



## Research Article

# Socio-demographic correlates of academic procrastination among undergraduates

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This study determined the relationship between some socio-demographic variables of undergraduates, and their academic procrastination behaviors. A cross sectional survey involving 250 participants that comprised 125 females and 125 males was used for the study. A research protocol was used to elicit information on respondents' bio-data, and self-reported behaviour of procrastination and religious orientation using the General Procrastination Scale (GPS) and Religious orientation Scale (ROT), respectively. The result of this study indicates that, religiosity did not significantly relate to academic procrastination among the participants, ( $r = 0.016, p = .802, p > .05$ ). The study also, found a significant relationship existed between undergraduates in their first year of university education, and those in their sophomore year and higher levels of undergraduate studies and their behaviour of academic procrastination ( $F = 3.426, p = .010, p < .05$ ). This result implies that, students at different levels of undergraduate studies engage in various levels of academic procrastination, with those in their first year of undergraduate studies procrastinating more than those in their sophomore year and higher levels of undergraduate studies. The study concluded that, religiosity has no relationship with academic procrastination among participants, while students in their first year of university education procrastinated more often than those in other levels of undergraduate studies.

**Keywords:** Academic procrastination, grade level, religiosity, socio-demographic variables, undergraduates

## 1. Introduction

The mere mention of the word procrastination, reminds most individuals about scenarios of their experience of this psychological concept. The common adage that "never put off for tomorrow what you can do today" may not suffice to help most people not to procrastinate from time to time. Procrastination is an intentional delay in beginning and completing a task or behaviour that most often leads to subjective discomfort (Ferrari, 1998, p. 281). It can also be viewed as delaying an action or behaviour despite the unfavourable feeling or outcome such a delay can result to (Steel, 2007). As humans, we all have delayed and postponed our action or behaviour, even the very important ones by assuring ourselves that "it can be done later, for sure". Procrastination is a well-known phenomenon in psychology, and it can be broadly viewed from two points: 1) From the academic perspective (that is academic procrastination and 2) the medical perspective (that is neurotic indecision) (Milgram et al., 1988).

Procrastination is becoming a very frequent, problematic, prevalent, and well known phenomenon (Ferrari & Roster, 2018; Klingsleck, 2013; Kroese et al., 2014; Steel, 2007). The prevalence of procrastination has been some worth incremental over the years, research on the general population, suggest that, about a third of the participants, agreed that, procrastination is a major challenge they dealt with in their academic pursuit (Steel & Ferrari, 2013). An earlier study by Solomon and Rothblum (1984) found a prevalence of 46% involve in academic procrastination among University students, most of who agreed that they most often than not procrastinate. Another 30% of the students agreed that, they engaged in procrastination for reading weekly assignments or studying for their examination. About 25% of the participants reported that they had a challenge with procrastinating academic activities. Furthermore, 65% of the students

reported their desire to reduce their procrastination for writing papers, and 62% of the respondents said they desire to reduce their procrastinating when studying for exams. Finally, 55% of the participants said they are working on reducing their procrastination when studying for weekly assignments (Solomon & Rothblum, 1984). Gallagher et al. (1992) indicated that, 52% of their participants self-reported experiencing moderate / high level need of assistance to overcome their struggle with procrastination. Another research suggestef, that, 50% of student respondents procrastinated frequently and viewed procrastination as a significant challenge they experience daily (Klingsieck, 2013).

The definition of procrastination most often suggest that, procrastination is a behaviour people engage in, intentionally, and that, delaying can be dysfunctional, (Schraw et al., 2007). Several researchers have proffered numerous definitions of procrastination, (Lay, 1986), viewed procrastination as a consistent failure of not doing what is needful to achieve a goal. While, Ellis and Knaus (2002) posit that, procrastination is a behaviour of avoiding an activity, the desire to do it later, and giving excuses as a justification for delaying so as to avoid blame. Furthermore, (Noran, 2000) viewed a procrastinator from the perspective of an "individual " who knowing what he/she requires to do, and desires to carry out the task, but fails to complete the desired task, or continuously delays undertaking the task. Such an individual, prefers to work on less important tasks, postpone the fulfilling tasks that are more important, and choose to waste time doing minor activities or those tasks that give him pleasure (Noran, 2000). Procrastination is simply avoiding or postponing a task needed to be accomplished (Ajayi, 2007).

