

# Behavioural and Psychological Functions of Test Anxiety Among Undergraduates in the University of Port Harcourt

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**Abstract:** *Correlational research design was adopted in the study with the aim of finding out behavioural and psychological functions of test anxiety among undergraduates in the University of Port Harcourt. The population for the study consisted of six hundred (600) undergraduate students from the twelve (12) faculties in University of Port Harcourt. Samples of 404 undergraduate students identified with test anxiety were drawn using the census sampling in the study. Two instruments were used in the study which included the “Behavioural and Psychological Variables Questionnaire (BPVQ) and the “Test Anxiety Scale” (TAS). Validity of the instruments were determined using two experts in measurement while Cronbach alpha ( $\alpha$ ) technique was used to determine the reliability indices of 0.70 and 0.77 for “BPVQ” and “TAS” respectively. Data analysis was done using simple regression. Findings showed that academic procrastination ( $p=0.003<0.05$ ), self-esteem ( $p=0.031<0.05$ ) and self-concept ( $p=0.000<0.05$ ), were all significantly related to test anxiety among students. Based on this, it was recommended among others that teachers should develop time management and organization skills training for the students and encourage them to break tasks into manageable chunks.*

**Keywords:** academic procrastination. self-esteem, self-concept, test, test anxiety.

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## INTRODUCTION

Nwankwo (2015) defines anxiety as an emotion, characterized by feelings of anticipated danger, tension and distress, and by arousal of the sympathetic nervous system. It is a disrupting, fear-mediated avoidance, out of proportion to the danger posed by a particular object or situation, and indeed recognized by the sufferer as groundless. Ramalingham (2006) stated that it is an emotional state arising in situations of worry, nervousness and manifested in expectation for unfavourable

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events as well as the physiological and psychological reaction to an expected danger, whether real or imagined.

According to Edom (2023), a test is an instrument which can be utilized in detecting some qualities, traits, characteristics, attributes, etc. possessed by a person, an object or a thing. Ekeh & Onyekuru, (2013) opined that a test is a type of examination that is given to an individual, or group with a view to obtaining their cognitive and non-cognitive traits. It is a standardized or teacher made type of examination, given to a group or individuals which could be qualitative or quantitative and which determine presence or absence of a particular capacity, knowledge, or skill (Ramalingham, 2006). Testing is undoubtedly the most measure for selection and classification of individuals in different setting (the school and non-school settings) (Iruloh, Ernest-Ehibudu & Echebe, 2009). Opara and Uwah (2017) maintained that a test has a way of evoking emotional responses from the testees and one of such is anxiety. Hence, anxiety that may emanate from the process of testing could be referred to as test anxiety.

Test anxiety could be defined as a psychological motivation, tension as well as and somatic symptoms, accompanied most often with anxiety, worry, fear of failure, as well as physiological imbalance that occur before or during test situations. It is a form of psychological impairment that creates fear in a test situations, irrespective of all preparations made to pass the examination. Cherry (2013) also viewed it as “a type of performance anxiety in situations where the pressure is on and a good performance counts. Olatoye (2009) opines that test anxiety is a state of uneasiness, worry or feelings of uncertainty about an impending or on-going evaluation programme. It is an experience which expresses itself in a candidate’s mind and behaviour in form of fear of failure, negative self-evaluation which might be related to previously established standard (by self or other institutions), self-blame for perceived shortcomings, social evaluation in relation to student’s estimate of how others are doing and negative prediction of what would be the outcome of a test (Olatoye, 2009).

Some of the behavioural manifestations of test anxiety among students include feeling of wanting to cry, shaky hands, leaving the test-taking hall in order not to take the test, feeling of anger or helpless etc. If this experience persists, it can constitute a serious problem that can affect academic performance and achievement of the individuals involved, they may worry and have negative self-perceptions and expectations, they may also engage in self-depreciating habits and attitude. They may have feelings of dread, low competence, feelings of inadequacy, self-condemnation, negative self-talks, frustration and lack of self-efficacy. Some may even experience low self-esteem, depression, anger, confusion, disorganization, feelings of hopelessness, panic attacks which may interfere with their response to test questions, thereby negatively affecting their performance and achievement. Spilberger & Vagg (1995) identified two types of anxiety states which impede academic performance.

