

Academic Procrastination and its Measurement: Confirmatory Factor Analysis of the Academic Procrastination Scale in Pakistani Universities

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Abstract

This research examines Academic Procrastination among Pakistani university students using the validation of the Academic Procrastination Scale (APS) created by McCloskey (2011). Academic procrastination as the voluntary postponing of academic tasks despite expecting adverse consequences, is a ubiquitous problem negatively impacting students' learning performance and psychological health. The study seeks to measure the construct validity and reliability of the APS via Confirmatory Factor Analysis (CFA) and Cronbach's alpha. A sample consisting of 100 Government College University Faisalabad students was obtained using convenience sampling. The APS, a 25-item one-factor scale was applied with slight modifications to make it culturally relevant. Confirmatory Factor Analysis was performed using LISREL 8.80 to test the factor structure of the APS. Those items with factor loadings less than 0.40 (items 1, 8, 12, 13, 14, 16, 17, and 25) were deleted to enhance model fit and quality of measurement thereby yielding a final 17-item scale. The

new scale demonstrated good factor loadings between 0.46 and 0.81. Reliability analysis showed a very high internal consistency for the final APS of 0.89 for Cronbach's alpha indicating that the scale is measuring the construct of academic procrastination among Pakistani university students reliably. The results show the strong psychometric properties of the scale and ascertain its use in this population. This research adds to the body of literature on academic procrastination by testing an already existing scale in a Pakistani context, highlighting the psychological and environmental intricacies of procrastination, including stress, fear of failure, perfectionism, and distractions. It provides a valid measure for researchers and educators to use in understanding and addressing procrastination behaviors. Implications interventions that support effective time management, stress, and self-regulation skills to the adverse effects of procrastination on students' academic achievements and well-being.

Keywords: Academic Procrastination Scale (APS), University students, Confirmatory Factor Analysis (CFA), Cronbach's alpha, Psychometric validation, Higher education, Reliability

1. Introduction

Deliberately keeping things on hold or putting off schoolwork, like reading or completing assignments, even though one knows that doing so may have negative consequences, is referred to as academic procrastination. Academic procrastination is "the tendency to postpone academic tasks to the point of experiencing subjective discomfort, such as anxiety or guilt, as a result of the delay" (Steel, 2007).

College students are often plagued by academic procrastination, which has been attributed to a variety of problems including perfectionistic tendencies, lack of self-efficacy, and fear of failure. Research finds that children who report high levels of socially prescribed perfectionism are more likely to procrastinate because they are fearful of not meeting standards or expectations.

Students often procrastinate Tuckman defines procrastination as the process of doing nothing, putting things off, and not so much at the higher education level, students have been known to find their studies to be strenuous and challenging (Saqib & Rehman, 2018). University students often suffer from academic stress, and it really compromises their involvement and performance in class. Research has linked academic stress to low motivation, poor academic performance, and even increased dropout rate. Studies show that a large percentage of students in colleges are affected by stress-related mental health problems, such as substance abuse disorders, anxiety, and depression, and these begin

while they are studying (Chen, C., Bian, F., & Zhu, 2023).

All students of every age group display academic procrastination, a phenomenon rampant in nearly all schools across the globe. Intentionally putting off coursework-related assignments, like finishing quizzes at the last moment or handing in assignments overdue (Steel & Klingsieck, 2016).

Procrastination is usually brought about by psychological factors such as fear of failure, low self-esteem, perfectionism, and anxiety. Students tend to procrastinate in order to avoid feeling inadequate or stressed. Additionally, procrastination behavior can be exacerbated by external factors such as noisy environments, a difficult task, a scarcity of resources, and ambiguous instructions. Various studies have highlighted the multi-dimensional nature of academic procrastination, with a focus on the interplay of time-management, social, psychological, and environmental factors in determining this behavior.

Ferrari, Johnson, and McCown (1995) established that academic procrastination is a prevalent issue among students that has a detrimental impact on their learning outcomes as well as mental health. All factors considered, academic procrastination is a complex and pervasive issue that threatens students' learning and personal development.

1.1 Research Objectives

1. To evaluate the APS's construct validity by verifying its factor structure among Pakistani university students through Confirmatory Factor Analysis (CFA), making sure the scale appropriately captures academic procrastination.
2. To evaluate the internal consistency of the one-factor scale using Cronbach's alpha among Pakistani university students in order to gauge the APS's reliability.

2. Literature Review

Ferrari, Johnson, and McCown (1995) concluded that procrastination in academics is a prevalent issue among students that indirectly impacts both their learning performance and mental health. Overall, procrastination in academics is a very intricate and pervasive issue that threatens academic and personal growth among students.

Procrastinating students have generally poor time management and self-control skills, which raises their levels of anxiety and reduces their performance (Tice & Baumeister, 1997)

According to Steel (2007), procrastination is "the deliberate postponement of a planned course of action despite anticipating negative consequences as a result of the delay."