Academic procrastination can be potentially maladaptive and permeating behaviour that many college and university students experience (Ferrari, & Roster, 2018; Klingsieck, 2013; Kroese et al., 2014; Roberts, 1995; Rothblum, 1984; Rothblum et al., 1986; Solomon & Rothblum, 1984). It can cause a feeling of negative emotions and psychological distress (Solomon & Rothblum, 1984). According to Rahimi et al. (2023), and Solomon and Rothblum (1984), the anxiety of future failure and the anxiety about upcoming task are the two main reasons why people procrastinate. A research involving students in a university indicated that procrastination was more common with task perceived as impositions or as unpleasant compared with task that students viewed as lacking the required skill set to accomplish (Norman et al., 1984). Ackerman and Gross (2005), suggest that procrastination is caused by personal behavioural characteristics, such as, a lack of self-regulation, lack of motivation, locus of control, disorganization, poor time management, and external perfectionism. Procrastination may be seen as a way to avoid or escape from undesirable tasks (Rahimi et al., 2023). Most individuals may justify their procrastinations by inner speeches like "I can always complete the task later" or "this is a boring task" (Rahimiet al., 2023).

The five most prevalent categories of procrastination are decisional procrastination, life routine procrastination, obsessive procrastination, neurotic procrastination, and intellectual procrastination (Balkis & Duru, 2009). Academic procrastination is the most prevalent amongst other forms of procrastination; 90% of students procrastinate as found by (Ellis & Knaus, 1977). Studies reveal that procrastination might have a negative impact on academic advancement, since it reduces both the capability and excellence of a student's performance (Hussain & Sultan, 2010; Saleem & Rafique, 2012). According to (Ferrari, 1995), different ways in which students procrastinate include; delay in updating their class notes, submitting an assignment late, being hesitant in accomplishing duties, waiting until the final minutes to finish a task, and delaying important tasks until an assumed convenient time. There is a high incidence of academic procrastination among college students, estimated to be 80% (Schubert & Stewart, 2000; Steel & Ferrari, 2013), and it has also been mentioned as one of the more prevalent issues post-secondary students face, with estimates ranging from 10% to 70% (Schubert & Stewart, 2000; Steel & Ferrari, 2013).

Academic procrastination is a type of procrastination which is endemic in academic settings among students (Ferrari & Roster, 2018; Klingsieck, 2013; Kroese et al., 2014; Odaci, 2011). Although procrastination is not necessarily limited to undergraduates but can also be seen in children as young as those in primary or elementary school and also among those that have

attained higher educational qualification, like masters degree and even doctorate degrees, (Odaci, 2011). Among undergraduates, procrastination may involve; understanding one's need to undertake an academic activity or an academic task, like writing a term paper, preparing for an examination, undertaking weekly completion of assignments, or completing a school related project, but for no justifiable reason, or lack the motivation to take action within the expected time frame, the task is undone, (Ackerman & Gross, 2005). Academic procrastination has been a pervasive phenomenon in colleges and university campuses for decades (Day et al., 2000). University students engage in academic procrastination due to their personal traits, and other factors like issues with time management, lecturers teaching method, peer pressure and lack of motivation. Students would rather engage in recreational activities like spending time with friends, going to the movies and partying rather than studying for examinations (Noran, 2000). According to Ferrari (1995), some ways students demonstrate their behaviour of procrastination include late submission of assignment, failing to meet deadlines, delaying writing of notes, delaying a task till assumed convenient time, waiting till dying minutes to accomplish a task and being reluctant in undertaking academic tasks.

This research explored religiosity as it correlates with academic procrastination. Religiosity according the current online edition of Merriam-Webster (2023) is the quality or state of being religious: religious feeling or devotion. It has also, been defined as the obedience to the practices and beliefs of an organized religious institution (Shafranske & Malony, 1990). Religiosity can have an effect on a student's goal, influence their daily functioning and well-being, because of the search for the sacred and through the practice of religious tradition (Silberman, 2005). The study by Abd et al. (2021) found that, resilience reduces and has an influence or indirect effect on academic procrastination, with religious character having a meditating effect. Umi and Lisnawati's (2022) study on the impact of parental social support, self-regulation learning, and religion on academic procrastination among distance learners, revealed that, all variables affected academic procrastination. Regnerus and Elder (2003) indicated in their study, that, youths who seriously commit themselves to church activities avoid risky behaviours like procrastination.

Research evidence demonstrates religiosity is correlated negatively with academic performance, as suggested by (Elias et al., 2005), that found religiosity was significantly correlated with perceived academic control but had a negative correlation with procrastination among undergraduates. Another research conducted by Muller and Ellison (2001), found personal religious engagement modestly related to positive school behaviour, including engaging less in procrastination, while Trusty and Watts (1999), found religiosity to be positively correlated with interest in academics, as students were religious were more positive towards school activities. Early research on religiosity have also, revealed a correlation between religiosity and some other factors. For instance, adolescents who are religious are less prone to risky behaviours, they engage more often, in positive activities (Bridges & Moore, 2002). This suggest that adolescents who viewed themselves as religious, most often avoided violent behaviours, risk or danger, and never had issues with the police (Smith & Faris, 2002). Religious adolescents are also, likewise less prone to avoid school, put off academic tasks, get suspended or expelled, and sent to detention (Smith & Faris, 2002). According to (Regnerus et al., 2003), religious adolescents and young adults, more often than their nonreligious peers engaged in healthier behaviours; like using seatbelts while driving, exercising regularly and have better sleeping and eating habits.

