Uncovering the Latent Dimensions of Academic Procrastination among Teacher Education Students: An Exploratory Factor Analysis

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ABSTRACT

Academic procrastination is a common self-regulation challenge in higher education; however, its core aspects remain underexplored in the Philippine context, particularly among students in teacher education. This study aimed to identify the latent dimensions of academic procrastination, assess its overall level, and explore its relationship with certain demographic variables among pre-service teachers at a Philippine state university. Using a quantitative approach, data were gathered from 485 teacher education students with an adapted academic procrastination questionnaire. Exploratory factor analysis with varimax rotation was performed to reveal the construct's structure. In contrast, descriptive statistics, t-tests, ANOVA, and multiple regression analyses examined the levels, differences, and predictors of procrastination. The results identified a four-factor structure, named Task Avoidance Driven by Low Self-Efficacy and Cognitive Fatigue, Autonomy Resistance and Socially Driven Delay, Maladaptive Perfectionism and Fear of Success, and Fear of Failure and Authority Evaluation, confirming the multidimensional nature of the construct. Overall, students showed an average level of academic procrastination, suggesting that delays are more situational and task-specific rather than chronic. Among the demographic variables studied, sex was the only significant predictor, with male students reporting higher levels of procrastination than female students. No significant differences were observed based on age, year level, academic program, scholarship status, or academic performance. These findings highlight the influence of psychological and motivational factors on structural aspects in the development of academic procrastination among teacher education students. The study offers empirical evidence to guide targeted, gender-sensitive, and dimension-specific interventions to improve self-regulation and professional readiness in teacher education programs.

Keywords: exploratory factor analysis; teacher education students; self-regulation; social cognitive; Philippines

INTRODUCTION

Academic procrastination has emerged as one of the most persistent and pervasive self-regulatory challenges in higher education. Defined as the intentional delay of academic tasks despite recognition of possible negative consequences (Steel, 2007), procrastination has been consistently associated with reduced academic performance, increased psychological distress, and diminished well-being among students (Balkis & Duru, 2016; Svartdal & Nemtcan, 2022). Estimates suggest that 80–95% of college students worldwide engage in academic procrastination, making it a near-universal phenomenon in academic life (American Psychological Association, 2010).

Globally, research has documented academic procrastination throughout multiple cultural and educational contexts, including North America, Europe, and Asia (Moonaghi & Beydokhti, 2017; Van et al., 2019; Yang et al., 2021). In Asian settings, competitive academic environments, strong performance expectations, and heightened academic anxiety have been identified as contextual contributors to procrastinatory behavior (Sakurai & Goh, 2019; Cheng & Wang, 2020). Recent evidence suggests that 60–70% of Asian university students report moderate to high levels of academic procrastination, underscoring its relevance as a regional and global concern (Kumar & Luthra, 2021).

From a theoretical perspective, academic procrastination has been conceptualized as a failure of self-

regulation, closely linked to self-efficacy beliefs (Bandura, 1995), perceived behavioral control (Ajzen, 1991), and emotional regulation processes (Rahimi & Vallerand, 2021). Students who doubt their academic competencies or experience negative task-related emotions such as anxiety and boredom are more likely to delay task initiation and completion. Conversely, high self-efficacy and adaptive emotional regulation have been shown to reduce tendencies toward procrastination (Putwain et al., 2013; Alyami et al., 2017).

Despite extensive international literature, empirical evidence on academic procrastination in the Philippine higher education context remains limited, particularly among students in teacher education programs. Existing Philippine studies have primarily examined the relationship between academic procrastination and academic performance (Asio, 2020; Anuddin, 2021), with mixed or non-significant findings. Other local studies have focused on senior high school populations (Mari, 2017; Garcia, 2022; Adjuran et al., 2024), leaving university-level pre-service teachers underrepresented in the literature.

