International Journal of Evaluation and Research in Education (IJERE)
Vol. 15, No. 6, December 2026, pp. 5234~5241
ISSN: 2252-8822, DOI: 10.11591/ijere.v15i6.39016

Gender differences in academic procrastination: an exploratory study among Moroccan high school students

Khadija Saidi[1], Mohamed Garmah[2], Abderrahim Ait Abdeslam[3]
[1]Department of English, Faculty of Letters and Humanities, University Sultan Moulay Slimane, Beni Mellal, Morocco
[2]Department of English, National School of Business and Management, Sultan Moulay Slimane University, Beni Mellal, Morocco
[3]Department of English, Faculty of Economics, University Sultan Moulay Slimane, Beni Mellal, Morocco

Article Info

Article history:

Received Feb 7, 2026
Revised Aug 18, 2026
Accepted Oct 6, 2026

Keywords:

Academic procrastination
Gender difference
High school student
Morocco
Prevalence

ABSTRACT

Research on academic procrastination lacks consensus regarding its prevalence and gender differences, especially among high school students. To address this research gap, our study examined the prevalence of academic procrastination and its potential gender differences among a sample of Morocco public high school students. The sample consisted of 67 participants (67.2% females, 32.8% males, with a mean age of 17.68 years) who completed the Procrastination Assessment-Scale for Students (PASS). An independent t-test was conducted to explore whether male and female students exhibited a statistically significant difference from each other in terms of their academic procrastination scores. The findings revealed that the prevalence rate of academic procrastination among the study participants was 14.9%. However, no statistically significant gender difference was observed. Although a notable proportion of students reported severe academic procrastination tendencies, the relatively small sample size of 67 participants limited the generalizability of the findings to the target high school population. These findings suggest that future research using larger and randomly selected participants should focus on risk factors associated with academic procrastination and formulate proper preventive measures.

This is an open access article under the CC BY-SA license.

Corresponding Author:

Khadija Saidi
Department of English, Faculty of Letters and Humanities, University Sultan Moulay Slimane
Beni Mellal, Morocco
Email: Khdejasaidi@gmail.com

1. INTRODUCTION

In educational psychology, the tendency to postpone tasks that require completion is called procrastination. It is often characterized by a failure in self-regulation and accompanied by an irrational delay of task completion despite being aware of the potential negative consequences of the delay [1], [2]. In the academic arena, research has documented that procrastination is prevalent among students [3], [4], and rigorous scientific research has demonstrated that its damage is quite significant [5]. An examination of the literature shows that the vast majority of procrastination research has focused on university students, whereas research among high school students is still scarce. Hence, this study is one of the very early studies (to our knowledge) to investigate academic procrastination among Moroccan high school students, a population that remains largely underrepresented in the literature. In addition to providing insights about an underrepresented population, the study also examines academic procrastination among high school students as opposed to university students to help identify the prevalence rates of academic procrastination at an early developmental stage during which interventions are more likely to yield positive behavioral changes before the problem becomes habitual and harder to alleviate.

Prior research has documented that procrastination is extremely prevalent among individuals and frequently accompanied by serious implications [6]. For example, existing findings indicate that chronic procrastination is affecting up to 60% of the population [7], the literature also shows that procrastination is correlated with some mental health conditions, including chronic health problems [8], low self-esteem [9], attention deficit hyperactivity disorder [10], low self-esteem [11], obsessive-compulsive disorder [12], suicide proneness [13], external locus of control [14], low self-regulation [15], mobile phone addiction [16], depression [17], as well as physical health disorders such as treatment delay, hypertension, cardiovascular diseases [18], and prospective memory failures [19]. Further studies also show that procrastination is related to poor planning, impulsive spending, low financial self-efficacy [20], chronic sleep deprivation [21], laziness, lack of interest [22], and low academic life satisfaction [23]. Other studies also report that poor time management [24], as well as job overwhelm and burnout strongly correlate with high procrastination tendencies [25]. As for the treatment, existing research proposes that cognitive behavior therapy, which consists of behavioral experiments, exposure therapy, and successive approximation, is found to be effective in alleviating procrastination habits among those who show chronic procrastination inclinations [26].

Given the high reported prevalence rates of academic procrastination in the literature as well as its well-documented significant effects and the lack of research regarding its prevalence rates in the Moroccan academic context, this study aims to contribute to this limited body of literature by first exploring the prevalence of academic procrastination among Moroccan high school students. The study also seeks, as a second research objective, to investigate the possible gender differences in academic procrastination among the target population. More specifically, the study seeks to answer the following research questions:

- What is the prevalence of academic procrastination among Moroccan public high school students?
- Is there a statistically significant difference in academic procrastination scores between male and female Moroccan public high school students?