Another variable of interest in the present study is academic level. Academic level refers to the present level or year of study that, a student is at during the course of their college or university education. AlQudah et al. (2014) and Ozer et al. (2009) show that, there is no difference in student's procrastination at various levels of their academic pursuit in the university. Another study by Abu Ghazal (2012), on procrastination at different levels of post secondary school education, indicated a statistical significant difference existed in procrastination behaviour at different levels of study with fourth year students procrastinating more than other levels.

Although it has not been concluded that undergraduates at a particular level of university education suffer or engage more in procrastination, because procrastination is a behaviour

students engage in for several reasons. For instance, a first year undergraduate may procrastinate as a result of being in a new environment and trying to navigate the new environment, so also, a final year undergraduate can put things off, and it could be attributed to factors like: writing a thesis, having to read for other courses. All these can be reasons for academic procrastination among students at different levels of undergraduate studies.

## 2. Problem Statement

Procrastination is a long standing and a very common phenomenon in our society (Ferrari & Roster, 2018; Klingsleck, 2013; Kroese et al., 2014; Steel, 2007). Throughout the period of schooling, students especially, university students have to cope with assignments, class work, projects, term papers and other forms of reading materials almost all the time; and a considerable number of students despite their tight schedule frequently engage in procrastination (Uzun Ozer & Sackes, 2011). The estimated incidence of academic procrastination among university students is 80% and it has also been reported has the most common problem experienced by post-secondary school students with estimates from 10% to 70% (Schubert & Stewart, 2000; Steel & Ferrari, 2013). Academic procrastination may lead to mental and physical health problems in individuals who engage in procrastination, for instance, school burnout (Akin, 2012; Cakir et al. 2014; Cerino 2014; Katz et al. 2014). Studies have also pointed to other societal challenges like substance use problems resulting to procrastination (Ainslie 2005; Critchfield & Kollins, 2001). Academic procrastination could also, lead to unhealthy habits like irregular patterns in diet, exercise, and sleep (Sirois & Pychyl, 2013). Academic procrastination may reduce confidence and perceived ability at completing a task, among students (Steel, 2007). According to Zhang et al. (2020) there is a link between procrastination and anxiety which can affect achievement of goals. While Hussain and Sultan (2010) suggest that, procrastination can result in a higher level of stress, plagiarism, more use of alcohol, cigarettes and caffeine, low self-esteem, unhealthy self-care habits like poor eating, lack of exercise and depression. It can also lead to insomnia, flu and cold symptoms (Adkins & Parker, 1996). For this reasons procrastination is becoming of interest to numerous fields and sectors, including behavioural economics and public policy (Lynch & Zauberman, 2006; Thaler & Sunstein, 2008). In terms of the influence religiosity contributes to procrastination among university students, some studies suggest religiosity being negatively correlated with educational achievement (Shermer, 2003), while Trusty and Watts (1999) found that religiosity to be positively correlated with interest in academics, as students who are religious had a better attitude towards schooling. Most of the earlier studies so far were focused on other factors apart from religiosity. The level or year of university education a student is at and its influence on procrastination is not completely known, some studies found no significant difference in the level of procrastination among students at different levels or year of university education, (AlQudah et al., 2014; Özer et al., 2009). Research on the independent variables of this study, (religiosity and level at university education) and how they influence procrastination seem to be few. Also, even fewer studies have been carried out in Nigeria on the variables of interest, hence the present study. The study tested the following hypotheses:

H1) There is a significant relationship between religiosity and academic procrastination among undergraduates.

H2) Participant's level or year of University education is significantly influence their academic procrastination.

## 3. Method

### 3.1. Research Design

The study used a cross-sectional survey design. This allowed the researchers to better grasp the connection between the variables, as well as define the variables of interest as they existed in the population. None of the variables were intentionally modified. The independent factors are religiosity and level or year of study, while the dependent variable is academic procrastination.

### 3.2. Participants

Participants were chosen by an incidental sampling strategy from a population which consisted of undergraduate students. The sample size was estimated with G-POWER. The effect size was 0.3 (medium), with a .05 level of significance and a 95% confidence interval level, yielding a sample size of 138, which was rounded up to 250 individuals. There were an equal number of male and female undergraduates (that is 250 male and females respectively.).