More critically, most Philippine studies treat academic procrastination as a unidimensional construct, relying on total scale scores without examining its latent structure or underlying dimensions. This indicates a noteworthy gap, as international research demonstrates that academic procrastination is multifaceted, encompassing cognitive, motivational, behavioral, and emotional components (Steel, 2007; Ferrari et al., 2010). Without identifying these latent factors, intervention programs risk being overly general and insufficiently targeted.

In response to the identified gaps in the literature, the present study aimed to examine academic procrastination among teacher education students by uncovering its underlying latent dimensions through exploratory factor analysis, determining the overall level of academic procrastination, and analyzing its associations and differences among selected demographic characteristics. By focusing on pre-service teachers enrolled in a Philippine state university, this study offers context-specific yet internationally relevant empirical evidence that improves current understanding of academic procrastination as a multidimensional construct. Moreover, the findings provide an empirical basis for developing targeted, evidence-informed intervention strategies within teacher education and preparation programs.

Theoretical Framework

This study draws on three complementary theoretical perspectives, Self-Regulation Theory, Social Cognitive Theory, and Control–Value Theory of Achievement Emotions, to frame academic procrastination as a multi-dimensional self-regulatory issue arising from intertwined behavioral, cognitive, and emotional processes that impede students' task engagement.

Self-Regulation Theory (Zimmerman, 2000) views successful learning as reliant on planning, monitoring, and controlling cognitive, motivational, and behavioral processes to attain goals, with procrastination signaling breakdowns in these areas, such as poor goal-setting and time management on demanding tasks (Steel, 2007). In this context, dimensions like laziness and sincerity reflect core regulatory failures in motivation and behavior.

Social Cognitive Theory (Bandura, 1995) highlights self-efficacy, outcome expectations, and perceived control as drivers of behavior; low academic self-efficacy or an external locus of control can promote avoidance and procrastination, whereas strong beliefs promote persistence. Control–Value Theory (Pekrun, 2006) further states that negative emotions, such as anxiety and boredom, stemming from low control and low task value, intensify task avoidance, as reflected in the study's pessimism dimension. Together, these frameworks integrate self-regulatory capacities, cognitive beliefs, and emotional experiences, guiding the exploratory factor analysis and interpretation of procrastination dimensions among teacher education students.

Research on Filipino millennials in organizational settings highlights psychosocial factors influencing self-regulation and engagement. Chua et al (2023) found that socioemotional support, fulfillment, and professional growth opportunities shape work experiences in a Philippine government agency. Although conducted in a workplace setting, these findings underscore the importance of motivational and emotional support systems in sustaining engagement and performance. These factors mirror those in academic procrastination research, in which motivation, emotional well-being, and supportive environments affect task initiation and persistence, suggesting that similar sociocultural dynamics may influence student procrastination in the Philippines.

METHODOLOGY

Research Design

This study used a quantitative research design that integrated exploratory factor analysis (EFA) with a descriptive–correlational approach. Exploratory factor analysis was utilized to identify the latent dimensions underlying academic procrastination, consistent with recommendations for construct exploration in behavioral and educational research (Costello & Osborne, 2005). The descriptive–correlational component was used to determine the level of academic procrastination and to examine its relationships and differences across selected demographic variables. This mixed-analytical approach is appropriate for studies that aim to both validate underlying factor structures and examine group-based and relationship patterns within a single dataset.

Research Sampling

The study was conducted at a state university in the Philippines, focusing on students enrolled in teacher education programs. The target population consisted of 1,266 teacher education students. Using a total population sampling approach, all eligible students were invited to participate; however, due to availability and confidentiality constraints, only 485 students completed the survey and were included in the final analysis. The sample size exceeds the minimum recommended threshold for exploratory factor analysis and other multivariate procedures (Hair et al., 2019). The demographic characteristics of the respondents are presented in Table 1.