2. METHOD

2.1. Participants and procedures

A convenience sampling technique was employed in this study to select participants from a readily accessible population. The target population consisted of 12th-grade students who were enrolled in a public high school within the study area. Prior to being recruited for the study, all participants had to meet certain inclusion criteria. First, the participants had to be actively enrolled as 12th-grade students during the academic year during which the data was collected. Second, all participants had to be enrolled in experimental or mathematical science majors. By ensuring that all participants were roughly coming from similar educational majors, we guaranteed that all the participants had roughly the same study load. This technique of participant selection reduced the confounding influence of curricular differences and enhanced the internal validity of the study. Third, all participants had to be registered to sit for the final national examination that was going to take place at the end of the academic year. Ultimately, 67 high school students volunteered to participate in the study. This sample size was determined by several practical and methodological constraints, namely the exclusion of illegible questionnaires, the very limited number of teachers who agreed to volunteer their class time for data collection, classroom scheduling restricted, and the one-month time frame that was allocated for the fieldwork.

Permission to conduct the research was obtained from the administrators of Ben Sina High school, Beni Mellal, Morocco. Following approval, the researchers coordinated with the public high school teachers to collect data from students during their official class time. Afterwards, a first pilot study was run on a small group of participants consisting of 40 12th grade students to determine whether the questionnaire items were clear and easy for participants to understand. Based on the feedback from this pilot study, several items were revised to enhance the intelligibility of the questionnaire, including rewording of unclear items and the restructuring of certain questions. After that, a second pilot study was run on 10 12th-grade students to confirm that the revised version of the questionnaire was clear and intelligible to all participants. Once the questionnaire's intelligibility was guaranteed, the administration of the questionnaire began. During the distribution phase, one of the researchers was present to provide a brief verbal explanation regarding four main aspects, namely the rationale behind the study, the participants' anonymity, the confidentiality of the collected data and results, and the voluntary nature of participation. The researcher also assured participants that there were no right or wrong answers and their data would be used for academic purposes only. Those who agreed to volunteer were administered paper-based questionnaires, which they had to complete individually. The researcher remained present in the classroom throughout the completion phase to provide answers for any procedural questions. By the end, any questionnaire returned with at least one missing data point (e.g., unanswered items or missing demographic information) was excluded from further analysis. Upon completion, the data had to be cleaned prior to being coded and prepared for statistical analysis.

2.2. Data collection instrument

The study employed the Arabic adapted version of the Procrastination Assessment-Scale for Students (PASS). This version of the questionnaire was made up of 20 items pertaining to academic procrastination, each item was measured on a 5 Likert scale ranging from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me). In practical terms, a total score of less than 20 indicated mild procrastination, between 20 and 50 indicated average procrastination, between 50 and 80 indicated well-adjusted procrastination, and a score higher than 80 indicated severe procrastination. The statistical test ran on the questionnaire to reassess its internal consistency (reliability) using the Cronbach's Alpha coefficient indicated an acceptable level of reliability (α=.79). Besides the self-reported scale of measuring various aspects of academic procrastination, the questionnaire also included items for collecting demographic data such as age, gender, grade retention, and school dropouts.

2.3. Data cleaning techniques

In this study, all questionnaire items were framed positively; however, some items measuring the same facet of academic procrastination were reverse worded. This technique was used with the intention to control for attention and filter out careless responses. For example, the typical item, such as "I do not get my school assignments done on time", the response of "extremely characteristic of me" corresponded to 5. On the other hand, the reversed items, such as "I start my school tasks ahead of schedule and finish them way before they are due", in this case, the response of "extremely characteristic of me" corresponded to 1. In theory, reverse coding in the second case meant flipping the number scale in the opposite direction so that an extreme value (e.g., 1 or 5) meant the same rating for each item. In practice, when coding the data, we compared the two answers of the two items and once we noticed that the two items had different ratings, the oppositely worded item was reverse-scored. However, once we noticed that the two items had similar ratings, it was possible that the participant was not paying attention while completing the questionnaire; as a result, the participant's responses were disqualified from further statistical analysis.

