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RESEARCH ARTICLE

Negative Perfectionism and Academic Procrastination: How Self-Efficacy Shapes the Link in Chinese University Students

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ABSTRACT

Academic procrastination is a widespread issue among university students, especially in high-pressure educational contexts like China. Negative perfectionism—marked by excessive self-criticism and fear of failure—is a known psychological factor contributing to procrastination. However, the underlying mechanism remains insufficiently explored. This study investigates whether academic self-efficacy mediates the relationship between negative perfectionism and academic procrastination. A cross-sectional, quantitative study was conducted involving 460 university students from four institutions in Southwest China. Participants completed three validated instruments assessing negative perfectionism, academic self-efficacy, and academic procrastination. The mediation model was tested using PROCESS Macro Model 4 in SPSS with 5,000 bootstrap resamples. Negative perfectionism was found to be positively associated with academic procrastination and negatively associated with academic self-efficacy ($a = -0.242$, $p < .001$). Academic self-efficacy, in turn, negatively predicted procrastination ($b = -0.209$, $p < .001$). The indirect effect of negative perfectionism on procrastination via academic self-efficacy was significant (ab = 0.050, 95% CI [-0.083, -0.027]), indicating a partial mediation. The direct effect became statistically significant after accounting for self-efficacy ($c' = 0.1716$, $p < .001$). The findings highlight academic self-efficacy as a key mediating factor in the perfectionism – procrastination link. Interventions that reduce perfectionistic thinking and enhance students' confidence in academic tasks may help alleviate procrastination, especially in environments driven by external validation and academic pressure.

Contribution/Originality: This study is one of very few to explore how academic self-efficacy mediates the link between negative perfectionism and procrastination in a high-pressure Chinese educational context. It contributes new insights into how internal psychological constructs interact with cultural expectations to shape student behaviour.

1. Introduction

China's education system is predominantly exam-oriented, with academic success measured by standardised test scores. The National College Entrance Examination (Gaokao) is the primary determinant of university admission, shaping students' futures based on a single performance metric (Lee, 2005). This system fosters an environment where external validation overshadows intrinsic motivation, leading to excessive pressure on students to meet unrealistic standards. According to Self-Determination Theory (Deci & Ryan, 2012), autonomy, competence, and relatedness are fundamental psychological needs. When these needs are unmet, particularly in a high-pressure academic culture, students may develop controlled motivation, where learning is driven by external rewards rather than personal interest. This shift undermines long-term engagement and contributes to maladaptive behaviours such as procrastination. Negative perfectionism, characterized by excessive self-criticism, fear of failure, and unattainable standards, is prevalent in such environments. Cognitive Behavioural Theory (CBT) suggests that perfectionistic tendencies erode academic self-efficacy—the belief in one's ability to succeed—leading to avoidance behaviours like procrastination. This study examines these dynamics, emphasising the mediating role of self-efficacy in the perfectionism-procrastination link.

1.1. Research Objectives

The primary objective of this study is to examine the psychological mechanisms underlying academic procrastination among Chinese university students, particularly within the context of a highly competitive and exam-driven educational system. Specifically, this research aims to:

i. Investigate the direct relationship between negative perfectionism and academic procrastination.
ii. Assess the extent to which academic self-efficacy mediates the relationship between negative perfectionism and academic procrastination.
iii. Contribute empirical evidence to the understanding of how perfectionistic beliefs and academic confidence interact to influence maladaptive academic behaviours.
iv. Provide context-specific insights into procrastination within the Chinese cultural and educational environment, where external validation and performance-based self-worth are dominant.

By focusing on these objectives, the study seeks to inform targeted interventions that reduce procrastination through the enhancement of self-efficacy and the modification of perfectionistic thinking patterns.

2. Literature Review

Negative perfectionism often leads to internal conflicts and self-doubt. As described by Frost et al. (1990), perfectionists set excessively high standards and are prone to chronic dissatisfaction with their own performance. When these standards are unmet, students

may feel incompetent and increasingly self-critical (Flett, Hewitt, & Dyck, 1989; Flett et al., 1994). This is exacerbated by fear of failure, a core feature of perfectionism (Hewitt & Flett, 1991), which leads to avoidance behaviours and withdrawal from academic challenges (Sirois & Kitner, 2015). Flett, Nepon, and Hewitt (2012) also argue that negative perfectionism undermines one's sense of competence and reduces confidence in academic ability.

This impaired self-confidence, also known as low academic self-efficacy, is a crucial link in the perfectionism-procrastination pathway. According to Bandura (1997), self-efficacy influences how people feel, think, and act. When students lack confidence in their ability to perform academically, they are more likely to procrastinate (Tuckman, 1991; Steel & Klingsieck, 2016). Deci and Ryan (2012) emphasise that environments which suppress autonomy and relatedness contribute to lower intrinsic motivation and academic disengagement. This internal disengagement often manifests as procrastination—a protective response to anticipated failure and self-judgment (Sirois & Pychyl, 2013; Steel, 2007).