Table 1: Demographic Profile of the Respondents (*N = 485)*

	Frequency	**Percentage**
Age		
15-20 years old	304	62.68%
21-25 years old	177	36.49%
26-30 years old	4	0.83%
Sex		
Male	119	24.54%
Female	366	75.46%
Program		
BSED-MATHEMATICS	68	14.02%
BSED-SCIENCE	80	16.49%
BSED-SOCIAL STUDIES	50	10.31%
BSED-ENGLISH	34	7.01%
BPED	76	15.67%
BECED	31	6.39%
BEED	146	30.10%
Year Level		
1st year	166	34.23%
2nd year	156	32.16%
3rd year	144	29.69%
4th year	19	3.92%
Scholarship Status		
Student-Scholar	105	21.65%
Non-Student-Scholar	380	78.35%
Academic Performance		
1.00 -1.75	64	13.20%
1.76-2.00	322	66.39%
2.01-3.00	99	20.41%
Total	485	100.00%

BSED – Bachelor of Secondary Education; BPED – Bachelor of Physical Education; BECED – Bachelor of Early Childhood Education; BEED – Bachelor of Elementary Education

The survey data from 485 students reveals a predominantly young female cohort (75.46% female, 62.68% aged 15-20), skewed toward early-year levels (34.23% 1st year, 32.16% 2nd year) and BEED majors (30.10%). Most are non-scholars (78.35%) with strong academic performance (66.39% in the 1.76-2.00 range, equivalent to high honors). This profile suggests a sample of motivated education majors, with limited representation of older students, males, seniors, and lower performers, potentially biasing analyses such as procrastination studies toward higher-achieving females.

Research Instrument

Data were gathered using a self-administered questionnaire adapted from Abu-Ghazal's Academic Procrastination Questionnaire (APQ) and Solomon and Rothblum's Procrastination Assessment Scale–Students (PASS). The instrument employed a Likert-type response format to assess students' academic procrastination behaviors. Before data collection, the instrument was pilot-tested among college students who were not part of the main sample. The reliability analysis yielded a Cronbach's alpha of 0.91, indicating excellent internal consistency. This level of reliability exceeds the minimum threshold recommended for psychological and educational instruments and is comparable to reliability coefficients reported in recent studies examining academic procrastination among university students (Codina et al., 2024; Pratama et al., 2025).

Data Collection Procedure

Data collection was conducted during the regular academic term. Respondents were informed of the study's purpose and assured of voluntary participation, anonymity, and confidentiality. Informed consent was obtained before administering the questionnaire. Questionnaires were distributed and retrieved using appropriate institutional channels to ensure ethical compliance and data validity.

Data Analysis

Data were analyzed using JAMOVI 2.7.5, a free, open-source statistical software package built on R that offers an easy-to-use interface for data analysis (The Jamovi Project, 2025). Descriptive statistics, including frequency counts, percentages, means, and standard deviations, were used to summarize respondents' demographic characteristics and levels of academic procrastination. To identify the underlying dimensions of academic procrastination, exploratory factor analysis was conducted on a selected set of items from scales. Varimax rotation with maximum likelihood extraction was applied to enhance the interpretability of the factor structure. Items with factor loadings of 0.30 or higher were retained, consistent with established guidelines (Hair et al., 2019). Multiple iterations of factor analysis were performed to improve the solution and remove items with low communalities. Inferential statistical analyses included independent-samples t-tests, one-way analysis of variance (ANOVA), and multiple regression. These tests were used to examine relationships and differences in academic procrastination across demographic variables.

Ethical Considerations

Ethical standards for research involving human participants were strictly observed throughout the study. The research protocol was reviewed and approved by the Samar State University Ethics Review Board (SSU-ERB) before data collection. Participation was entirely voluntary, and respondents were fully informed of the study's purpose, procedures, and their right to withdraw at any stage without penalty. No personally identifiable information was collected, and all responses were made anonymous to ensure confidentiality. Data were securely stored and accessed only by the researchers and were used exclusively for academic and research purposes in accordance with institutional ethical guidelines.