2.4. Statistical tests

IBM SPSS Statistics for Windows version 26 was employed to analyze the data. Descriptive statistics were presented as frequencies (%) for categorical variables and means and standard deviations (SD) for continuous ones. As a threshold for the statistical significance a two-tailed p-value of less than .05 was adopted. The internal consistency was assessed using Cronbach's alpha (α) to determine the reliability of the data collection instrument. The normality distribution of the data was assessed for the dependent variable using the Shapiro-Wilk test to determine whether the assumption of parametric statistical tests were met. Afterwards, a t-test was used to test whether there was any statistically significant difference between males and females in terms of their total academic procrastination scores. Lastly, the effect size was also calculated for group comparison.

2.5. Ethical considerations

The aim was to survey a sample of Moroccan public high school students about their procrastination tendencies. All participants were adequately informed about the voluntary nature of their participation in the study along with their awareness of their right to withdraw at any time. Participants were given 20 minutes to fill in the questionnaires anonymously. They were reassured that the final results will be aggregated and will not identify them personally or their responses. To ensure that we could not identify participants and would keep their responses confidential, we did not collect their names or any other personal information, the only information we collected was socio-demographic information to help answer the research questions and assess sample bias.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Sample demographics

In aggregate, 80 questionnaires were distributed during study hours. Every participant of the 80 completed the questionnaire in approximately 18 minutes under the supervision of one of the researchers. Of the 80 distributed questionnaires, only 67 questionnaires were analyzed (a response rate of 83%) as some participants submitted incomplete questionnaires or provided inconsistent or no responses at all for certain items. Of the 67 participants, 44 (67.2%) were female students while 23 (32.8%) were male students, thus, the gender distribution was skewed towards female students. The age of the students ranged from 16 to 20 with a mean age of 17.68 years old. As for procrastination scores, the mean score for female students was 63.4 (SD=15.34) while for male students it was 59.04 (SD=17.24). A total score of less than 20 indicated

mild procrastination, between 20 and 50 indicated average procrastination, between 50 and 80 indicated well-adjusted procrastination, and a score higher than 80 indicated severe procrastination. Accordingly, 16 (23.88%) students were found to have average procrastination, 41 (61.19%) students had well-adjusted procrastination, and 10 (14.92%) students had severe procrastination. As for grade retention, the number of students who have repeated at least a grade level in school because they have failed to meet required grade-level standards was 18 (26.9%) while those who did not were 49 (73.1%). Regarding school dropouts, the number of students who have dropped out at least one year from school because they have failed to meet required benchmarks was 4 (4.5%) while the number of those who did not was 63 (95.5%).

3.1.2. Independent samples t-test

The descriptive statistics presented in Table 1 provide a preliminary overview of score distribution across the two genders. As can be shown, the 44 female participants (n=44) obtained a slightly higher mean score (M=63.41, SD=15.35) compared to their male counterparts (n=23, M=59.39, SD=17.00). The difference in mean scores between the two groups was approximately 4.02 points. Notably, male participants exhibited slightly greater score variability than their female counterparts, as indicated by the higher standard deviation. While informative, descriptive statistics do not provide conclusions about the statistical significance of the observed gender difference in the academic procrastination scores.

An independent t-test was performed to test whether there is a statistically significant difference between males and females in terms of their procrastination scores. The results of the statistical test are displayed in Table 2. An alpha level of .05 was utilized as a threshold for the statistical significance. Female and male students' scores were sufficiently symmetrical. Additionally, the assumption of homogeneity of variances was tested via Levene's F test, F (65)=.03, p=.84. The results of the independent samples t-test show that the numerical difference between female and male students in terms of their procrastination scores is not statistically significant, t (65)=.98; p=.33. However, a small, almost medium effect size was noted, Cohen's d=.24, 95% CI). This value (d=.24) indicates that the difference between the two groups' means is .24 SD. Therefore, this difference cannot be negligible, even though it is not statistically significant.

Table 1. Means and SD of academic procrastination by gender

	Gender	N	Mean	Std. Deviation
Scores	Female	44	63.41	15.345
	Male	23	59.39	17.002

Table 2. Independent samples t-test results for gender differences in academic procrastination

		Levene's test for equality of variances		t-test for equality of means				
		F	Sig.	t	df	Sig. 2-tailed	Mean difference	Std. Error difference
Scores	Equal variances assumed	.038	.847	.981	65	.330	4.018	4.098

3.2. Discussion

The two overarching objectives of this current study were as follows: i) to explore the prevalence of academic procrastination among students in Moroccan public high schools and ii) to examine the gender differences between female students and their counterparts concerning their procrastination scores. The findings revealed two main outcomes. First, 14.9% of the participants were classified as chronic academic procrastinators, this indicated that a relatively small but meaningful subgroup of students engage in chronic and maladaptive delay behaviors. Second, the findings also demonstrated no statistically significant differences between male and female students in terms of their procrastination scores, this indicated that the procrastination tendencies were broadly similar across the two genders within this specific studied academic context. This section will build upon contemporary theoretical perspectives and recent empirical evidence in order to interpret these findings and situate them within the broader published literature.