Oba (2022) argued that people can become so anxious before or during a test that they are actually unable to do their best. The severity of test anxiety can vary considerably from one person to

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another. Prime, Muhammad, Ahmad, Tutut and Suriya (2010) asserts that everyone requires some level of anxiety to perform well or be alert. But when it becomes too much, it can yield a negative result. Blanding, Silverstein, Takahashi and McCann (2005) conducted a study on “the effect of test anxiety on the academic performance of graduate and undergraduate student” from different universities in the UK, the study revealed a small inverse association between test anxiety and grade point average in both groups. In the same vein, Rana and Mahmood (2010) investigated on “relationship between test anxiety and academic achievement of students at the post graduate level in the public sector in University of Lahore Pakistan”. There was however a significant negative relationship that exist between test anxiety scores and that of students achievement scores. In view of the above works, it is possible that the academic performance of students in Rivers state may be influenced by test anxiety. Prime, Muhammad, Ahmad, Tutut and Suriya (2010) further stated that there are a lot of factors that can increase or decrease the level of test anxiety among students. While some of these factors may be psychological in natures, others are believed to be behavioural a habit.

Noran (2000) defines the term procrastination as avoiding doing a task which needs to be accomplished. Ellis and Knaus (2002) perceive procrastination as the desire to avoid an activity, the promise to get it late, and the use of excuse making to justify the delay and avoid blame. To Devlin (2002), it is an acts of needlessly delaying a task until the point of some discomfort while Ferrari (2018) stated that it is a habitual or intentional delay of starting or finishing a task despite knowing it might have negative consequences. In the view of the researchers, this concept is seen as an act of deliberately avoiding or postponing a task that one person has competence to accomplish. Popoola (2005) describes the procrastinator as someone who knows what he wants to do in some sense, can do it, is trying to do it, yet doesn't do it. Noran (2000) considers a procrastinator as someone who knows what he want to do, is equipped to perform the task, is trying and planning to perform the task, but does not complete the task, or excessively delays performing the task.

The issue of procrastination as seen by Pajares (2002) is not something to toy with in academics but something to deal with. This is because procrastination as a behaviour is a common phenomenon among students particularly at the university levels. This, as recognized is doing more harms than good to the academic achievement of the Undergraduate Students. It is worthy to note that the lives of University students are characterized by frequent deadlines given by university lecturers and administrators to carry out various responsibilities such as registration for courses, completion of course forms and submission of class assignments or term papers. Common form of academic procrastination among students is waiting until the last minute to turn in papers or to study for an examination. It is observed that University students are notorious for procrastination. Procrastination is a behavioural problem that many adults experience on a daily regular basis particularly on task which should be completed by a specific deadline (Oweini & Harraty, 2001). In fact, test anxiety can impair learning motivation and lead to procrastination (Pekrun, 2006). Test anxiety is often accompanied by academic procrastination (Van Eerde, 2003)- the voluntary delay of important and intended actions or decisions against one's better knowledge and despite the

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expected negative consequences of the delay and subjective discomfort (e.g., Ferrari et al., 2005). Test anxious students experience increased states of unpleasant physical arousal as well as aggravating worry thoughts (Pekrun, 2006). As a consequence, test anxious students often feel the desire to withdraw from the situation (Matthews et al., 1999). Accordingly, meta-analytical studies find a moderate positive association between test anxiety and procrastination (Steel, 2007) – students experiencing higher test anxiety also report higher levels of procrastination. However, these results stem from correlational studies, in which test anxiety and procrastination were only measured at single points in time. From a longitudinal perspective (i.e., over the course of an academic term), the causal interplay between test anxiety and procrastination might be more complex (Pekrun et al., 2007). In a similar study that was carried out by Krispenz, Gort, Schültke and Dickhäuser (2019), it was revealed that there is a significant relationship between procrastination and test anxiety and its components.

Self-esteem has evolved significantly over the years. According to Smith and Mackie (2007), self-esteem is the positive or negative evaluation of the self as in how one feels about it. It is an attractive psychological constructs that predicts certain outcomes. Early psychological theories by William James and later by Carl Rogers emphasized the importance of self-esteem in personal development and functioning. Miller and Moran (2012) introduced the idea of self-esteem as a ratio of our successes to our pretensions, while Rogers highlighted its role in achieving self-actualization. Moore (2014) stated that high self-esteem is generally associated with positive outcomes, including better mental health, higher levels of happiness, and more effective coping strategies. Conversely, low self-esteem is linked to negative outcomes such as depression, anxiety, and social withdrawal, which are often precursors to shyness. In a study carried out by Sarı, Bilek and Çelik (2018) who aimed to determine the level of test anxiety and self-esteem in the high school students preparing for the university exam in Bitlis, Turkey, and to investigate the effect of test anxiety on self-esteem. The finding from the study was that gender is influential on test anxiety and more importantly, self-esteem score and test anxiety level were found to be negatively correlated.