In the Chinese educational context, this dynamic is particularly pronounced. Gao (2021) found that conscientiousness and self-regulation pathways significantly influence procrastination behaviours among Chinese students. Liang (2000) established that academic self-efficacy mediates the effect of personality and motivational traits on academic outcomes. Hayes (2013) and Preacher and Hayes (2004) further provided a robust analytic framework for examining these indirect effects via regression-based mediation models.

The present study draws from these insights to investigate the mediating effect of academic self-efficacy on the relationship between negative perfectionism and academic procrastination.

3. Methodology

3.1. Research Design

This study adopted a quantitative, cross-sectional survey design, which is appropriate for testing mediation models involving psychological constructs using statistical inference and path analysis. The quantitative approach was chosen due to its ability to generate generalizable findings from a large sample and to assess indirect effects through regression-based modelling. A cross-sectional design allowed for the simultaneous collection of data on all variables at a single point in time, making it suitable for examining the hypothesized mediation effects.

3.2 Research Location and Justification

The study was conducted across four comprehensive universities in Southwest China. This region was selected to capture a diverse mix of urban and rural educational environments, reflecting a range of academic pressures and cultural expectations. Southwest China is characterized by a strong emphasis on academic achievement and standardized testing, making it a representative context for investigating perfectionism, self-efficacy, and procrastination among university students.

3.3. Target Population and Sampling

The target population consisted of undergraduate and postgraduate students enrolled in psychology and education-related programs. According to university administrative records, the total accessible population across the selected universities was estimated at approximately 8,000 students.

Participants were recruited using a non-probability convenience sampling method. Recruitment was facilitated through classroom visits and cooperation with university counselors, allowing researchers to access a large and diverse sample within logistical constraints. While convenience sampling may limit generalizability, it is commonly used in psychological research and is appropriate for exploratory mediation analysis involving self-report data.

3.4. Sample Size Determination

A total of 460 valid responses were collected. The sample size was determined using G*Power 3.1 software for linear regression-based mediation analysis, following Cohen's guidelines. Assuming a medium effect size ($f^2 = 0.15$), a statistical power of 0.95, and a significance level of $\alpha = 0.05$, the minimum required sample size was approximately 400 participants. The final sample exceeded this threshold, ensuring sufficient power to detect mediation effects.

3.5. Instruments

Three validated instruments were employed to measure the study variables: Negative Perfectionism was assessed using the Negative Perfectionism Questionnaire (Zi, 2007), which contains 15 items rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). A sample item is "I always feel anxious when I cannot meet my own standards." The Cronbach's alpha in this study was 0.88, indicating high internal consistency.

Academic Self-Efficacy was measured using a 12-item scale adapted from Liang (2000), designed to capture students' confidence in performing academic tasks. A sample item is "I believe I can solve difficult academic problems if I try hard enough." This scale demonstrated excellent reliability ($\alpha = 0.91$) in the current sample.

Academic Procrastination was evaluated using the Aitken (1982) Procrastination Inventory (API), consisting of 16 items reflecting the tendency to delay academic tasks. An example item is "I delay tasks even when I know I should begin them." The Cronbach's alpha was 0.89, reflecting strong internal consistency.

All instruments have been previously validated for use in Chinese student populations and showed good psychometric properties in this study.

3.6. Data Collection Procedure

Data collection took place during scheduled classroom sessions. Prior to participation, all students received an information sheet explaining the study's purpose, their rights as participants, and data confidentiality. Written informed consent was obtained from each participant. Questionnaires were administered in paper format and collected immediately

after completion by trained research assistants. The data collection process was conducted with the support of institutional staff and complied with local guidelines for research with human participants.

3.7. Ethical Considerations

This research received ethical approval from the Research Ethics Committee of Universiti Kebangsaan Malaysia (RECUKM). All procedures followed the institutional and international ethical standards involving human subjects. Participation was voluntary, and anonymity was ensured throughout the study. Participants had the right to withdraw at any time without penalty.

3.8. Data Analysis

All data were analyzed using SPSS Version 25 with Hayes' (2013) PROCESS Macro (Model 4) for testing mediation effects. Descriptive statistics were computed to summarize sample characteristics. Inferential analysis included regression-based mediation analysis, examining both direct and indirect effects. Bootstrapping (5,000 resamples) with bias-corrected 95% confidence intervals was used to assess the significance of indirect effects. Mediation was considered statistically significant if the confidence interval did not include zero.