At first glance, the reported prevalence of 14.9% seems to be relatively lower compared to what is commonly reported in the published literature. For example, theoretical reviews report that a large proportion of university students do engage in procrastination occasionally at least, reporting that 70% to 90% of university students do procrastinate on academic tasks [27], [28]. Moreover, cross-national comparisons between research findings show that, in Iran 96.1% of students experience moderate to severe levels of academic procrastination [29]. Other previous studies found that the prevalence of academic procrastination is 52% in Turkey [30], 67% in Jordan [31], 37.8% in Spain [32], 87.2% in Tunisia [33], 48% in the United Kingdom, 66% in Ethiopia [34], to name just a few nations. However, the literature is not entirely consistent, as it does not exclusively report high prevalence rates. For example, a study by Rozental *et al.* [35] showed

that only a subset of those classified as severe procrastinators, reported significant impairment or considered asking for help. Similarly, a 2024 study with a sample size of over 1300 students reported that around 14.3% had high levels of procrastination, a figure almost identical to the one observed among our current sample [36]. At this level of analysis, it can be observed that the reported prevalence rates vary across studies and countries. In order words, participants across these studies reported a broad range of symptoms that indicated varying procrastination degrees. Such variability in prevalence rates can be explained by methodological differences, namely the use of different measurement instruments, varying sampling strategies, diverse operational definitions of academic procrastination, different data collection techniques, different sample sizes, and different time horizons over which each study was conducted.

The relatively moderate prevalence rate of 14.9% observed in our study may also be attributable to the contextual demands faced by the participants of the study (final-year high school students during their national examination preparation). Worldwide, high-stakes exams are associated with considerable academic pressure, this period is marked by intensified workload, time pressure, structured study routines, and elevated external expectations [37]. We believe that these factors may have constrained students' ability to engage in prolonged task delay, thus contributing to lower levels of academic procrastination. This is supported by previous research which suggests that contextual factors such the aforementioned ones, can reduce procrastination behaviors, even among those who might otherwise be prone to procrastinate chronically [38], [39]. Therefore, the findings emphasize the necessity of taking into account the contextual factors when interpreting the prevalence rates of academic procrastination.

Regarding the second objective of identifying the potential gender differences between male and female students in terms of their academic procrastination scores, the study found no statistically significant difference between the two groups, suggesting that procrastination tendencies are similar across the two genders within the sampled population. This finding is found to be consistent with several investigations in the field that have reported no statistically meaningful differences as well. For instance, a recent study examining academic procrastination among medical students reported that gender was not a significant predictor of academic procrastination [40]. Similarly, a cross-sectional investigation among 200 high academic procrastinators found no statistically significant differences either. A finding found to be consistent with our earlier reported finding regarding gender differences in academic procrastination [41]. However, our finding is inconsistent with findings by other studies [42]–[45] that show statistically significant differences between male and female students with males tending to procrastinate more frequently than females.

As can be seen, the reported findings are varied and lack significant consensus. These dissimilar reported findings in terms of gender differences could be explained within the cross-national reasons described previously. Another explanation can be attributed to the homogeneity of the sample. In this study, the sample had roughly the same educational background. All the participants were enrolled in roughly the same state school, at the same major, and in the same grade level, by extension, the sample had a similar course load, standardized test, homework requirements, and assignment deadlines. It can be assumed that these symmetry factors of the schooling environment may have impacted the results of the study. Overall, this lack of consensus suggests that procrastination can be better explained by individual differences in self-regulation and motivation rather than by demographic character such as gender. From a theoretical perspective, our findings support the model which conceptualizes procrastination as a form of self-regulation failure, involving difficulties in managing time, emotions, and goal-directed behavior. These processes are not inherently gender specific, which may explain the similarity observed between male and female students in this study. Both groups are likely exposed to comparable academic demands and pressures, particularly during the critical exam preparation period, which led to similar behavioral patterns as far as our explanation.