McCormack (2021) stated that one of the internal pressures that harm emerging adult's academic outcomes is the struggle with self-esteem. To identify methods of improving one's self-esteem and how that affects test performance, researchers tested the effect of beautifying one's appearance. Palumbo et al. (2017) also studied the whether wearing makeup affects a female college freshman's test performance. The researchers collected three groups that reported on their self-confidence before and after one group applied makeup, one group colored, and one group listened to positive music. Then, the groups took the same exam on the material they all studied prior. The researchers found that participants had elevated self-esteem after applying makeup which led to higher test scores on an exam than participants without makeup. The researchers also found that two-thirds of the groups reported an elevated mood after listening to music and applying makeup. From this research, conclusions can be drawn that positive mood and self-confidence, which can come from beautifying one's physical features, has a positive effect on exam performance.

McCormack (2021) also noted that low self-esteem, however, is not the only internal pressure at play when it comes to poor academic outcomes in young students (McCormack, 2021). In addition, researchers have found that the presence of test anxiety can be linked with low academic performance. A study conducted by Kestenbaum and Weiner (1970) investigated whether exam scores were influenced by academic motivation or testing anxiety. The study consisted of seventh and eighth graders who were measured on their test anxiety and attitudes surrounding achievement via self-report measures. The participants then took a standardized reading test, and their results were compared. The results revealed that among young adolescents, those with high test anxiety performed worse on the test than their fellow peers. The researchers also found that those with high achievement motivation performed higher on that same exam. These findings reveal that anxious test-takers score worse on tests, which leads to overall low academic performance.

Iroegbu (2013) stated that another factor that predisposes individuals to negative or positive academic performance is the perception of one's self concept. Rhonda (1991) observed that the study of self-concept is vital in the field of psychology and is widely accepted as a desirable educational goal which is frequently posited as a mediating variable that facilitates the attainment of other desired outcomes such as academic achievement. Burns in Iroegbu (2013) pointed out that self-concept is a composite image of what we think, we are, what we think, we can achieve, what we think others think of us, and what we would like to be. In line with the foregoing, Olowu (1990) held the view that self-concept is the system of perceptions which the organism formulates of the self in awareness of its distractive existence. Students who scored low on a measure of self-concept saw themselves as less competent and also learned to read with greater difficulty than other children (Iroegbu, 1990). Irwin (1999) summarized his research findings by stating that positive self-concept is not only more important than studying, but that it is a central fact when considering optimal academic performance. Likewise, Brookover et al. (1997) demonstrated that a positive significant correlation between self-concept and Test anxiety and consequently, academic performance existed, even when intelligence score were controlled. A successful student sees himself in essentially positive ways. Also, Multon et al. (2007) found out that self-concept beliefs are related to academic performance and account for approximately 14% of the variance in student's academic performance. Similarly, in a study involving post-graduate students, Lane and Lane (2001) reported that self-concept to cope with the intellectual demands of the programme predicted 11.5% of the variance in performance in a complex task

The result from the analysis of Iroegbu (2013) on self-concept showed that individuals with high self-concept have limited test anxiety and as such performed better than those with low self-concept. This result is in line with the findings of Irwin (1999) who stated that positive self-concept is a central fact when considering optimal academic performance. In addition, this finding is also supported by the findings of Brookover et al. (1997) who demonstrated that a positive significant correlation between self-concept and academic performance exists, even when intelligence scores

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are controlled. Thus, the way one sees himself is very critical to how he approaches his work, his determination and the energy that goes into his impetus to succeed.

In the light of this, the aim of the study was to behavioural and psychological functions of test anxiety among undergraduates in the University of Port Harcourt. Specifically, the study intended to;

1. Find out the relationship between Academic Procrastination and test anxiety among undergraduates in the University of Port Harcourt.
2. Find out the relationship between self-Esteem and test anxiety among undergraduates in the University of Port Harcourt.
3. Find out the relationship between Self-Concept and test anxiety among undergraduates in the University of Port Harcourt.

The following research questions were also asked in the course of the study;

1. What is the relationship and extent to which academic procrastination relate with test anxiety among undergraduates in the University of Port Harcourt?
2. What is the relation and extent to which self-esteem relates with test anxiety among undergraduates in the University of Port Harcourt.
3. What is the relationship and extent to which self-concept relates with test anxiety among undergraduates in the University of Port Harcourt.

The following hypotheses were formulated to guide the researchers;

1. There is no significant relationship between academic procrastination and test anxiety among undergraduates in the University of Port Harcourt.
2. Self-esteem has no significant relationship with test anxiety among undergraduates in the University of Port Harcourt.
3. Self-concept has no significant relationship with test anxiety among undergraduates in the University of Port Harcourt.