RESULTS AND DISCUSSION

An exploratory factor analysis (EFA) was conducted to examine the latent structure underlying students' self-reported reasons for academic procrastination. The analysis employed maximum likelihood extraction with varimax rotation, as implemented in JAMOVI, consistent with best practices for identifying interpretable and parsimonious factor solutions when theoretical dimensions are expected to be related but conceptually distinct

(Fabrigar et al., 1999; Kline, 2016). The analysis initially included 26 items adapted from the Procrastination Assessment Scale–Students (PASS), developed by Solomon and Rothblum (1984).

Preliminary Analyses and Factorability of the Data

Prior to conducting factor analysis, the suitability of the data for factor extraction was examined. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy for the overall scale was 0.88, which exceeds the recommended threshold of 0.60 and indicates that the correlation matrix was appropriate for factor analysis (Kaiser, 1974). Item-level measures of sampling adequacy ranged from 0.786 to 0.947, suggesting that all items shared sufficient common variance with the other items. These values reflect a meritorious level of sampling adequacy and provide strong empirical support for proceeding with factor analysis.

Factor Extraction and Model Fit

Exploratory factor analysis (EFA) was conducted using maximum likelihood extraction with varimax rotation, consistent with the analytic strategy used in previous validations of the Procrastination Assessment Scale–Students (PASS; Solomon & Rothblum, 1984). The analysis yielded a multidimensional solution that was both statistically and theoretically interpretable. Model fit indices indicated an excellent fit to the data, $\chi^2(95) = 127$, $p = 0.015$. Although the chi-square test was statistically significant, this outcome is common in large samples and is not considered problematic when other fit indices indicate good fit (Kline, 2016).

The root mean square error of approximation (RMSEA) was 0.026, with a 90% confidence interval ranging from 0.012 to 0.038, well below the 0.05 criterion for close fit (Browne & Cudeck, 1993). The Tucker–Lewis Index (TLI) was 0.97, exceeding the conventional cutoff of 0.95 and indicating an excellent comparative fit. The Bayesian Information Criterion (BIC = −460) further supported the parsimony and adequacy of the retained factor structure. Collectively, these indices suggest that the extracted factor solution provides a robust representation of the underlying structure of academic procrastination behaviors and cognitions.

Factor Structure and Interpretation

The rotated solution yielded a four-factor structure with clear, theoretically meaningful item groupings, as shown in Table 2. Each factor demonstrated salient loadings (≥ 0.32), minimal cross-loadings, and conceptual coherence, supporting the multidimensional nature of academic procrastination originally proposed by Solomon and Rothblum (1984). The extracted factors reflect distinct but interrelated cognitive, motivational, and affective mechanisms that contribute to students' procrastination behavior.

The first factor was defined by items reflecting low academic self-confidence, indecisiveness, perceived incompetence, and reduced task-related energy. High loadings were observed for items such as "You didn't trust yourself to do a good job" (0.77), "You didn't have enough energy to begin the task" (0.70), and "You felt it just takes too long to write a term paper" (0.52). Additional items relating to laziness, difficulty choosing topics, and perceived lack of knowledge also loaded on this factor. This factor can be interpreted as ***Task Avoidance Driven by Low Self-Efficacy and Cognitive Fatigue***. Students scoring high on this dimension appear to procrastinate not because of external pressures, but due to internal doubts about their ability to perform adequately and a perceived lack of psychological or physical resources to initiate the task.

This finding is strongly aligned with self-efficacy theory (Bandura, 1997), which posits that individuals who doubt their capabilities are more likely to avoid challenging tasks. Empirical research consistently demonstrates that low academic self-efficacy is a robust predictor of procrastination across educational contexts (Klassen et al., 2008; Wäschle et al., 2014). Moreover, the inclusion of items reflecting low energy and perceived task effort suggests that procrastination may also function as a short-term emotion regulation strategy, allowing students to temporarily escape feelings of exhaustion or cognitive overload (Sirois & Pychyl, 2013). Factor 1 highlights procrastination as an avoidance-based response to self-doubt and anticipated task difficulty, reinforcing the argument that procrastination is not merely behavioral delay, but a psychologically motivated coping mechanism.