4. CONCLUSION

To conclude, academic procrastination is one of the most counterproductive behaviors in the field of education, often overlooked until its consequences become significant. This study examined its prevalence and explored whether gender played a role in shaping academic tendencies among students. Using a sample of 67 high school students, the findings revealed a prevalence rate of 14.9% and demonstrated no statistically significant gender difference between male and female students in their likelihood to procrastinate. The study provided regional grounded evidence for the prevalence of academic procrastination, which added to the growing body of literature that aims to understand academic procrastination across different academic contexts. Additionally, the findings provided early prevalence rates of academic procrastination, allowing for timely interventions before the behavior becomes harder to alleviate. Also, the absence of gender differences emphasized the need for inclusive intervention strategies. In this regard, researchers and educators are encouraged to develop targeted intervention programs ranging from counseling, time management training, and academic coaching, to reduce academic procrastination tendencies among students at an early age.

Regardless of its contributions, the study should be seen in the light of some limitations. To begin with, the small sample size of 67 participants. While being sufficient to draw preliminary conclusions, it is considered low for broader generalization across different academic institutions. In the same vein, the reliance on convenience sampling also represents a significant methodological limitation. Moreover, this study relied primarily on self-reported data, which is extremely subject to social desirability bias, potentially affecting the accuracy of the data collected. Therefore, we suppose that some of the participants, if not all of them, have offered biased estimates of the assessed behaviors. This social desirability might have taken the form of over-rating "good" behaviors and under-rating "bad", or undesirable behaviors. Likewise, it is also very possible that some participants have not shown polarity and have demonstrated central tendency biases by placing most of the questionnaire's items in the middle of the rating scale.

While addressing the limitations is warranted, other limitations should be addressed. For example, future studies are encouraged to employ larger and random samples, preferably using stratified random sampling techniques, in order to ensure that the findings are representative of the target population. Furthermore, the inclusion of students from diverse academic backgrounds and levels would yield generalizable findings. Future research should also investigate the psychological as well as the environmental predictors of academic procrastination. Variables such as anxiety, depression, perfectionism, just to name a few are worthy of future research in relation to academic procrastination within the Moroccan academic contexts. Additionally, longitudinal research designs are also needed, as they would allow researchers to track the evolution of academic procrastination behaviors throughout the academic journey of the student and help identify stages where interventions may be most efficient. In addition, we suggest that future research should also go beyond merely descriptive studies towards experimental research designs to implement and test the effectiveness of programs and training designed to reduce academic procrastination behaviors.

FUNDING INFORMATION

This research was self-initiated and has not been funded by any institution.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Khadija Saidi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	
Mohamed Garmah	✓	✓		✓		✓	✓	✓		✓		✓	✓	
Abderrahim Ait Abdeslam	✓	✓		✓		✓	✓			✓			✓	

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

No potential conflict of interest was reported by the authors.

DATA AVAILABILITY

The data supporting the findings of the article will be made available by the authors upon request.

REFERENCES

[1] M. P. González-Brignardello, A. Sánchez-Elvira Paniagua, and M. Á. López-González, "Academic Procrastination in Children and Adolescents: A Scoping Review," *Children*, vol. 10, no. 6, p. 1016, Jun. 2023, doi: 10.3390/children10061016.
[2] A. Aran and B. Ü. Ünal, "Academic Procrastination and Smartphone Addiction Among Medical Students: A Cross-Sectional Study from Turkey," *Bratislava Medical Journal*, vol. 127, no. 3, pp. 1260–1268, Jan. 2026, doi: 10.1007/s44411-025-00483-0.
[3] M. E. Beutel *et al.*, "Procrastination, Distress and Life Satisfaction across the Age Range – A German Representative Community Study," *PLOS ONE*, vol. 11, no. 2, p. e0148054, Feb. 2016, doi: 10.1371/journal.pone.0148054.

[4] P. Steel and J. Ferrari, "Sex, Education and Procrastination: An Epidemiological Study of Procrastinators' Characteristics from A Global Sample," *European Journal of Personality*, vol. 27, no. 1, pp. 51–58, Jan. 2013, doi: 10.1002/per.1851.

[5] A. Scheunemann, T. Schnettler, J. Bobe, S. Fries, and C. Grunschel, "A longitudinal analysis of the reciprocal relationship between academic procrastination, study satisfaction, and dropout intentions in higher education," *European Journal of Psychology of Education*, vol. 37, no. 4, pp. 1141–1164, Dec. 2022, doi: 10.1007/s10212-021-00571-z.