### 3.3. Instruments

To gather data for the study, a self-report questionnaire was employed, which included questions collecting information on respondents' bio-data as well as two scales evaluating the variables of interest. The General Procrastination Scale [GPS] by (Lay, 1986) examined academic procrastination among students. It is a one-dimensional 20-item scale that assesses the inclination to delay on daily chores. The questions are in statement form, and they contain (for example, item 20). I normally do all of the chores I need to complete before I lie down and rest for the evening), relevant academic items (for example, item 12. In preparation for a deadline, I frequently squander time doing other things).

The response on each item are on a 5-point Likert scale, ranging from (5) very typical to (1) exceedingly unusual. The following elements (3, 4, 6, 8, 11, 13, 14, 15, 18, 20) are assessed in reverse order, with the sum of all items determining the procrastination score. High scores suggest a greater procrastination rate. The authors reported a Cronbach alpha of .82 and a test-retest reliability of 0.80.

Religiosity was measured using the Religious Orientation Test [ROT] developed by Idehen (2001), to elicit information on participant's level of religious orientation (superficial religious orientation or deep religious orientation). It has 6-item, with a 5-point Likert scale response format that, measures religious orientation. Deep religious orientation scores is between 6-11 while superficial religious orientation scores is between 12-30. The author reported .75 as reliability coefficient, while .80 was reported as internal consistency.

### 3.4. Procedure

After obtaining an ethical clearance from the University of Lagos Ethics Committee the researchers proceeded to the field to administer the study's questionnaires. The researchers first described and explained the purpose of the study to potential participants, and those who freely consented to be interested in participating in the study were given the research protocol to complete. The research protocol was administered to the respondents in various departments, and collected promptly upon completion. A total of 290 questionnaires were issued, 272 were retrieved, however only 250 questionnaires that were fully completed were used for data analysis in the study.

## 4. Results

This section contains statistical analyses of the results derived from the data gathered. Regarding the first hypothesis, "*There is a significant relationship between religiosity and academic procrastination among undergraduates*" was assumed. This hypothesis was tested using the Pearson product moment. The results are summarized in Table 1 and Table 2.

Table 1

*Mean and standard deviation of variables*

	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>
Academic procrastination	250	55.19	11.14
Religiosity	250	16.13	4.27

With a sample of 250, the mean religiosity score was 16.13 with a standard deviation of 4.27. While the mean score for academic procrastination is 55.19 and the standard deviation is 11.140.

Table 2  
Pearson product moment statistics

Variables	Mean	SD	1	2
Academic procrastination	55.19	11.14	1	
Religiosity	16.13	4.27	.016	1

Note. \*\*. Correlation is not significant at the 0.05 level (2-tailed).

Results shows that there was no significant relationship between academic procrastination and religiosity ( $r = 0.016, p = .802, p > .05$ ). Thus, hypothesis one was rejected.

In terms of second hypothesis, "A participant's level or year of University education is significantly influence their academic procrastination" was assumed. With a sample of 250, the mean academic procrastination score of 100 level students was 60.19 with a standard deviation of 12.40, 200 level student's mean score was 56.55 and the standard deviation of 11.89 the 300-level student's mean score was 54.62 and the standard deviation is 9.36. Also, the 400 level students mean was obtained as 50.56 with the standard deviation of 10.22 and finally the 500-level student's mean score was 52.68 with a standard deviation of 11.38. The mean of 100 level students is higher than that of the other students. The descriptive results are as in Table 3.

Table 4  
Descriptive statistics of level of study and academic procrastination

	N	Mean	SD
100 level	26	60.19	12.40
200 level	87	56.55	11.89
300 level	82	54.62	9.36
400 level	30	50.56	10.22
500 level	25	52.68	11.38
Total	250	55.19	11.14

The hypothesis was tested using Analysis of Variance (ANOVA) and the result was shown in Table 4.

Table 4  
ANOVA results of the difference in the academic procrastination among various levels

	Sum of Squares	D.f	Mean Square	F	Sig.
Between Groups	1637.141	4	409.285	3.426	.010
Within Groups	29265.643	245	119.452		
Total	30902.784	249			

According to the ANOVA results, a significant difference in academic procrastination among the 100 level, to 500 level students ( $F = 3.426, p = .010, p < .05$ ) was found. Therefore, the hypothesis was accepted.