## **MATERIALS AND METHODS**

The study adopted the correlational research design. The design was adopted because the researchers investigated the magnitude and direction of relationship existing between academic procrastination, self-esteem as well as self-concept and test anxiety among undergraduate students in University of Port Harcourt. The population for the study consisted of six hundred (600) undergraduate students from the twelve (12) faculties in University of Port Harcourt. The researcher administered fifty questionnaire per faculty amounting to six hundred (600) instruments in all. These faculties were Faculty of Education, Engineering, Sciences, humanities, social sciences, management, agriculture, Pharmacy, Law, College of Health sciences, Basic Medical

Publication of the European Centre for Research Training and Development-UK science, Dentistry as well as clinical sciences. A sample of 404 undergraduate students identified with test anxiety were drawn using the census sampling in the study.

Two instruments were used in the study which included the Behavioural and Psychological Variables Questionnaire (BPVQ) as well as the Test Anxiety Scale (TAS). The Behavioural and Psychological Variables Questionnaire (BPVQ) is a non-cognitive and non-standardized instrument which was developed by the researchers to assess or measure the level of academic procrastination, self-esteem as well as self-concept level among students. It is designed using the 4-point Likert scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD). The instrument contained three sub-sections (I, II and III) with each consisting of ten (10) items measuring academic procrastination, self-esteem as well as self-concept respectively. Similarly, the "Test Anxiety Scale" (TAS) is also a non-cognitive questionnaire adapted by the researcher. The instrument was also designed using the -point Likert scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD) with a total of twenty (20) items. Validity of the instruments was determined using two experts in measurement as the instruments were given them to assess the suitability and construct validity. Cronbach alpha ( $\alpha$ ) technique was used to determine the reliability of the instruments with reliability indices of 0.70 and 0.77 for Behavioural and Psychological Variables Questionnaire (BPVQ) as well as the Test Anxiety Scale (TAS) respectively. Data analysis was done using simple regression.

## RESULT

**Research Question One:** What is the relationship and extent to which academic procrastination relate with test anxiety among undergraduates in the University of Port Harcourt?

**Hypothesis One:** There is no significant relationship between academic procrastination and test anxiety among undergraduates in the University of Port Harcourt.

**Table 1** shows simple linear regression analysis of relationship between academic procrastination and test anxiety among undergraduates in the University of Port Harcourt.

Model	R	R Square	Adjusted R Square			
	.350	.1225	.121			
Model	Sum of Sq.	Df	Mean Sq.	F	Sig.	Result
Regression	274.366	1	274.336	13.654	.003	Significant
Residual	14864.819	402	75.075			
Total	15139.155	403				

The result displayed above shows that calculated R is 0.350. The  $R^2$  value is 0.122 while the adjusted R value is 0.121. The R value shows that there is a positive relationship between academic procrastination and test anxiety meaning that as students procrastinates more, there will be a

Publication of the European Centre for Research Training and Development-UK corresponding increase in the level of test anxiety. The  $R^2$  value indicates that academic procrastination accounts for 12.2% ( $0.350 \times 100$ ) of the total contribution to students' test anxiety. In testing the hypothesis, the associated ANOVA revealed Calculated F value of 13.654 while the Sig value is 0.003. Hence, since the sig value ( $p=0.003 < 0.05$ ) is less than the alpha value of 0.05, the null hypothesis is rejected meaning that there is a significant relationship between academic procrastination and test anxiety among undergraduates in the University of Port Harcourt.

**Research Question One:** What is the relation and extent to which self-esteem relates with test anxiety among undergraduates in the University of Port Harcourt?

**Hypothesis One:** Self-esteem has no significant relationship with test anxiety among undergraduates in the University of Port Harcourt.

**Table 2** shows simple linear regression analysis of relationship between self-esteem and test anxiety among undergraduates in the University of Port Harcourt.

Model	R	R Square	Adjusted R Square			
	.272	.073	.072			
Model	Sum of Sq.	Df	Mean Sq.	F	Sig.	Result
Regression	244.566	1	244.566	11.424	.031	Significant
Residual	15224.819	402	69.335			
Total	148339.155	403				

Table two showed that calculated R is 0.272. The  $R^2$  value is 0.073 while the adjusted R value is 0.072. This means that self-esteem has a significant relationship with test anxiety among undergraduates in the University of Port Harcourt. The  $R^2$  value indicates that self-esteem accounts for 7.3% ( $0.73 \times 100$ ) of the total contribution to students' test anxiety. In testing the hypothesis, the associated ANOVA revealed Calculated F value of 11.424 while the Sig value is 0.031. Hence, since the sig value ( $p=0.031 < 0.05$ ) is less than the alpha value of 0.05, the null hypothesis is rejected meaning that there is a significant relationship between academic procrastination and test anxiety among undergraduates in the University of Port Harcourt.