The second factor clustered items reflecting resentment toward external demands, peer influence, and social

distractions, including "You resented people setting deadlines for you" (0.65), "Your friends were pressuring you to do other things" (0.55), and "You resented having to do things assigned by others" (0.53). Notably, items related to enjoying last-minute pressure and concern about peer reactions also loaded on this factor. This factor can be conceptualized as ***Autonomy Resistance and Socially Driven Delay***. Students who endorse these items appear to procrastinate in response to perceived external control or as a consequence of competing social demands. From a self-determination theory perspective, such procrastination may reflect psychological reactance, wherein individuals delay tasks to reassert autonomy when they feel controlled or pressured (Deci & Ryan, 2000; Vansteenkiste et al., 2009).

The inclusion of social comparison and peer-related items further suggests that procrastination is embedded within a social context, where norms and peer behaviors can legitimize or reinforce delay. Prior studies indicate that students are more likely to procrastinate when they perceive procrastination as common or socially acceptable among peers (Ferrari et al., 1995; Steel & Klingsieck, 2016). Factor 2 underscores procrastination as a contextually situated behavior, shaped not only by individual traits but also by students' relationships with authority figures and peers.

Table 2. Factors of Academic Procrastination among Education Students

Items	Factor			
	Task Avoidance Driven by Low Self-Efficacy and Cognitive Fatigue	**Autonomy Resistance and Socially Driven Delay**	**Maladaptive Perfectionism and Fear of Success**	**Fear of Failure and Authority Evaluation**
Item 36	0.77			
Item 37	0.70			
Item 38	0.52			
Item 46	0.54			
Item 30	0.50			
Item 34	0.44			
Item 32	0.41			
Item 41		0.65		
Item 47		0.55		
Item 28		0.53		
Item 33		0.52		
Item 39		0.45		
Item 40		0.43		
Item 24		0.40		
Item 43			0.78	
Item 42			0.71	
Item 45			0.54	
Item 44			0.46	
Item 35			0.40	
Item 27				0.74
Item 22				0.53
Item 23				0.52
Item 29				0.40
Item 26				0.36

Note. 'Maximum likelihood' extraction method was used in combination with a 'varimax' rotation

The third factor was defined by items capturing high personal standards, fear of future expectations, and evaluative self-concerns, such as "You were concerned that if you got a good grade, people would have higher expectations of you in the future" (0.72), "You were concerned you wouldn't meet your own expectations"

(0.71), and "You set very high standards for yourself and you worried that you wouldn't be able to meet those standards" (0.54). This factor is best labeled ***Maladaptive Perfectionism and Fear of Success***. Unlike Factor 4, which centers on fear of failure, this dimension reflects anxiety about the consequences of success and self-imposed standards. Students high on this factor may delay tasks to avoid confronting the possibility that their performance—whether good or bad—will redefine expectations from themselves or others.

This interpretation is consistent with prior research linking perfectionistic concerns to chronic procrastination (Flett et al., 2016; Sirois et al., 2017). When students equate performance with self-worth, procrastination becomes a means of preserving identity by postponing evaluative situations. The item's loading, related to waiting for more information from the professor, further suggests uncertainty avoidance and excessive reassurance seeking, both of which are common among perfectionistic procrastinators. Factor 3 highlights procrastination as a self-protective strategy rooted in internalized standards and evaluative anxiety.

The fourth factor consisted of two strongly related items: "You were worried you would get a bad grade" (0.74) and "You were concerned the professor wouldn't like your work" (0.53). Despite the smaller number of items, the factor is theoretically robust and clearly interpretable. This factor represents ***Fear of Failure and Authority Evaluation***, a core dimension of academic procrastination frequently identified in the PASS literature (Solomon & Rothblum, 1984). Students who score high on this factor appear to delay academic tasks due to anxiety about formal evaluation and anticipated negative judgment from instructors.