## 5. Discussion

The study examined religiosity and student's level of university education as correlates of academic procrastination. The study indicated interesting findings. According to the findings of this study, there is no relationship between religiosity and academic procrastination. The study also indicated that there exists a difference in the academic procrastination of undergraduates in various levels of their study. This study's finding that there is no relationship between religiosity and academic procrastination suggest that, a student's religiousness has no influence on their behaviour of procrastination. This result is not in harmony with the study by Abd et al. (2021) who determined the relation between resilience, social support and academic procrastination with religious character as a mediating variable among university students and found that, resilience has an influence and indirect effect on academic procrastination with the meditating effect of religious character. This result is not also in agreement with that of Umi and Lisnawati(2022) that

examined the influence of parental social support, self-regulation learning and religiosity on academic procrastination among students involved e-learning. Their findings suggested that, all the variables had an influence on academic procrastination. This divergence in the finding with that of Umi and Lisnawati (2022) might be due the difference in the metrics that both researches utilized to assess procrastination and religiosity. While this study, relied on the General Procrastination scale for student population by Lay (1986) and the Religious Orientation Scale by Idehen (2001) and Umi and Lisnawati (2022) used Academic Procrastination Scale and Centrality Religious Scale by Huber and Huber (2012). Another reason for the difference in the results of both studies might be because the present study involved University students who are engaged in full time studies for their degrees, while Umi and Lisnawati(2022) involved students studying for their degrees through a distance learning mode (on part time). This result is not also in consonant with the result of Elias et al. (2005) in their study religiosity had a negative correlation with procrastination. This means that students who are religious tend to procrastination less or score low in measures of procrastination.

The present study's finding is also not in consonant with some other studies that, found religiosity being positively correlated with academic procrastination (Trusty & Watts, 1999). The students who are religious had a better attitude towards school. Having a better attitude towards school suggest that, they procrastinate less often. The difference in their result and the result of this study might be the difference in the sample size in both studies. While Trusty and Watts (1999) sampled 13,000 high school students in their study, this study involved 250 undergraduates. The gap in the years the studies were carried out can also be a factor for the difference in results. Trusty and Watts (1999) carried out their study about two decades before the present study. Another study with a different result from the result of this study is that of Regnerus and Elder (2003), that involved 13,500 participants drawn from a nationwide sample, and concluded that youths who attend church activities often avoid engaging in behaviours that negatively affect schooling.

The present study, also, show a difference in academic procrastination of undergraduates at various levels of their university education. The result show that, first year undergraduate students engaged in procrastination more often than undergraduates from the sophomore year to the final year among the participants. This finding can be attributed to the tendency for first year undergraduates still trying to figure out how to navigate their way in a new academic setting quite different from what they were used to, during their secondary or high school days. This process might take quite some time, depending on how quick they are able to figure it out. This finding is in line with Stewart et al. (2016), who established that, the difference in scores of undergraduates at different levels can be attributed to first year undergraduates engaging in procrastination more often than undergraduates at higher levels. Also Abu Ghazal (2012) found a similar result with the present study. His study concluded that a difference existed in the percentage of procrastination as lower-level students especially, those in their first year of university education engaged more in procrastination than other levels of undergraduate studies among the participants. According to Haycock et al. (1998), younger undergraduates (those in lower levels of their university studies) are prone to procrastinate more than older students because they are yet to have adequate time to develop good study habits.

However, some other studies carried earlier, found a contrary result compared to this study. For instance, AlQudahet al. (2014) found no difference in the scores on academic procrastination among undergraduates at various levels. They established that undergraduates at different levels of levels of their degree programme reported the same level of procrastination. One possible explanation for this discrepancy in results may be attributed to any or all of the following; the different in the location of the studies, while theirs was conducted in Saudi-Arabia, among mostly Saudi students, this study was carried in a Nigerian university, and almost all the participants were Nigerians. The eight years gap between this research and their study could also cause a difference in the findings. Also, Ozer et al. (2009) found no difference in academic procrastination among undergraduate students at different levels. A possible explanation for this difference can be the gap in years both studies were conducted. The inconsistency of a generalized finding might

be due to situational reasons in terms of the time or period a study is conducted, the demographics of the participants and the culture in the institution and so on.

## 6. Conclusion

The study examined the correlation between religiosity and student's present level of undergraduate studies on academic procrastination in University of Lagos. According to the result of this study, there is no correlation between religiosity and academic procrastination among the participants. Also, the result demonstrated that, fresh men or first year undergraduates procrastinated more often than sophomore and other levels of undergraduates among the participants. Conclusively, the study found out that while religiosity had no influence on academic procrastination among the participants, fresh men or first year undergraduate students procrastinated more often than sophomore or other levels of undergraduate students in the study population.