**Research Question Three:** What is the relationship and extent to which self-concept relates with test anxiety among undergraduates in the University of Port Harcourt?

**Hypothesis Three:** self-concept has no significant relationship with test anxiety among undergraduates in the University of Port Harcourt.



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**Table 3** shows simple linear regression analysis of relationship between self-concept and test anxiety among undergraduates in the University of Port Harcourt.

Model	R	R Square	Adjusted R Square			
	.722	.521	.519			
Model	Sum of Sq.	Df	Mean Sq.	F	Sig.	Result
Regression	294.52	1	294.52	18.924	.000	Significant
Residual	18114.819	402	55.115			
Total	178355.155	403				

Table 3 above revealed a calculated R of 0.722. The  $R^2$  value is 0.521 while the adjusted R value is 0.519. This value indicates that self-concept has a significant relationship with test anxiety among undergraduates in the University of Port Harcourt. The  $R^2$  value indicates that self-concept accounts for 52.1% ( $0.521 \times 100$ ) of the total contribution to students' test anxiety. In testing the hypothesis, the associated ANOVA revealed a calculated F value of 18.924 with a sig value of 0.000. Hence, since the sig value ( $p=0.000 < 0.05$ ) is less than the alpha value of 0.05, the null hypothesis is rejected meaning that there is a significant relationship between self-concept and test anxiety among undergraduates in the University of Port Harcourt.

## DISCUSSIONS

Finding one had revealed that there is a significant relationship between academic procrastination and test anxiety among students. The finding a significant relationship between academic procrastination and test anxiety among students means students who procrastinate more tend to experience higher levels of test anxiety. Conversely, students with higher test anxiety tend to procrastinate more. The findings had also showed a positive relationship meaning that as students procrastinate, there will be a significant increase in their level of test anxiety. other implication is that procrastination may exacerbate test anxiety, creating a vicious cycle. It could also be that test anxiety may lead students to procrastinate as a coping mechanism. This finding may come because majority of the respondents are aware that procrastination leads to inadequate preparation, increasing test anxiety. the findings of the study is not surprising to the researchers because other researcher like Sari, Bilek et' al (2018) as well as McComarck (2021) had all reported significant relationship between procrastination and academic failure or underperformance.

From research finding two, it is recommended found that there is a significant relationship between self-esteem and test anxiety among students. The findings means that students with lower self-esteem tend to experience higher levels of test anxiety. Conversely, students with higher self-esteem tend to experience lower levels of test anxiety. What this further means is that self-esteem influences test anxiety, potentially affecting academic performance and that test anxiety can further erode self-esteem, creating a vicious cycle and as a result, proper enhancing of self-esteem may

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help alleviate test anxiety. The result also implies that low self-esteem leads to increased self-doubt, exacerbating test anxiety. The findings of the study is not surprising in any way to the researchers because they are aware that the way an individual carries himself can either increase or reduce their level of anxiety. Again reports like those of Palumbo (1997) and Kestenbaum and Weiner (1970) submitted earlier are in agreement with the current findings

Findings three showed that there is a significant relationship between self-concept and test anxiety among students. This means that the correlation coefficient is statistically significant. This indicates that the relationship between self-concept and test anxiety is unlikely to occur by chance. The finding also means that students with a positive self-concept tend to experience lower levels of test anxiety. Invariably, those with a negative self-concept tend to experience higher levels of test anxiety. This also means that self-concept influences test anxiety, potentially affecting academic performance. Possible explanation to thus finding could be that positive self-concept buffers against test anxiety by promoting confidence and negative self-concept exacerbates test anxiety through self-doubt. The finding of the study is not also surprising to the researchers because earlier findings like that of Ireogbu (2013) and that of Lane and Lane (2000) who reported significant relationship between self-concept and test difficulties among students.

## **CONCLUSION**

From the study test anxiety is strongly linked to students' psychological and emotional well-being. Educators can try to address the problems of testing by looking at the students attitudinal, behavioural or psychological changes.

## **Recommendations**

1. From the finding that there is a relationship between academic Procrastination and test anxiety, it is recommended that teachers should develop time management and organization skills training for the students and encourage them to break tasks into manageable chunks.
2. From finding two, parents, teachers and significant others should implement self-esteem enhancement programs that can foster positive classroom environments.
3. From finding three, teachers should also develop self-concept enhancement programs, foster autonomy, self-efficacy, and self-awareness, encourage self-reflection and goal-setting and finally, provide personalized support and feedback.

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