Ferrari, Johnson, and McCown (1995) state that academic procrastination is a prevalent student disorder that negatively impacts both learning outcomes and psychological well-being.

As per Dwyer and Cummings (2001), stress is the key factor influencing the academic performance of learners. Stress has consequences beyond mere feeling overwhelmed; it negatively impacts mental and physical well-being. In this context, students are important that they discover how to reduce this burden and prioritize their health at the highest level while balancing their academics.

Challenging circumstances, which may affect their performance. It's as if carrying a heavy burden. Individual challenges can significantly affect their performance; it's not merely the academic part of things. Dusselier, Dunn, Wang, Shelley, and Whalen (2005) hold that there is a clear relationship between such stressful circumstances and a decline in students' performance. They also discovered a strong link between this stress and students' overall health and wellbeing. So, finding a balance and getting the help needed for overall well-being are more crucial than just studying. It is hard to imagine being such a student and trying to fit lectures, homework, and exams into the day. Each day feels like walking around with the biggest rucksack.

Procrastination is usually brought about by psychological problems such as fear of failure, perfectionism, low self-esteem, and anxiety. The students avoid undertaking tasks to feel less stressed or inadequate. Additionally, procrastination habits can be exacerbated by external factors such as distracting environments, poor instructions, a difficult task, and unavailability of resources. Various studies have highlighted the complexity of academic procrastination, underscoring the interaction between time-management, social, psychological, and environmental factors in determining the behavior.

Procrastination is an maladaptive coping mechanism that is caused by heightened academic stress but also causes more stress as deadlines approach (Ferrari, 2010).

Big projects can be divided into smaller, bite-sized tasks that have individual deadlines in order to make individuals feel less stressed and promote a process-oriented approach, which has been shown to reduce stress and procrastination (Sirois & Pychyl, 2013).

Actually, long-term research indicates that procrastination often comes after academic stress, meaning that students under very high levels of stress tend to employ procrastination as an inappropriate coping device to temporarily avoid the demands of their studies (Fincham&May, 2021). (Fincham and May's) longitudinal studies, for instance, showed that stress in the middle semester was a more powerful predictor of later-semester procrastination, but procrastination was not a notable predictor of later stress. Yet through enhancing time stress and guilt, procrastination can exacerbate stress levels and perpetuate a vicious cycle that damages psychological well-being as well as academic performance (Sirois, 2014).

Self-regulated students are able to evaluate their study methods, limitations, and accomplishments in the academic setting and employ a variety of learning strategies according on the demands of the scenario (Martins & Santos, 2019).

According to Sampaio, Polydoro, and Rosário (2012), procrastination is a failure in the self-regulation process that suggests a misalignment between purpose and action, or a deficiency in the execution of the subject's intentions and desires. Procrastinating in the classroom raises the likelihood of unpleasant emotional states like stress, fatigue, anxiety when faced with evaluation tasks, and decreased interest in activities, among other aversive feelings (Lonka et al., 2014; Rabin, Fogel, & Nutter-Upham, 2011).

Procrastination in academics can lead individuals to miss their deadlines, which can exacerbate their psychological suffering person may not be able to control their environment well, and it also results in bad behavioral outcomes.

Stricter standards or ideals for doing a piece of work that is critically evaluated by the person is referred to as perfectionism. The theory of perfectionism has been explained for the first time by Adler. He argued that because of human nature, it's a natural ability to strive for perfection and is even considered normal. But he distinguishes between maladaptive perfectionism, which causes compulsive order and a fear of criticism, and healthy perfectionism, which means goals that are attainable (Ashraf, M. A., Sahar, N. E., Kamran, M., & Alam, J. (2023).

3 Methodology

3.1 Sample

100 students from Government College University Faisalabad were included in the sample. Convenience sampling was used in this study, in which subjects are chosen according to their accessibility and availability to the researcher.

3.2 Instrument

The researcher selected the Academic Procrastination Scale (APS), developed by (McCloskey, 2011) for this research. The APS is a psychometrically validated instrument composed of 25 items, designed to clearly assess academic procrastination behaviors. It is a one-dimensional scale, meaning it measures a single underlying factor of academic procrastination. The selection of this scale was due to its robust evidence of validity, reliability, and prevalence in academic settings. Minor adjustments were made to maintain the original framework and theoretical underpinnings while ensuring it is relevant to the study population. The standardized questionnaire is made up of 5-point Likert-type items, where each item is rated from 1 to 5. Scoring on the Likert scale is as listed

Table 1*Representation of Likert type Scale:*

<i>Range of Score</i>	<i>Description</i>	
1.	1	strongly
	Disagree	
2.	2	Disagree
3.	3	Neutral
4.	4	Agree
5.	5	strongly
	Agree	

Table 2*Description of Subscales, Their scope, Number of Items, Example Items*

Subscale	Scope	No of items	Example Item
Academic Procrastination	Academic procrastination is the act of delaying homework exam preparation or essays completion until the last minute	25	I put off projects until the last minute.