## 7. Educational Implications

The study has number of obvious implications for university students, religious leaders, and school administrators, amongst others. It is evident from the study that the religiousness of participants had no influence on their behaviour of procrastination. This implies that religiosity does not influence academic procrastination, and as such religious institutions such as churches and mosques have to engage their student congregation more with ways that can help positive attitude towards their education. Furthermore, the findings that fresh men or first year undergraduate students procrastinated more often than sophomore or other levels of undergraduate students implies that this might lead to first year students losing track of their goal of attaining desired performance and in turn get distracted by other campus activities apart their academic pursue. This finding has implication for school counsellors who can assist fresh level undergraduate students on how to best get settled in their new environment, utilize, manage and organize their activity I the university better. Such intervention might help fresh undergraduates organize their time, combine their engagements within and outside the campus environment as students and be in control of their academics. This study also, bridges a gap in knowledge ascertaining the influence of the variables under study in the Nigeria especially and adds to research knowledge.

## 8. Recommendations

Schools' psychologists, counselors, should assist students in discovering their interest, empower them to take charge of their learning so as to accomplish and reach their full academic potential.

The study draws the attention school guidance and counsellors within colleges and universities to the importance identifying and recognizing the needs of students, especially fresh undergraduates, to time management and organization so as to fulfill their goals as students. This will go a long way in reducing the behavior of procrastination. First-year seminars have been shown to assist first year students to make the difficult transition from high school to tertiary institutions like a university. The researchers recommends that first year seminar instructors administer assessments to all first-year students on measures of procrastination to encourage and establish good study habits.

Although, this research did not confirm a correlation between religiosity and academic procrastination, religious leaders might be alerted by the finding of this study and pay attention to building the faith of their congregation. This might in turn help college and university students to imbibe positive academic behaviour including avoiding procrastination. Further research can be carried out to further explore these variables and other socio-demographic variables.

**Author contributions:** All authors have sufficiently contributed to the study, and agreed with the conclusions.



**Availability of the data:** The corresponding author can be contacted for additional information. The article and other resources include the original contributions to the study.

**Declaration of interest:** No conflict of interest is declared by author.

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## References

- Abu Ghazal, M. (2012). Academic procrastination: prevalence and causes from the point of view of undergraduate students. *Jordan Journal of Educational Sciences*, 8(2), 131-49.
- Ackerman, D. S., & Gross, B. L. (2005). My instructor made me do it: Task characteristics of procrastination. *Journal of Marketing Education*, 27(1), 5-13. <https://doi.org/10.1177/0273475304273842>
- Adkins, K. K., & Parker, W. (1996). Perfectionism and suicidal preoccupation. *Journal of personality*, 64(2), 529-543. <https://doi.org/10.1111/j.1467-6494.1996.tb00520.x>
- Ainslie, G. (2005). Précis of breakdown of will. *Behavioral and Brain Sciences*, 28(5), 635-650. <https://doi.org/10.1017/S0140525X05000117>
- Ajayi, L. A. (2007). *Issue in school management*. Bolabay Publications.
- Akin, A. (2012). Self-Handicapping and burnout. *Psychological Reports*, 110(1), 187-196. <https://doi.org/10.2466/01.02.14.PR0.110.1.187-196>
- AlQudah, M. F., AlSubhien, A. M., & AlHeilat, M. Q. (2014). The Relationship between the academic procrastination and self-efficacy among sample of King Saud University students. *Journal of Educational and Practice*, 5(16), 101-111.
- Balkis, M., & Duru, E. (2009). Prevalence of academic procrastination behaviour among pre-service teachers, and it's relationship with demographics and individual preferences. *Journal of Theory and Practice in Education*, 5(1), 18-32.
- Bridges, L. J., & Moore, K. A. (2002). *Religion and spirituality in childhood and adolescence*. Child Trends.
- Cerino, E. S. (2014). Relationships between academic motivation, self-efficacy, and academic procrastination. *Psi Chi Journal of Psychological Research*, 19(4), 156-163. <https://doi.org/10.24839/2164-8204.JN19.4.156>
- Critchfield, T. S., & Kollins, S. H. (2001). Temporal discounting: Basic research and the analysis of socially important behavior. *Journal of Applied Behavior Analysis*, 34(1), 101-122. <https://doi.org/10.1901/jaba.2001.34-101>
- Day, V., Mensink, D., & O'Sullivan, M. (2000). Patterns of academic procrastination. *Journal of College Reading and Learning*, 30, 120-134. <https://doi.org/10.1080/10790195.2000.10850090>
- Elias, N., Awang, A., & Mohamed, M. (2005). Examining religiosity and its relationship to self-control, procrastination and academic achievement. *Malaysian Journal of Learning and Instruction*, 1(2), 1-16.
- Ellis, A., & Knaus, W. (1977). *Overcoming procrastination*. Institute for Rational Living.
- Ferrari, J. R. (1995). Perfectionism Cognitions with non-clinical and clinical samples. *Journal of Social Behavior and Personality*, 10, 143-156.
- Ferrari, J. R. (1998). Procrastination. In H. Friedman (Ed.), *Encyclopedia of mental health* (Vol. 3, pp. 281-287). Academic Press.
- Ferrari, J. R., & Roster, C. A. (2018). Delaying disposing: Examining the relationship between procrastination and clutter across generations. *Current Psychology*, 37, 426-431. <https://doi.org/10.1007/s12144-017-9679-4>
- Gallagher, R. P., Golin, A. & Kelleher, K. (1992). The personal, career, and learning skills needs of college students. *Journal of College Student Development*, 33(4), 301-310.
- Haycock, L. A., McCarthy, P., & Skay, L. (1998). Procrastination in college students: The role of self-efficacy and anxiety. *Journal of Counseling and Development*, 76, 317-324. <https://doi.org/10.1002/j.1556-6676.1998.tb02548.x>
- Huber, S., & Huber, O. W. (2012). The centrality of religiosity scale (CRS). *Religions*, 3, 710-724. <https://doi.org/10.3390/rel3030710>
- Hussain, I. & Sultan, S. (2010). Analysis of procrastination among university students. *Procedia-Social and Behavioral Sciences*, 5, 1897-1904. <https://doi.org/10.1016/j.sbspro.2010.07.385>
- Idehen, E. E. (2001). The development and the evaluation of a religiosity scale. *Ife psychologia: An International Journal*, 9(2), 58-69. <https://doi.org/10.4314/ife.v9i2.23617>