[6] Y. Nie *et al.*, "The association between procrastination and negative emotions in healthy individuals: a systematic review and meta-analysis," *Frontiers in Psychiatry*, vol. 16, Oct. 2025, doi: 10.3389/fpsyt.2025.1624094.

[7] D. Popova and E. Pronenko, "Academic procrastination in the context of meaning structures of personality: why is it important for the formation of sustainable behavior," *E3S Web of Conferences*, vol. 376, p. 05058, Mar. 2023, doi: 10.1051/e3sconf/202337605058.

[8] F. Johansson *et al.*, "Associations Between Procrastination and Subsequent Health Outcomes Among University Students in Sweden," *JAMA Network Open*, vol. 6, no. 1, p. e2249346, Jan. 2023, doi: 10.1001/jamanetworkopen.2022.49346.

[9] P. Song, X. Liu, X. Cai, M. Zhong, Q. Wang, and X. Zhu, "Predictive analysis of college students' academic procrastination behavior based on a decision tree model," *Humanities and Social Sciences Communications*, vol. 11, no. 1, p. 869, Jul. 2024, doi: 10.1057/s41599-024-03300-1.

[10] H. C. M. Niermann and A. Scheres, "The relation between procrastination and symptoms of attention-deficit hyperactivity disorder (ADHD) in undergraduate students," *International Journal of Methods in Psychiatric Research*, vol. 23, no. 4, pp. 411–421, Dec. 2014, doi: 10.1002/mpr.1440.

[11] M. Turki *et al.*, "Relationship between self-esteem, self-efficacy and academic procrastination among medical students," *European Psychiatry*, vol. 66, no. S1, pp. S554–S555, Mar. 2023, doi: 10.1192/j.eurpsy.2023.1169.

[12] S. Asadnia, M. R. Mufassery, M. Agashteh, P. Hosseinpour, and P. Bagheri, "The relationship between obsessive-compulsive disorder and academic procrastination and the mediating role of cognitive avoidance," *Shenakht Journal of Psychology and Psychiatry*, vol. 11, no. 06, pp. 76–91, Jan. 2025, doi: 10.32598/shenakht.11.6.76.

[13] J. Klibert, K. LeLeux-LaBarge, N. Tarantino, T. Yancey, and D. A. Lamis, "Procrastination and suicide proneness: A moderated-mediation model for cognitive schemas and gender," *Death Studies*, vol. 40, no. 6, 2016, doi: 10.1080/07481187.2016.1141262.

[14] R. Bahl, S. Gupta, K. Tanwar, Z. Khan, I. A. Hakak, and F. Amin, "Locus of control, academic procrastination and academic performance amongst university students: moderating role of parental involvement," *Journal of Applied Research in Higher Education*, vol. 17, no. 5, pp. 1881–1897, Oct. 2025, doi: 10.1108/JARHE-04-2024-0181.

[15] X. Tao, H. Hanif, and W. Lieqin, "The effects of self-regulated learning strategies on academic procrastination and academic success among college EFL students in China," *Frontiers in Psychology*, vol. 16, Jul. 2025, doi: 10.3389/fpsyg.2025.1562980.

[16] X. Zhou, F. Yang, Y. Chen, and Y. Gao, "The correlation between mobile phone addiction and procrastination in students: A meta-analysis," *Journal of Affective Disorders*, vol. 346, pp. 317–328, Feb. 2024, doi: 10.1016/j.jad.2023.11.020.

[17] A. L. Flett, M. Haghbin, and T. A. Pychyl, "Procrastination and Depression from a Cognitive Perspective: An Exploration of the Associations Among Procrastinatory Automatic Thoughts, Rumination, and Mindfulness," *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, vol. 34, no. 3, pp. 169–186, Sep. 2016, doi: 10.1007/s10942-016-0235-1.

[18] F. M. Sirois, "Is procrastination a vulnerability factor for hypertension and cardiovascular disease? Testing an extension of the procrastination–health model," *Journal of Behavioral Medicine*, vol. 38, no. 3, p. 578, 2015, doi: 10.1007/s10865-015-9629-2.

[19] S. Zuber *et al.*, "I could do it now, but I'd rather (forget to) do it later: examining links between procrastination and prospective memory failures," *Psychological Research*, vol. 85, no. 4, pp. 1602–1612, Jun. 2021, doi: 10.1007/s00426-020-01357-6.

[20] T. Gamst-Klaussen, P. Steel, and F. Svartdal, "Procrastination and Personal Finances: Exploring the Roles of Planning and Financial Self-Efficacy," *Frontiers in Psychology*, vol. 10, Apr. 2019, doi: 10.3389/fpsyg.2019.00775.