Extensive empirical evidence supports the link between fear of failure, evaluation anxiety, and procrastination, particularly in high-stakes academic settings (Onwuegbuzie, 2004; Kim & Seo, 2015). Procrastination, in this context, serves as a defensive mechanism: delaying the task allows students to attribute potential failure to lack of time rather than lack of ability (Covington, 2000). Although concise, Factor 4 captures a foundational emotional driver of procrastination, reinforcing the distinction between fear-based and autonomy-based delay processes.

The present findings provide strong empirical support for the multidimensional nature of academic procrastination as originally conceptualized by Solomon and Rothblum (1984). The extracted factor structure underscores that procrastination is not merely a matter of poor time management or laziness but reflects a complex interplay of cognitive, emotional, motivational, and contextual processes.

The four-factor solution provides compelling evidence that academic procrastination is a multidimensional construct encompassing self-efficacy deficits, autonomy resistance, perfectionistic concerns, and fear of evaluation. The findings closely align with the original conceptual framework of Solomon and Rothblum (1984) while also reflecting contemporary theoretical developments emphasizing emotion regulation, self-determination, and self-worth protection.

Importantly, the differentiation among factors suggests that interventions for procrastination must be dealt with on a case-by-case basis. Students who procrastinate due to low self-efficacy may benefit from self-efficacy enhancement and task scaffolding, whereas those driven by autonomy resistance may respond better to autonomy-supportive instructional practices. Likewise, perfectionistic procrastinators require cognitive restructuring of maladaptive standards, while fear-of-failure procrastinators may benefit from anxiety reduction and attributional retraining.

Overall, the excellent model fit and high reliability observed in this study further validate the PASS-based questionnaire's ability to capture the multifaceted nature of academic procrastination. The results extend the original work of Solomon and Rothblum (1984) by demonstrating the continued relevance of these dimensions in contemporary educational contexts. From a practical standpoint, the findings suggest that interventions should be multifaceted, addressing not only time management skills but also students' self-beliefs, emotional regulation strategies, and perceptions of autonomy and support within the learning environment.

Level of Academic Procrastination

As shown in Table 3, teacher education students demonstrated an overall average level of academic procrastination (M = 3.13, SD = 1.07), with the majority of respondents (81.6%) classified within the average category. This finding indicates that procrastination is a typical, but not excessive, academic behavior among students, reflecting occasional task delays rather than chronic avoidance.

Table 3. Item-Level Descriptive Statistics and Overall Level of Academic Procrastination among Education Students (n = 485)

Item	Academic Procrastination Scale Item	Mean	SD	Interpretation
1	*I do my assignments daily and regularly, so I am punctual with my coursework*	3.95	0.87	High
2	*When exam time approaches, I find myself busy with other things*	2.89	1.19	Average
3	*I usually hurry to complete academic missions before the deadline*	3.90	0.90	High
4	*I always say to myself that I will complete my assignments tomorrow*	3.80	1.02	High
5	*I usually start doing study duties immediately after being assigned them*	3.48	0.88	Average
6	*I finish my duties before the deadline*	4.05	0.91	High
7	*I postpone my duties till the last moment*	2.72	1.06	Average
8	*I try to find excuses to justify my delay in doing study assignments*	2.40	1.19	Average
9	*I always waste time*	2.38	1.22	Low
10	*I always finish important assignments and still have extra time*	3.82	0.91	High
11	*I say to myself that I will do my duties then I change my mind*	3.21	1.13	Average
12	*I follow the plan I set for completing my assignments*	3.64	0.95	High
13	*When I have difficult duties, I believe in delaying them*	2.65	1.14	Average
14	*I delay doing duties without justification even if they are important*	2.35	1.11	Low
15	*I delay doing duties regardless of their nature*	2.47	1.09	Average
16	*I feel uncomfortable when thinking about starting my duties*	2.81	1.17	Average
17	*I do not postpone duties I believe are necessary*	3.64	1.02	High
18	*I engage in entertaining activities that reduce study time*	2.46	1.17	Average
19	*I think I have enough time later, so I delay studying*	2.98	1.19	Average
20	*Postponing academic duties is a real problem I experience*	3.60	1.19	High
21	*I stop studying early to do more enjoyable activities*	2.50	1.18	Average
Overall Mean		**3.13**	**1.07**	**Average**
Overall Level Distribution	High (15.5%), Average (81.6%), Low (2.9%)			

2.38 and less – low-level delay; 2.39 to 3.57 – medium delay; and 3.58 and above – high delay (Mahasneh et al., 2016).

