

GENDER DIFFERENCES IN TEST ANXIETY AMONG UNDERGRADUATES: A STUDY OF SELECTED PRIVATE UNIVERSITIES IN FCT ABUJA

Okoro Chukwuji Nnanna (Ph.D)

Okoro.chukwuji@bazeuniversity.edu.ng

Department of Psychology

Baze University Abuja

ABSTRACT

Academic achievement has been extensively studied, and several factors have been identified as crucial to academic success. This study aims to investigate gender differences in test anxiety among undergraduates in FCT Abuja. To accomplish this, this study enrolled 100 participants, 45 of whom were men and 55 of whom were women, from various universities in Abuja. These participants were chosen based on convenience sampling. Spielberger's Test Anxiety Instrument (1980) was used in this study. The study lasted for two weeks. Each school was visited for two (2) days. Participants were sought from various departments with the assistance of the lecturers. SPSS statistical software package version 20 was used to code, enter, clean, and analyse data. Gender differences in test anxiety were investigated using an independent sample t-test. An analysis was performed to determine gender differences in test anxiety among undergraduates. The study found a significant difference between the two groups ($t(198), 6.19, p < .001$), with females scoring higher. This result implies that male students experience more test anxiety than female students.

Keywords: Test Anxiety, Gender, Baze University Abuja, Nile University of Nigeria Abuja and Philomath University Abuja.

1. Introduction

Academic achievement has been extensively studied, revealing several factors critical to academic success. Research conducted by Alemu and Feyssa (2020), Bolbolian, Asgari, Sefidi, and Zadeh (2021), and Gidado and Ugockukwu (2024) shows that students are significantly affected by test anxiety. Many students experience some level of anxiety while preparing for exams. A moderate degree of stress can enhance memory, attention, motivation, and overall exam performance (Gidado & Ugockukwu, 2024). However, when anxiety levels exceed what is considered normal, they can become debilitating. Various models have been proposed to explain exam anxiety, which has frequently been linked to poor academic performance in studies (Alemu & Feyssa, 2020).

The development of effective anxiety management strategies has intrigued researchers. Low study habits and the overwhelming physiological effects of anxiety have been linked to poor academic performance (Gidado & Ugockukwu, 2024). Students at any academic level can struggle if they lack effective study skills (James, 2018). Treatment options range from improving study techniques to employing relaxation techniques. The goal of this study is to investigate how gender may moderate test anxiety among undergraduate students. Test anxiety is described as "a collection

of phenomenological, psychological, and behavioural responses associated with the fear of negative consequences or failure on a test or other evaluative circumstances". Sisbane (2019) defines test anxiety as "the response to stimuli associated with an individual's experience of testing or evaluative settings."

Bhat and Farooq (2017) identify two distinct components of test anxiety: the cognitive component, which involves worry, and the emotional component. Worry represents a mental state characterised by concern about one's performance on a test (Bhat & Farooq, 2017). Fears of failing an exam and self-statements about one's efficacy are two examples of worry components. Bhat and Farooq (2017) also point out that the distinction between worry and emotionality suggests that physiological responses serve as indicators of emotionality.

Gabriel and Buckley Barthakur (2020) note that other factors could influence test anxiety levels. Buckley and Sullivan (2023) used the Test Anxiety Inventory and the Student Profile Questionnaire to collect demographic and exploratory data on test anxiety scores from 690 Year 10 and 658 Year 11 students at seven secondary schools in the United Kingdom. Their study found that factors such as gender, ethnicity, and socioeconomic status significantly impacted variations in test anxiety scores. Additionally, poor study skills have been linked to exam anxiety.

Milovanovi (2020) examined the relationship between test anxiety and academic achievement in college students, focusing on whether students with high anxiety and those with low anxiety differed in their study habits. They investigated which study behaviours were more effective in each group using a sample of 65 students with high anxiety levels and 31 students with low anxiety levels based on their Test Anxiety Scale scores. The findings indicated that test anxiety was associated with poor academic performance and that students with high anxiety exhibited less effective study habits.

Rizwan and Nasir (2010) conducted a study with students enrolled in introductory psychology and English classes at American River College and Sacramento City College in California to explore the relationship between test anxiety, students' study behaviours, and variables such as age, gender, and ethnicity. Their results indicated that non-white students might require additional support in developing study habits and managing exam anxiety. They also suggested that younger male students may require more instruction on effective study techniques, whereas female students may benefit from more support in dealing with test anxiety. Finally, they noted a correlation between poor study skills and heightened exam anxiety. Abe and Gbenro (2024) investigated the impact of cognitive exam anxiety on test preparation performance and the phases involved in reflection.

High-anxiety students were shown to have poor study habits and less effective preparation. Another aspect that causes test anxiety is the testing environment. Buckley and Sullivan (2023) investigated the effects of changing test environments by administering midterm and final exams in two different settings: large lecture halls and small language labs, and discovered that

environmental and situational variables influence scores of students with high and low anxiety, obscuring their actual learning performance.

