and family formation. However, a significant difference (p < 0.01) was found in meaning in Life based on whether the participants were only children or not. Non-only children scored significantly higher in meaning in Life compared to only children.

3.1 Correlation Analysis of Variables

A Pearson correlation analysis was conducted on meaning in life, academic self-efficacy, and resilience. As shown in Table 2, meaning in life was significantly positively correlated with academic self-efficacy (r = 0.452, p < 0.001) and resilience (r = 0.339, p < 0.001). Academic self-efficacy was also significantly positively correlated with resilience (r = 0.484, p < 0.001). These results indicate a close relationship among the three variables, providing a basis for the subsequent moderation analysis.

Table 2 Correlation analysis of main variables (N=540)

	M*±*SD	1	2	3
1. Meaning in Life	47.565±10.155	1		
2. Academic self-efficacy	72.704±15.060	0.452**	1	
3. Psychological resilience	88.122±14.403	0.339**	0.484**	1

Note: * p < 0.05, ** p < 0.01, *** p < 0.001; “p” is the probability, reflecting the probability of an event.

Table 2 displays the correlation analysis among key variables (N=540). Significant correlations were found between meaning in Life (M = 47.565 ± 10.155), academic self-efficacy (M = 72.704 ± 16.060), and psychological resilience (M = 88.122 ± 14.403). Meaning in Life were significantly positively correlated with psychological resilience (r = 0.339, p < 0.001), The higher the sense of meaning in an individual’s life, the greater their psychological resilience. Academic self-efficacy was significantly positively correlated with psychological resilience (r = 0.484, p < 0.001), suggesting that higher levels of psychological resilience may significantly improve academic self-efficacy. Meaning in Life showed a highly significant positive correlation with academic self-efficacy (r = 0.452, p < 0.001), confirming Hypothesis 1.

3.2 The Moderating Role of Resilience in the Relationship Between Meaning in Life and Academic Self-Efficacy

A moderation analysis was conducted with academic self-efficacy as the dependent variable, meaning in life as the independent variable, and resilience as the moderator, after controlling for gender and only-child status. As shown in Table 3, meaning in life significantly and positively predicted academic self-efficacy (β = 0.331, t = 15.378, p < 0.001), and resilience also significantly and positively predicted academic self-efficacy (β = 0.202, t = 5.334, p < 0.001). Importantly, the interaction term between meaning in life and resilience also significantly predicted academic self-efficacy (B = -0.0023, t = -2.484, p < 0.05), indicating a significant moderation effect of resilience. Both H1 and H2 were supported.

Table 3 The moderating effect of Psychological resilience on meaning in life and academic self-efficacy (N=540)

Models and Variables	Academic self-efficacy					
	Model 1		Model 2		Model 3	
	β	*t*	*β*	*t*	*β*	*t*
1. Meaning in Life	0.452	11.741***	0.325	8.639***	0.836	4.562***
2. Psychological resilience			0.373	9.925***	0.765	5.372***
3. Meaning in Life ×Psychological resilience					-0.748	-2.849**
ΔR^2	0.202		0.325		0.937	
R^2	0.204		0.327		0.937	
F	137.856***		130.678***		2651.197***	

Note: * p < 0.05, ** p < 0.01, *** p < 0.001; "p" is the probability, reflecting the probability of an event.

Table 3 examines the moderating role of psychological resilience in the relationship between meaning in life and academic self-efficacy (N = 540). A hierarchical regression analysis was performed: Model 1 indicated that meaning in life significantly and positively predicted academic self-efficacy (β = 0.452, t = 11.741**). In Model 2, the inclusion of psychological resilience revealed a significant main effect (β = 0.373, t = 9.925**), while the predictive strength of meaning in life remained significant but decreased (β = 0.325, t = 8.639**). Model 3 demonstrated a significant negative moderating effect of the interaction term (meaning in life × psychological resilience) on academic self-efficacy (β = -0.748, t = -2.849**). Specifically, higher psychological resilience attenuated the positive association between meaning in life and academic self-efficacy.

To further clarify the nature of the moderation, a simple slope analysis was performed. At a low level of resilience (M-1SD), meaning in life had a significant predictive effect on academic self-efficacy (simple slope = 0.261, t = 5.784, p < 0.001). At a high level of resilience (M+1SD), the predictive effect of meaning in life on academic self-efficacy remained significant but was weaker (simple slope = 0.142, t = 3.213, p = 0.001). This indicates that the positive impact of meaning in life on academic self-efficacy is more prominent among students with low resilience.

4.Discussion

This study investigated the impact of meaning in life on the academic self-efficacy of university students and examined the moderating role of resilience. The results showed that meaning in life significantly and positively predicted academic self-efficacy, and this relationship was moderated by resilience, which is consistent with the study's hypotheses.

First, the study found that a sense of meaning in life is an important predictor of academic self-efficacy. This result supports previous research suggesting that imbuing academic pursuits with deeper meaning and purpose can effectively enhance students' confidence in their academic abilities [6, 10]. When students view their education as a vital pathway to realizing their life's values and achieving personal goals, they gain powerful intrinsic motivation. This profound understanding of "why I learn" helps students look beyond immediate challenges, see long-term rewards, and thus develop a firm belief that "I can succeed."

The most significant finding of this study is the moderating role of resilience in the relationship between meaning in life and academic self-efficacy. Specifically, the positive effect of meaning in life on academic self-efficacy was more pronounced in students with low levels of resilience. This finding reveals a profound psychological mechanism: a sense of meaning in life may function as a psychological compensatory resource. For students who have lower resilience and are more susceptible to self-doubt and negative emotions when facing setbacks, a clear and firm sense of meaning acts as a "psychological anchor," providing them with additional mental support and motivation to withstand pressure, thereby maintaining and enhancing their academic self-efficacy. In contrast, for students who are already highly resilient, they may already possess strong self-regulatory and emotional recovery skills, enabling them to build and maintain confidence through various channels.

Therefore, while a sense of meaning is still beneficial for them, its "additional" boosting effect is relatively less prominent. This finding is consistent with the protective-compensatory model of resilience, which posits that protective factors become more salient when individuals are in a high-risk state (e.g., low resilience).

5.Conclusion

This study draws the following conclusions: (1) A sense of meaning in life significantly and positively predicts the academic self-efficacy of university students. (2) Resilience plays a significant moderating role in the relationship between meaning in life and academic self-efficacy. The positive impact of meaning in life on academic self-efficacy is more significant among university students with low resilience compared to those with high resilience.

6.Limitations and Future Directions

This study has some limitations. First, its cross-sectional design cannot establish causal relationships or dynamic developmental processes among the variables. Future research could employ longitudinal or experimental designs (e.g., a meaning-in-life intervention) to explore the causal mechanisms more deeply. Second, the sample was drawn from a single institution, which may limit the generalizability of the findings. Future studies could expand the sample to include diverse populations to test the universality of the conclusions. Finally, this study relied solely on self-report questionnaires, which may be subject to biases such as social desirability. Future research could incorporate behavioral experiments or multi-source evaluations to enhance the objectivity and validity of the results.

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Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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