Item-level patterns further suggest a coexistence of adaptive and maladaptive academic behaviors. While students reported high agreement with items reflecting timely task completion and adherence to study plans, moderate agreement was also observed for items related to delaying complex or less engaging tasks. This pattern implies that procrastination among teacher education students is situational and task-dependent, consistent with evidence that students may selectively delay tasks perceived as demanding or emotionally aversive (Steel, 2007; Sirois & Pychyl, 2013; Codina et al., 2024). Overall, the predominance of average procrastination suggests that, although not immediately debilitating, persistent delays may still undermine academic efficiency and professional preparation if left unaddressed. This finding underscores the critical role of early, preventive interventions in teacher education programs to strengthen self-regulation and task-management skills before maladaptive procrastination patterns become entrenched.

Relationship Between Academic Procrastination and Demographic Variables

Multiple regression analysis (Table 4) revealed that sex emerged as the only significant predictor of academic procrastination among the selected demographic variables, with male students reporting higher levels of procrastination. Other variables, including age, year level, academic program, scholarship status, and academic performance, did not significantly predict procrastination levels.

Table 4. Relationship Between Academic Procrastination and Demographic Profiles

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.494	0.090		38.910	0.000
Sex	-0.208	0.050	-0.187	-4.190	0.000

a. Dependent Variable: Academic Procrastination

Recent empirical evidence consistently indicates that male students often demonstrate lower self-regulatory capacity and weaker academic persistence compared to female students (Muti'ah et al., 2024; Gürcan Şeker, 2025). These gender differences are thought to stem from variations in motivation, goal-setting, and emotion regulation, with males typically exhibiting higher impulsivity and a greater tendency to avoid tasks perceived as difficult or emotionally aversive. From a theoretical perspective, this aligns with self-regulation theory and research on gendered socialization, which proposes that females are generally more likely to internalize responsibility for task completion and employ proactive strategies to manage deadlines. In the context of teacher education, these findings have practical significance: persistent procrastination among male pre-service teachers may hinder their development of effective time management, professional responsibility, and classroom preparedness.

Differences in Academic Procrastination Across Groups

Independent samples t-test results presented in Table 5 showed a statistically significant difference in academic procrastination between male and female students, with male students exhibiting higher mean procrastination scores. This finding corroborates earlier and recent empirical evidence suggesting that gender differences in academic procrastination are closely linked to variations in self-regulatory capacity, motivational orientation, and emotion-regulation strategies (Pratama et al., 2025; Balkis & Duru, 2016). Studies have consistently shown that female students tend to demonstrate stronger academic self-discipline, greater task persistence, and more effective time management, which may reduce their susceptibility to procrastination.

Table 5. Differences in Respondents' Academic Procrastination When Grouped According to Sex and Scholarship Status

Demographic Profiles	Academic Procrastination			
	M	***SD***	***t-value***	***p-value***
Male (n=119)	3.286	0.503	4.190	0.000*
Female (n=366)	3.077	0.460		
Student-Scholar (n=105)	3.18	0.50	1.23	0.22
Non-Student-Scholar (n=380)	3.11	0.47		

*df = 483; *p < 0.05*

From a theoretical perspective, this gender difference can be interpreted through frameworks of self-regulation and socialization. Female students are often socialized to take on greater academic responsibility and to comply with systematic tasks. In contrast, male students may exhibit greater impulsivity and a preference for immediate rewards, thereby increasing their likelihood of delaying academic obligations. Recent research, including a 2025 study by Rad et al., shows that male students show greater levels of academic procrastination and difficulties with emotional regulation, leading to greater task avoidance on demanding or emotionally aversive tasks due to poor emotion management. Abdi Zarrin et al. (2020) further reported that male students show greater levels of academic procrastination than females, mainly attributable to deficits in self-regulatory

control and greater avoidance of academically demanding or emotionally aversive tasks, particularly when fear of failure is salient. Within teacher education programs, these differences are especially significant, as effective self-management and professional responsibility are critical competencies for future educators.