According to the learning deficit or preparation deficit model, a student's inadequate study habits during test preparation or poor test-taking abilities are key determinants of anxiety and poor test performance. According to this concept, poor academic performance in test-averse children is caused by two deficiencies: study skills deficits and test-taking deficits (Daniel, Daros, Beltzer, Boukhechba, Barnes, & Teachman, 2020). Daniel *et al.* (2020) propose the study skills theory, which claims that poor test performance is caused by "less comprehensive initial acquisition or storage of content due to insufficient study skills, rather than interference with retrieving previously learnt material."

Another argument suggests that students with poor study habits are well aware of their inadequate exam preparation and, as a result, have low expectations of success (Foley, Herts, Borgonovi, Guerriero, Levine, Beilock, 2017). Their low expectations for success, in turn, increase anxiety, resulting in poor performance.

Based on the studies reviewed above, it is clear that much research has been conducted in this area. However, it is insufficient because it does not investigate test anxiety and academic performance as they relate to gender, particularly among Nigerian students. Furthermore, the literature reviewed above shows that no studies of this nature have been conducted in Africa, particularly in Nigeria. As a result, this finding from Western countries has been applied to Africans. Therefore, the purpose of this study is to investigate gender differences in test anxiety and academic performance among Nigerian undergraduate students.

2. Methods

2.1 Research Design

The researchers used an expositional factorial research design to determine whether test anxiety in students differed by gender. Gender is the study's independent variable, while test anxiety is the study's dependent variable.

2.2 Participants

Four universities in Abuja were selected for the data collection. The study enrolled 100 participants, 45 of whom were male and 55 of whom were female, from Abuja's universities. These individuals were chosen based on convenience sampling. To accomplish this, participants were recruited at the university's entrance exams in various halls.

2.3 Instrument

Spielberger's Test Anxiety Instrument (1980) was employed in this investigation. The Spielberger (1980) test anxiety tool was used to assess anxiety during tests. The TAI consists of 20 items, and participants rate how frequently they experience the feelings expressed in each item using a four-point Likert scale. (1) 'nearly seldom', (2) 'occasionally', (3) 'frequently', and (4) 'practically always'

are the four response options. The scale contains both positively and negatively worded items. The worry component is measured by eight items, as is the emotionality component, with the remaining four items contributing to the TAI-T score. The current study calculated a reliability analysis for the test anxiety inventory, which found strong reliability as indicated by Cronbach's Alpha = 0.81

2.4 Procedure

This study took place at the universities in Abuja. The study lasted for two weeks. Each school was visited for two (2) days. Participants were sought from various departments with the assistance of the lecturers. Before the study, the researcher approached some lecturers and requested permission to administer TAI to their students before writing the test. They were informed that participation is entirely voluntary and that they may withdraw if they feel uncomfortable. The student was informed about the purpose of the study, and they took the test. Participants were not permitted to take the test home; it was collected once completed.

2.5 Data Analysis

The SPSS statistical software package version 20 was used to code, enter, clean, and analyse data. The gender differences in test anxiety were investigated using an independent sample t-test. The significance threshold was determined to be ($p < 0.05$).

3. Result

An analysis was conducted to determine gender differences in test anxiety among undergraduates. The result showed that there is a significant difference between the two groups, $t(198), 6.19, p < 0.001$. The table below explains the mean and the standard deviation.

Variables	Mean	SD	<i>t</i>	<i>p</i>
Females	90.36	30.44	6.19	.001
Males	78.01	16.082		

4.1 Discussion

This study aimed to determine whether test anxiety is more prevalent in males or females. The results indicated a significant difference between the two groups, showing that male students experience less exam anxiety than female students. This finding is consistent with the findings of Ballen, Gbolagade, Waheed, and Sangoniyi (2020), who discovered that test anxiety may negatively impact female students' performance by identifying factors that disrupt the process of information recall and utilisation during testing situations. The study found that female students reported higher stress levels than male students. Furthermore, female students exhibited higher levels of trait test anxiety and anxiety about statistics courses than their male peers. Despite having better time management skills than male students, female students reported higher levels of test anxiety.

However, like other studies, there are several limitations to consider. First, the lack of randomisation and experimental data means that this study cannot establish causation. Future research should investigate whether females, as opposed to males, experience test anxiety in performance situations and how this affects both performance and emotional responses. Moreover, employing data triangulation methods (such as observational data and mixed methods) could clarify some of the unexplained variations in the data. Additionally, this study's simplicity suggests that future research could expand on it by incorporating other motivating factors. Finally, the low response rate limited this study's ability to investigate how prior achievements affect test anxiety and science confidence. Furthermore, this study acknowledges that other unmeasured variables, such as cognitive differences, socioeconomic status, and personality traits, may have acted as mediators or predictors in our analysis.