[21] X. Ma *et al.*, "Bedtime procrastination predicts the prevalence and severity of poor sleep quality of Chinese undergraduate students," *Journal of American College Health*, vol. 70, no. 4, pp. 1104–1111, May 2022, doi: 10.1080/07448481.2020.1785474.

[22] D. Dautov, "Procrastination and laziness rates among students with different academic performance as an organizational problem," *E3S Web of Conferences*, vol. 210, p. 18078, Dec. 2020, doi: 10.1051/e3sconf/202021018078.

[23] M. Balkis and E. Duru, "Procrastination, self-regulation failure, academic life satisfaction, and affective well-being: underregulation or misregulation form," *European Journal of Psychology of Education*, vol. 31, no. 3, pp. 439–459, Jul. 2016, doi: 10.1007/s10212-015-0266-5.

[24] S. Valente, S. Dominguez-Lara, and A. Lourenço, "Planning Time Management in School Activities and Relation to Procrastination: A Study for Educational Sustainability," *Sustainability*, vol. 16, no. 16, Aug. 2024, doi: 10.3390/su16166883.

[25] N. C. Hall, S. Y. Lee, and S. Rahimi, "Self-efficacy, procrastination, and burnout in post-secondary faculty: An international longitudinal analysis," *PLOS ONE*, vol. 14, no. 12, p. e0226716, Dec. 2019, doi: 10.1371/journal.pone.0226716.

[26] A. Rozental *et al.*, "Treating Procrastination Using Cognitive Behavior Therapy: A Pragmatic Randomized Controlled Trial Comparing Treatment Delivered via the Internet or in Groups," *Behavior Therapy*, vol. 49, no. 2, pp. 180–197, Mar. 2018, doi: 10.1016/j.beth.2017.08.002.

[27] M. Goroshit and M. Hen, "Academic procrastination and academic performance: Do learning disabilities matter?" *Current Psychology*, vol. 40, no. 5, pp. 2490–2498, May 2021, doi: 10.1007/s12144-019-00183-3.

[28] Y. Fentaw, B. T. Moges, and S. M. Ismail, "Academic Procrastination Behavior among Public University Students," *Education Research International*, vol. 2022, pp. 1–8, Jul. 2022, doi: 10.1155/2022/1277866.

[29] S. Ghasempour, A. Babaei, S. Nouri, M. H. Basirinezhad, and A. Abbasi, "Relationship between academic procrastination, self-esteem, and moral intelligence among medical sciences students: a cross-sectional study," *BMC Psychology*, vol. 12, no. 1, p. 225, Apr. 2024, doi: 10.1186/s40359-024-01731-8.

[30] B. U. Özer, A. Demir, and J. R. Ferrari, "Exploring Academic Procrastination Among Turkish Students: Possible Gender Differences in Prevalence and Reasons," *The Journal of Social Psychology*, vol. 149, no. 2, pp. 241–257, Apr. 2009.

[31] A. M. Mahasneh, O. T. Bataineh, and Z. H. Al-Zoubi, "The Relationship Between Academic Procrastination and Parenting Styles Among Jordanian Undergraduate University Students," *The Open Psychology Journal*, vol. 9, no. 1, pp. 25–34, May 2016, doi: 10.2174/1874350101609010025.

[32] L. J. Martín-Antón, M. C. Saiz-Manzanares, P. Molinero-González, W. L. Arteaga-Cedeño, A. Soto-Sánchez, and M. A. Carbonero, "Academic Procrastination of Spanish Pre-service Teachers during the COVID-19 Pandemic," *Psicología Educativa*, vol. 30, no. 1, pp. 57–66, Jan. 2024, doi: 10.5093/psed2023a17.

[33] F. Sahnoun *et al.*, "Academic procrastination among Tunisian medical students: prevalence and associated factors," *European Psychiatry*, vol. 66, no. S1, pp. S554–S555, Mar. 2023, doi: 10.1192/j.eurpsy.2023.1170.