Table 6. Differences in Respondents' Academic Procrastination When Grouped According to Demographic Profile

		SS	***df***	***MS***	***F value***	***P-value***
Age	Between Groups	0.307	3	0.102	0.444	0.721
	Within Groups	110.829	481	0.23		
	Total	111.137	484			
Program	Between Groups	1.527	6	0.255	1.111	0.355
	Within Groups	109.552	478	0.229		
	Total	111.079	484			
Year level	Between Groups	0.311	3	0.104	0.450	0.717
	Within Groups	110.768	481	0.230		
	Total	111.079	484			
Academic Performance	Between Groups	0.071	2	0.035	0.154	0.857
	Within Groups	111.008	482	0.230		
	Total	111.079	482			

In contrast, the one-way ANOVA results presented in Table 6 indicated no statistically significant differences in academic procrastination across age, year level, academic program, scholarship status, or academic performance. This finding suggests that procrastination behaviors are relatively stable across academic and institutional categories, strengthening the concept that structural or performance-based factors do not primarily shape procrastination. Similar conclusions have been reported in recent studies, indicating that students across a range of academic stages and achievement levels experience comparable tendencies to delay academic tasks (Chen & Lopez, 2024).

Collectively, these results underscore that individual psychological and motivational processes more strongly influence academic procrastination among students in teacher education than demographic or institutional characteristics. The presence of a significant gender difference, alongside largely non-significant demographic effects, highlights the importance of targeted, gender-sensitive intervention approaches that strengthen self-regulation, motivation, and emotion management skills, particularly among male pre-service teachers. Such interventions may play a critical role in fostering academic responsibility and professional readiness within teacher education programs.

CONCLUSIONS

This study examined academic procrastination among teacher education students by identifying its underlying dimensions, determining its overall level, and analyzing its relationship with selected demographic variables. The findings confirmed that academic procrastination is a multidimensional construct composed of Task Avoidance Driven by Low Self-Efficacy and Cognitive Fatigue, Autonomy Resistance and Socially Driven Delay, Maladaptive Perfectionism and Fear of Success, and Fear of Failure and Authority Evaluation, reflecting the complex interaction of behavioral, cognitive, and emotional processes involved in self-regulation. The overall average level of procrastination suggests that delays in academic tasks are generally situational rather than chronic, highlighting the dynamic nature of procrastination in higher education. The significant difference observed across sex further underscores the influence of individual psychological factors over structural or academic characteristics in shaping procrastination behaviors.

To enhance the robustness and practical relevance of future research, mixed-methods or longitudinal designs are recommended to capture variations in procrastination behavior over time and to mitigate the limitations of self-report data. Broadening the sample to include students from multiple institutions and diverse academic contexts would improve the generalizability of findings. Moreover, translating the identified dimensions into concrete intervention models or pilot programs, such as self-regulation training, motivation enhancement initiatives, or emotion regulation interventions, may strengthen the study's practical significance and policy

relevance. Such applications are particularly valuable for teacher education programs, as they may contribute to the development of more self-regulated, motivated, and academically resilient future educators.

Declaration of AI use

The authors declare that ChatGPT 5.0 was used solely to assist with language editing, grammar refinement, and improvement of academic clarity during the preparation of this manuscript. ChatGPT 5.0 was not used to generate research data, conduct statistical analyses, interpret results, or make methodological or analytical decisions. All scientific content, data interpretation, and conclusions are the full responsibility of the authors, who have reviewed and verified the manuscript to ensure accuracy, originality, and compliance with ethical and scholarly standards.

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