- Katz, I., Eilat, K., & Nevo, N. (2014). "I'll do it later": Type of motivation, self-efficacy and homework procrastination. *Motivation and Emotion*, 38, 111-119. <https://doi.org/10.1007/s11031-013-9366-1>
- Klingsieck, K. B. (2013). Procrastination. *European Psychologist*, 18(1), 24-34. <https://doi.org/10.1027/1016-9040/a000138>
- Kroese, F.M., Evers, C., Adriaanse, M.A., & de Ridder, D. T. (2016). Bedtime procrastination: A self-regulation perspective on sleep insufficiency in the general population. *Journal of Health Psychology*, 21(5), 853-862. <https://doi.org/10.1177/1359105314540014>
- Lay, C. H. (1986). At last, my research article on procrastination. *Journal of Research in Personality*, 20, 474-495. [https://doi.org/10.1016/0092-6566\(86\)90127-3](https://doi.org/10.1016/0092-6566(86)90127-3)
- Lynch, J. G., & Zauberman, G. (2006). When do you want it? time, decisions, and public policy. *Journal of Public Policy & Marketing*, 25(1), 67-78. <https://doi.org/10.1509/jppm.25.1.67>
- Madjid, A., Sutoyo, D. A., & Shodiq, S. F. (2021). Academic procrastination among students: The influence of social support and resilience mediated by religious character. *Jurnal Cakrawala Pendidikan*, 40(1), 56-69. <https://doi.org/10.21831/cp.v40i1.34641>
- Merriam-Webster. (2023). *Merriam-Webster online English dictionary*. Author. <https://www.merriam-webster.com/>
- Milgram, A. N., Sroloff, B., & Rosenbaum, M. (1988). Procrastination of everyday life. *Journal of Research in Personality*, 22, 197-212. [https://doi.org/10.1016/0092-6566\(88\)90015-3](https://doi.org/10.1016/0092-6566(88)90015-3)
- Muller, C., & Ellison, C. G. (2001). Religious involvement, social capital, and adolescents' academic progress: evidence from the national education longitudinal study of 1988. *Sociological Focus*, 34(2), 155-183. <https://doi.org/10.1080/00380237.2001.10571189>
- Noran, F. Y. (2000). *Procrastination among students in institutes of higher learning: Challenges for K-Economy*. Mahdzan. <http://www.mahdzan.com>
- Norman, A. M., Barry, S., & Michael, R. (1988). The procrastination of everyday life. *Journal of Research in Personality*, 22(2), 197-212. [https://doi.org/10.1016/0092-6566\(88\)90015-3](https://doi.org/10.1016/0092-6566(88)90015-3)
- Odaci, H. (2011). Academic self-efficacy and academic procrastination as predictors of problematic internet use in university students. *Computers & Education*, 57(1), 1109-1113. <https://doi.org/10.1016/j.compedu.2011.01.005>
- Özer, B. U., Demir, A., & Ferrari, J. R. (2009). Exploring academic procrastination among Turkish students: Possible gender differences in prevalence and reasons. *The Journal of Social Psychology*, 149(2), 241-257. <https://doi.org/10.3200/SOCP.149.2.241-257>
- Rahimi, S., Hall, N. C., & Sticca, F. (2023). Understanding academic procrastination: A Longitudinal analysis of procrastination and emotions in undergraduate and graduate students. *Motivation and Emotion*, 47(4), 554-574. <https://doi.org/10.1007/s11031-023-10010-9>
- Regnerus, M. D. (2003). Linked lives, faith, and behavior: intergenerational religious influence on adolescent delinquency. *Journal for the Scientific Study of Religion*, 42(2), 189-203. <https://doi.org/10.1111/1468-5906.00172>
- Regnerus, M., Smith, C., & Fritsch, M. (2003). *Religion in the lives of american adolescents: a review of the literature* [research report]. NSYR.
- Roberts, M.S. (1995). *Living without procrastination: How to stop postponing your life*. New Harbinger Publications.
- Rothblum, E. D., Solomon L.J., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology*, 33(4), 387-394. <https://doi.org/10.1037/0022-0167.33.4.387>
- Saleem, T., Bashi, M., Amin, J., & Noor, R. (2016). Effect of procrastination on self-regulation among university students. *International Journal of Rehabilitation Science*, 5(2), 37-40.
- Schraw, G., Wadkins, T., & Olafson, L. (2007). Doing the things, we do: a grounded theory of academic procrastination. *Journal of Educational Psychology*, 99, 12-25. <http://dx.doi.org/10.1037/0022-0663.99.1.12>
- Schubert Walker, L. J., & Stewart, D. W. (2000). Overcoming the powerlessness of procrastination. *Guidance & Counseling*, 16(1), 39.
- Shafranske, E. P., & Malony, H. N. (1990). Clinical psychologists' religious and spiritual orientations and their practice of psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, 27(1), 72-78. <https://doi.org/10.1037/0033-3204.27.1.72>
- Shermer, M. (2003). *How we believe: Science, skepticism, and the search for God*. Freeman.
- Silberman, I. (2005). Religion as a meaning system: implications for the new millennium. *Journal of Social Issues*, 61, 641-663. <https://doi.org/10.1111/j.1540-4560.2005.00425.x>