4.2 Conclusion

In addition to the previously mentioned limitations, there are several other factors to consider when interpreting our findings. First, causation cannot be concluded due to insufficient experimental evidence. Future research should look into whether women, as opposed to men, experience test anxiety in performance situations and how this affects their performance and emotional responses. Additionally, employing data triangulation methods (such as observational data and mixed methods) may help account for some of the unexplained variance in the data. The low response rate regarding high school entry grades also limited our ability to assess how prior achievements impact test anxiety and confidence in science. Finally, other unmeasured variables such as cognitive differences, socioeconomic status, and personality traits may have served as mediators or predictors in our study.

References

- Abe TO, Gbenro SO. Effects of test anxiety on students' performance in mathematics in senior secondary schools in Ekiti State. *British J Multidiscipl Adv Stud Educ Learn Train Develop*. 2024;5(3):25–35.
- Alemu, B. M., & Feyssa, T. (2020). The Relationship between Test Anxiety and Academic Achievement of Grade Ten Students of Shirka Woreda, Oromia Regional State, Ethiopia. *African Educational Research Journal*, 8(3), 540-550.
- Bhat, S., & Farooq, K. T. (2017). The Relationship of Emotional Intelligence with Anxiety Among students. *International Journal of Trend in Scientific Research and Development*, (16), 1214-1217.
- Bolbolian, M., Asgari, S., Sefidi, F., & Zadeh, A. S. (2021). The relationship between Test Anxiety and Academic Procrastination among the Dental Students. *Journal of Education and Health Promotion*, 10(1), 1-6.
- Buckley S, Sullivan P. (2023). Reframing anxiety and uncertainty in the mathematics

- classroom. *Math Educ Res J.*; 35:157–170.
- D’Agostino, A., Schirripa Spagnolo, F. S., & Salvati, N. (2022). Studying the Relationship Between Anxiety and School Achievement: evidence from PISA data. *Statistical Methods and Applications*, 31(1), 1-20.
- Daniel KE, Daros AR, Beltzer ML, Boukhechba M, Barnes LE, Teachman BA. (2020). How Anxious are you right now? Using ecological momentary assessment to evaluate the effects of cognitive bias modification for social threat interpretations. *Cogn Ther Res.* 44:538–556.
- Foley AE, Herts JB, Borgonovi F, Guerriero S, Levine SC, Beilock SL. (2017). The maths Anxiety-performance link: a global phenomenon. *Curr Dir Psychol Sci.* 26:52–58.
- Gabriel F, Buckley S, Barthakur A. (2020). The impact of mathematics anxiety on self-regulated learning and mathematical literacy. *Aust J Educ.* 64(3):227–242.
- Gbolagade AM, Waheed AA, Sangoniyi SO. (2020). Demystifying mathematics phobia in schools for transforming Nigeria in attaining vision. *Int J Acad Res Bus Soc Sci.* 3(2):188.
- Gidado, B.K. & Ugockukwu, A.U. (2024). Relationship between Test Anxiety and Academic Achievement among Senior Secondary School Students in Federal Capital Territory, Abuja, Nigeria. *Journal of Research in Humanities and Social Science*, vol. 12(12), pp. 06–13.
- González-Saenz de Tejada, M., Bilbao, A., Baré, M., Briones, E., Sarasqueta, C., Quintana, J. M., & CARESS-CCR Group (2017). Association between social support, functional status, and change in health-related quality of life and changes in anxiety and depression in colorectal cancer patients. *Psycho-oncology.* 26(9):1263–1269.
- James, N. O. (2018). Test Anxiety Belief as Predictor of Students’ Achievement in Chemistry In public secondary schools in Kenya. *International Journal of Psychology and Behavioural Science*, 8(4): 70-76.
- Leder G. (2019). Gender and mathematics education: an overview. In: Kaiser G, Presmeg N, editors. Compendium for early career researchers in mathematics education. ICME-13 monographs. Berlin: *Springer*. pp. 289–308.
- Luigi, M., Francesca, D., Maria, D.S., Eleonora, P., Valentina, G.D. and Benedtto, V. (2020). The Role of Anxiety Symptoms in School Performance in a Community Sample of Children and Adolescents. *BMC Public Health* 7(347).
- Milovanovi I. (2020). Math anxiety, math achievement and math motivation in high school students: gender effects. *Croatian J Educ.* 22(1):175–206.
- Rizwan, A.R. & Nasir, M. (2010). The Relationship between Test Anxiety and Academic Achievement. *Bulleting of Education and Research*, 32 (2), 63-74.
- Sisbane, F. Z. (2019). Exam anxiety and its Relationship to Academic Achievement: a Descriptive Study for First Year Secondary School Students in Mostaganem. *Journal of Human Development*, 6(4), 9-21.