[34] A. H. Herut and Y. A. Gorfu, "Academic procrastination among PhD students in Ethiopia: An examination of prevalence, associated factors and coping mechanisms," *Social Sciences & Humanities Open*, vol. 9, p. 100854, 2024, doi: 10.1016/j.ssaho.2024.100854.
[35] A. Rozental, D. Forsström, A. Hussoon, and K. B. Klingsieck, "Procrastination Among University Students: Differentiating Severe Cases in Need of Support from Less Severe Cases," *Frontiers in Psychology*, vol. 13, Mar. 2022, doi: 10.3389/fpsyg.2022.783570.
[36] Y. Zhou, C. Cao, L. Liu, Z. Liu, and J. Liu, "Academic procrastination of nursing students in higher vocational college: Application of latent profile analysis and network analysis," *Acta Psychologica*, vol. 246, p. 104296, Jun. 2024, doi: 10.1016/j.actpsy.2024.104296.
[37] I. S. Santiago *et al.*, "Stress and exhaustion among medical students: a prospective longitudinal study on the impact of the assessment period on medical education," *BMC Medical Education*, vol. 24, no. 1, 2024, doi: 10.1186/s12909-024-05617-6.
[38] J. Kühnel, R. Bledow, and A. Kuonath, "Overcoming Procrastination: Time Pressure and Positive Affect as Compensatory Routes to Action," *Journal of Business and Psychology*, vol. 38, no. 4, pp. 803–819, Aug. 2023, doi: 10.1007/s10869-022-09817-z.
[39] I. Musteață and A. C. Holman, "Factors of Workplace Procrastination: A Systematic Review," *Social Sciences*, vol. 14, no. 6, p. 380, Jun. 2025, doi: 10.3390/socsci14060380.
[40] K. A. Khalil *et al.*, "Academic procrastination among Sudanese medical students through the lens of gender: a cross-sectional study," *BMC Medical Education*, vol. 25, no. 1, p. 1607, Nov. 2025, doi: 10.1186/s12909-025-08211-6.
[41] M. A. Ashraf, N. Sahar, M. Kamran, and J. Alam, "Impact of Self-Efficacy and Perfectionism on Academic Procrastination among University Students in Pakistan," *Behavioral Sciences*, vol. 13, no. 7, p. 537, Jun. 2023, doi: 10.3390/bs13070537.
[42] M. Balkis and E. Duru, "Gender Differences in Procrastination and Subjective Well-Being: A Cross-Sectional Study Among Students and Non-Students," *Psychological Reports*, vol. 129, no. 2, pp. 1077–1101, 2026, doi: 10.1177/00332941241253588.
[43] Q. Liu and J. Li, "A one-year longitudinal study on the mediating role of problematic TikTok use and gender differences in the association between academic stress and academic procrastination," *Humanities and Social Sciences Communications*, vol. 11, no. 1, p. 1132, Sep. 2024, doi: 10.1057/s41599-024-03654-6.
[44] D. Lu, Y. He, and Y. Tan, "Gender, Socioeconomic Status, Cultural Differences, Education, Family Size and Procrastination: A Sociodemographic Meta-Analysis," *Frontiers in Psychology*, vol. 12, Jan. 2022, doi: 10.3389/fpsyg.2021.719425.
[45] H. Martínez-Huerta, W. X. Chavarría-Garza, O. Aquines-Gutiérrez, and A. Santos-Guevara, "Exploring the gender gap: motivation, procrastination, environment, and academic performance in an introductory physics course in a human-centered private university in Northeast Mexico—A Case Study," *Education Sciences*, vol. 14, no. 2, 2024, doi: 10.3390/educsci14020186.

BIOGRAPHIES OF AUTHORS



Khadija Saidi is a doctoral student at the Faculty of Letters and Humanities, Sultan Moulay Slimane University, Beni Mellal, Morocco. Her research focuses on academic procrastination, self-regulation, and factors affecting student learning and performance. She aims to advance understanding of how motivational and personality factors influence academic outcomes and to support evidence-based educational practices. She can be contacted at email: Khdejasaidi@gmail.com.



Mohamed Garmah is a professor of English at the Ecole Nationale de Commerce et de Gestion at the Université Sultan Moulay Slimane in Beni Mellal, Morocco, and belongs to the university's Research Laboratory in Literature, Language, Culture and Communication. Primary Research interests revolve around Educational Psychology, addiction, and academic achievement. He can be contacted at email: garmah.mohamed@gmail.com.



Abderrahim Ait Abdeslam is an associate professor of English studies and discourse analysis at Sultan Moulay Slimane University, Beni Mellal. He is a member of the research laboratory in literature, language, culture and communication, affiliated with the English department at the faculty of Letters and Humanities in Beni Mellal. He has published many peer-reviewed papers and has participated in many national and international conferences. His research areas are discourse analysis, media studies, and foreign language teaching in higher education. He can be contacted at email: a.aitabdeslam@usms.ma.