4. Result

4.1. Participants

This study included 460 students from four representative universities in Southwest China. The data was collected by the college counsellors and the teachers in an arranged class meeting by one of the researchers. The female students in this study were 75.9%, and 24.1% were male. Regarding the distribution of course majors, 84.6% were for liberal arts and 15.4% for Science Accounts. Freshmen accounted for 27.4 % of the total, sophomores accounted for 27.8%, juniors accounted for 21.7%, seniors accounted for 22.1%, and postgraduates accounted for 2%. Most students come from the countryside, with a proportion of 67.4. Cities accounted for 32.6%. The proportion of only children was 27.6%, and the proportion of non-only children was 72.4%. This is in line with China's current national conditions. In China, most rural areas have only one child. A small part of the urban population is the only child. Table 1 shows the background information of the respondents.

Table 1: Demographics Profile of the Respondents (n = 460)

Demographics Variables	Frequency	%
Gender		
Male	111	24.1
Female	349	75.9
Course Major		
Liberal arts class	398	84.6
Science class	71	15.4
Grade		
Freshman	126	27.4

Sophomore	128	27.8
Junior	100	21.7
Senior	97	22.1
Postgraduate	9	2
Hometown		
City	150	32.6
Rural Area	310	67.4
Number of Children		
Single Child	127	27.6
Non-signal Child	333	72.4

The results of the mediation analysis (PROCESS Model 4) revealed that academic self-efficacy significantly mediated the relationship between perfectionism and academic procrastination. Perfectionism had a negative association with academic self-efficacy (*a* = -0.242, *p* < .001), indicating that students with higher perfectionism tended to report lower self-efficacy. In turn, lower self-efficacy was associated with higher academic procrastination (*b* = -0.209, *p* < .001). The indirect effect of perfectionism on procrastination through self-efficacy was significant (ab = 0.050), with a 95% bias-corrected bootstrap confidence interval that did not include zero ([-0.083, -0.027]). This was further supported by the Sobel test (Z = -4.461, *p* < .001), confirming the mediation effect. While perfectionism initially showed a total effect on procrastination (*c* = 0.1719, *p* < .001), the direct effect became non-significant after accounting for self-efficacy (c' = 0.2226, *p* = .119), suggesting that the relationship was fully mediated by academic self-efficacy. The overall model fit was strong for both academic self-efficacy (R^2 = .303) and procrastination (R^2 = .167), with all paths being statistically significant except for the direct effect. These findings indicate that perfectionism contributes to academic procrastination primarily by undermining students' self-efficacy, highlighting the potential value of interventions targeting self-efficacy to mitigate procrastination in perfectionistic students. Figure 1 illustrates the hypothesized mediation model. Table 2 presents the coefficients of the structural paths, including the direct and indirect effects between perfectionism, academic self-efficacy, and academic procrastination. According to Table 2, p<.001, the path coefficient is significant.

Figure 1: A Simple Mediation Model for Perfectionism-Academic Procrastination with Academic Self-Efficacy as Mediator

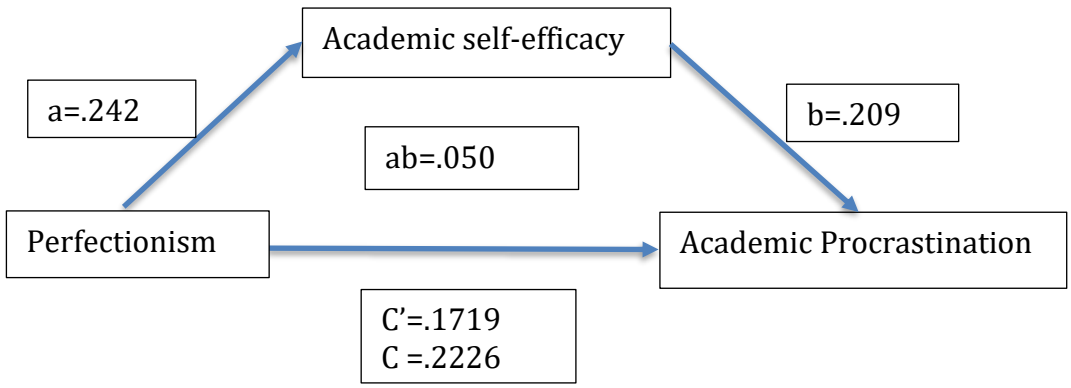

Figure 1 shows that the path coefficient of negative perfectionism and self-efficacy is a=-.242, indicating a negative predictive relationship, indicating that the higher the level of perfectionism, the lower the level of self-efficacy. The coefficient of self-efficacy and

procrastination was b=-.209, which was a negative predictive relationship, indicating that the higher the self-efficacy, the lower the procrastination. Self-efficacy was partially mediated, with a coefficient of ab=.050.