3.3 Data Collection

Students were given surveys to complete in order to gather data. To guarantee truthful reporting, participants gave anonymous answers. Informed consent was one of the ethical principles that were followed.

3.4 Psychometric Validation of the APS

The academic procrastination scale (APS), created by McCloskey (2011), was validated in order to determine its validity and reliability. The conceptual relevance of the scale was ensured by its content, which was based on a recognized theoretical framework of academic procrastination. Confirmatory Factor Analysis (CFA), conducted using LISREL version 8.80, was used to evaluate construct validity and confirm that the one factor structure Cronbach's alpha for full scale internal consistency measurements were used to verify reliability. The APS is supported as a strong instrument for research and

real-world implementation in Pakistani higher education by these thorough validation procedures.

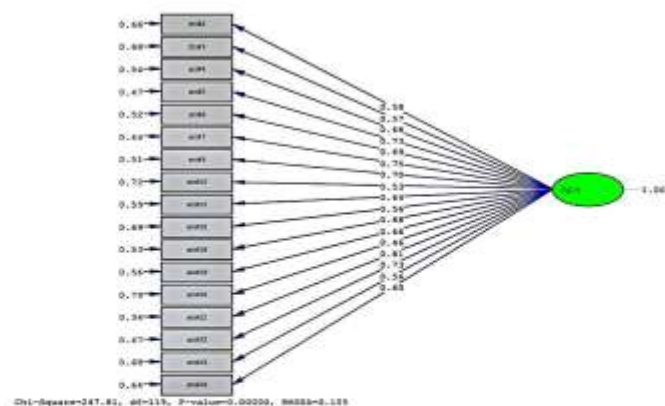


Figure 1: Confirmatory Factor analysis of Academic Procrastination Scale APS

The values of items 1, 8, 12, 13, 14, 16, 17, and 25 are below the generally recognized cutoff threshold of 0.40 for factor loadings. This indicates that these items do not significantly add to the validity of the construct since they have little relationship to the underlying factor it is intended to measure. In order to enhance the overall model fit and measurement quality, these items are eliminated from the scale.

Table 3

Factor Loading of Finalized Academic Procrastination Scale

Sr.no	Statements No	APS
1	St#1	0.58
2	St#2	0.57
3	St#3	0.68
4	St#4	0.73

5	St#5	0.69
6	St#6	0.75
7	St#7	0.70
8	St#8	0.53
9	St#9	0.64
10	St #0	0.56
11	St#11	0.68
12	St#12	0.66
13	St#13	0.46
14	St#14	0.81
15	St#15	0.73
16	St#16	0.56
17	St#17	0.60

Table 3 presents the statements and corresponding factor loading of the Academic Procrastination scale. All of the items load on the intended factor enough and make a significant contribution to the construct being measured, as seen by their acceptable CFA values over the usual cutoff of 0.40.

Table 4

Reliability of Academic Procrastination (APS)

Factor	Items in Final Scale	Reliability Value
Academic Procrastination (APS)	17	0.89

The Cronbach's alpha score for the Academic Procrastination scale is 0.89, indicating high reliability among university students in Pakistan.

3.5 Conclusion

The current study confirmed that there is just one factor (APS), as suggested by McCloskey (2011), and validated the Academic Procrastination Scale (APS) among university students in Pakistan. The APS's overall Cronbach's alpha value of 0.89 indicated that it had excellent internal consistency. Additionally, good model fit was validated by confirmatory factor analysis, indicating that the APS is a reliable psychometric tool for use in the contemporary cultural setting.

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Annexure

Academic Procrastination Scale (APS)

Using the following scale, carefully read each statement and select the one that best captures your experience with academic procrastination.

Frequency scale

1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

	Statement	1	2	3	4	5
1	I put off projects until the last minute					
2	I have found myself waiting until the day before to start a big project					
3	I Know I should work on university work, but I just don't do it					
4	When working on university work, I usually get distracted by other Things					
5	I waste a lot of time on unimportant things					
6	I get distracted by other, more fun, things when I am supposed to work on university work					
7	I can't focus on university work or projects for more than an hour until I get distracted					
8	My attention span for university work is very short					
9	Tests are meant to be studied for just the night before					
10	I only study the night before exams					
11	Friends usually distract me from university work					
12	I find myself talking to friends or family instead of working on university work					
13	On the weekends, I make plans to do homework and projects, but I get distracted and hang out with friends					
14	I tend to put off things for the next day					
15	I don't spend much time studying university material until the end of the Semester					
16	I frequently find myself putting important deadlines off					
17	If I don't understand something, I'll usually wait until the night before a test to figure it out					