- Sirois, F. M., & Pychyl, T. (2013). Procrastination and the priority of short term mood regulation: Consequences for future self. *Social and Personality Psychology Compass*, 7(2), 115-127. <https://doi.org/10.1111/spc3.12011>
- Smith, C., & Faris, R. (2002). *Religion and American adolescent delinquency, risk behaviors and constructive social activities* [Research report]. NSYR.
- Solomon, L. J., & Rothblum, E. (1984). Academic Procrastination: frequency and cognitive behavioral correlates. *Journal of Counseling Psychology*, 31, 503-509. <https://doi.org/10.1037/0022-0167.31.4.503>
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, 133(1), 65-94. <https://doi.org/10.1037/0033-2909.133.1.65>
- Steel, P., & Ferrari, J. (2013). Sex, education and procrastination: An epidemiological study of procrastinators' characteristics from a global sample. *European Journal of Personality*, 27(1), 51-58.
- Stewart, M., Stott, T., & Nuttall, A. M. (2016). Study goals and procrastination tendencies at different stages of the undergraduate degree. *Studies in Higher Education*, 41(11), 2028-2043. <https://doi.org/10.1080/03075079.2015.1005590>
- Thaler, R., & Sunstein, C. (2008). *Nudge: improving decisions about health, wealth and happiness*. Penguin Books.
- Trusty, J., & Watts, R. (1999). Relationship of high school Senior's religious perceptions a behavior to educational, career, and leisure variables. *Counselling and Values*, 44, 30-39. <https://doi.org/10.1002/j.2161-007X.1999.tb00150.x>
- Umi, F. A & Lisnawati, R. (2022). The role of self-regulatory learning, religiosity, and parental social support with student academic procrastination in distance learning. *Indigenous: Jurnal Ilmiah Psikologi*, 7(2), 176-188. <https://doi.org/10.23917/indigenous.v7i2.18087>
- Uzun Ozer, B., & Sackes, M. (2011). Effects of academic procrastination on college students' life satisfaction. *Procedia-Social and Behavioral Sciences*, 12, 512-519. <https://doi.org/10.1016/j.sbspro.2011.02.063>
- Zhang, R., Chen, Z., Xu, T., Zhang, L., & Feng, T. (2020). The overlapping region in right hippocampus accounting for the link between trait anxiety and procrastination. *Neuropsychologia*, 146, 107571. <https://doi.org/10.1016/j.neuropsychologia.2020.107571>