Table 2: Model Coefficients for The Simple Mediation Model

Antecedent		**Academic self-efficacy**				**Academic Procrastination**		
		Coeff.	**SE**	**p**		**Coeff.**	**SE**	**p**
Perfectionism	a	-.242	.035	.000	c	.2226	.032	.119
Academic self-efficacy					b	-.209	.036	.000
Constant		19.418	2.191	.000		36.729	1.806	.000
		R^2= .303				R^2= .167		
		F(1,458) = 199.118, p<.000				F(2,457) = 45.71, p<.000		

Table 3 shows the bias-corrected bootstrap confidence intervals of the indirect effect, indicating significance if zero is not included. According to Table 3 Total Effects and Direct and Indirect Effects, all values do not contain 0 within the 95% confidence interval, indicating that all effects are significant.

Table 3: Indirect Effect of Academic Self-Efficacy on the Perfectionism-Academic Procrastination Relationship

	Effect	**P**	***95% bias-corrected bootstrap CI(Not including 0 is significant)***
Total Effect	0.2226	0.000	0.117 to 0.226
Direct Effect	0.050	0.000	0.167 to 0.277
Indirect (Mediating) Effect	0.1719	0.000	-0.083 to - 0.027

* Bootstrap SE for the indirect effect is 0.222

5. Discussion

This study reveals a significant relationship between negative perfectionism, academic self-efficacy, and procrastination among Chinese college students. Specifically, individuals with perfectionistic tendencies—characterised by excessive self-criticism, fear of failure, and unrealistically high standards—demonstrated lower academic self-efficacy, which predicted higher levels of procrastination. These findings align with prior research (Gao et al., 2021), underscoring how perfectionism erodes students' confidence in their academic abilities, fostering avoidance behaviours. Negative perfectionists' persistent self-doubt and preoccupation with mistakes (Frost et al., 1990) diminish their belief in accomplishing tasks effectively. As observed in this study, such tendencies directly impair self-efficacy, corroborating Steel and Klingsieck's (2016) assertion that perfectionism exacerbates feelings of incompetence. When students perceive themselves as incapable of meeting inflated standards, they disengage from learning altogether, perpetuating a cycle of procrastination and underachievement (Tuckman, 1991).

China's exam-centric education system prioritises external validation over intrinsic growth, reinforcing perfectionistic fears of failure. This environment suppresses

autonomous motivation (Deci & Ryan, 2012), replacing it with avoidance-driven behaviours. Over time, repeated frustration leads to learned helplessness—students resign themselves to failure, believing effort is futile (Seligman, 1975). Our results support this: participants with low self-efficacy frequently abandoned tasks prematurely, viewing them as insurmountable. The emphasis on high-stakes testing and punitive evaluation in Chinese education amplifies perfectionistic traits. By equating self-worth with academic performance, the system entrenches a maladaptive focus on shortcomings (Wang & Gao, 2016). This not only damages self-efficacy but also normalizes procrastination as a coping mechanism for anxiety (Sirois & Pychyl, 2013).

6. Conclusion

This study confirms that negative perfectionism predicts academic procrastination among Chinese college students, with academic self-efficacy as a critical mediating mechanism. These findings align with prior research (Li et al., 2020), demonstrating that perfectionistic tendencies—particularly those marked by excessive self-criticism and fear of failure—undermine students' belief in their academic capabilities. When individuals perceive their performance as inevitably falling short of unattainable standards, they often disengage entirely, substituting effort with avoidance (Steel, 2007). The results further highlight the paradoxical nature of negative perfectionism. While it stems from a desire to excel, it ultimately manifests as procrastination due to the impossibility of achieving perfection (Sirois & Pychyl, 2013). This dynamic is especially pronounced in China's high-pressure educational context, where learning is often framed to avoid punishment rather than pursue mastery. As Bandura (1997) theorised, low self-efficacy perpetuates behaviour. Our Findings corroborate that students who doubt their abilities are likelier to delay or abandon tasks.

While this study clarifies the mediation role of self-efficacy, longitudinal designs could explore causality. Cross-cultural comparisons might also reveal how different educational systems moderate these effects. In conclusion, negative perfectionism, exacerbated by China's high-pressure academic culture, undermines self-efficacy and fuels procrastination. Addressing these issues requires individual-level support and broader pedagogical shifts to promote resilient, motivated learners.

Ethics Approval and Consent to Participate

Ethical approval for this research was granted by the Research Ethics Committee of Universiti Kebangsaan Malaysia (RECUKM). All procedures involving human participants followed institutional and international ethical standards. Written informed consent was obtained from all participants.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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