

DEMOGRAPHIC VARIABLES AND STATISTICAL ANXIETY AMONG POSTGRADUATE STUDENTS IN UNIVERSITIES IN SOUTH EAST NIGERIA

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Abstracts: The study was conducted to examine demographic variables and statistical anxiety among post graduate students in universities in South East Nigeria Three research questions and hypotheses were formulated to guide the study. The study utilized the descriptive survey design with a population of 29, 875 year three students in four universities in south East, Nigeria (2 Federal and 2 State Universities). The sample comprised 1,793 year three students representing 2% of the population of year three students in the chosen universities in South-East Nigeria as obtained from the field study 2017. The instrument for data collection was an adapted instrument titled “Statistics Anxiety Assessment Questionnaire” (SAAQ) developed by Donncha, Mark and Martin (2001) which comprised of two sections A and B. Section-A comprises demographic data e.g. gender, age and academic discipline. Section B, was a 30 items scale on statistics anxiety on the following dimensions worth of statistics, fear of asking for help, computation self-concept anxiety and overall statistical anxiety. Respondent were required to indicate their level of agreement/disagreement under various responses (Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD)). The validity of the instrument was established by experts in Measurement and Evaluation and Educational Psychology and the reliability of the research instrument was established with Cronbach Alpha reliability analysis and the index ranged from 0.77 to 0.97. The stated research questions were answered using mean and standard deviation, while the stated hypotheses were tested using independent t-test and One-way ANOVA at .05 alpha level. The findings revealed that there is a significant influence of gender on statistics anxiety, there was no significant influence of age on statistical anxiety. Also, academic discipline has a significant influence on statistical anxiety. It was recommended among others that

Keywords: Demographic, Variables, Statistical Anxiety, Postgraduate Students, Universities, South-East.

1. INTRODUCTION

Education is the basis for economic, social and political development every society needs in this global era where virtually every sphere of life is becoming too challenging. Obviously, the world has become globalised and so, for one to complete efficiently there is the need for quality education. Countries with high level of technological advancement are educationally competitive and globally recognised. In facing challenges and opportunities, decision making is very critical and such decision making skills are based on previous experiences or past data. The study of statistics trains the mind to look, analyze and draw valid conclusions from data. Accordingly, the study of statistics helps one not only in his/her academic work but in business decisions in organizations and more importantly in our day-to-day mundane activities. Most students feel that the need for statistical knowledge is just a waste of time due to its quantitative nature. Statistics

anxiety has been conceptualized as a multidimensional construct consisting of three factors: examination anxiety, asking for help anxiety, and interpretation anxiety (Vigil-Colet, Lorenzo-Seva & Condon, 2008). Examination anxiety deals with the anxiety involved when taking a statistics examination. Asking for help anxiety refers to the anxiety experienced when seeking help from others. Interpretation anxiety refers to the feelings of anxiety encountered when interpreting statistical data.

According to Cruise, Cash and Bolton in Chew and Dillon (2013) in Eyong (2016), statistics anxiety is also conceptualized as a multidimensional construct consisting of six factors: (a) Interpretation Anxiety, (b) Test and Class Anxiety, (c) Fear of Asking for Help, (d) Worth of Statistics, (e) Computation Self-Concept, and (f) Fear of Statistics Teachers. Interpretation Anxiety refers to the feelings of anxiety encountered when interpreting statistical data. Test and Class Anxiety deals with the anxiety involved when attending a statistics class or when taking a statistics test. Fear of Asking for Help assesses the anxiety experienced when seeking help. Worth of Statistics relates to an individual's perception of the relevance of statistics to the individual. Computation Self-Concept relates to an individual's self-perception of his or her ability to understand and calculate statistics. Lastly, Fear of Statistics Teachers refers to an individual's perception of the statistics teacher. Therefore, statistics anxiety is considered a debilitating phenomenon due to its effects on statistics achievement. This study considered three levels (worth of statistics anxiety, computation self-concept anxiety, fear of statistics teacher anxiety) and also the overall of these levels as it strong influence students demographic variables.

However, statistics anxiety basically is rooted in some type of phobia such as fear of failure, lack of self-confidence, fear of blanking out in a test, poor time management or study habits, lack of organization, and concern over how test results will have an impact on their future plans. Therefore, the corollary of this is that, some level of anxiety is needed to enable statistics students avoid some thoughts of failure in examination. Often, extreme anxiety is detrimental to performance in statistics. Therefore, considering the effects of anxiety on students' performance in statistics as highlighted in this background, there is necessity to assess the extent of statistics anxiety amongst undergraduate students and whether the extent is influenced by factors such as; gender, age, academic discipline of students towards statistics and prior-mathematics experience of the students.

Gender as a demographic factor has been implicated as having significant influence on undergraduate students' statistics anxiety. Gender is certainly one of the most widely investigated antecedents of statistics anxiety. In several studies, females reported higher levels of statistics anxiety than males. Other studies found no relationship between gender and statistics anxiety.

Onwuegbuzie and Wilson (2003) carried a study to examine whether the student characteristics of gender were related to statistics anxiety in South Africa. The study adopted the survey design and three hypotheses were stated and tested in the study using the Statistical Anxiety Ratings Scale (STARS; Cruise & Wilkins, 1980), with a sample population of 226 undergraduate students in the study area. The study utilized a Statistical Anxiety Scale (SAS) developed by the researchers for data collection. The study found that statistics anxiety was high among all 226 South African technical college students sampled, but not high at the same level for all the students. A limitation of the study was that it did not include a diverse ethnic sample. Males were more likely to use procrastination as a strategy, and were also more likely to have statistics anxiety related to test and class anxiety, interpretation anxiety, and asking for statistics help. Females used many other strategies to learn and these other strategies were related to lower statistics anxiety.

Oladipo and Ogungbamila (2013) conducted a study on gender differences and statistical anxiety among postgraduate students in tertiary institutions in Oyo state. The study answered four research questions and hypotheses with ex-post facto research design a sample of 435 respondents from a population of 5,788 post graduate student in the population. The findings revealed that female students experience higher levels of test anxiety than do males irrespective of cultural background. The conclusion drawn from their findings was that a major causal factor involved in the gender-related differences in statistics anxiety among students was a greater role expectation conflict among females than among males. In same vein, they found that females were more prone to experience high level of statistics anxiety than their male counterparts and are more likely to learn to surrender passively to statistics anxiety than the males. Similarly, El-Zahhar and Hocevar in Oladipo and Ogungbamila (2013) also examined gender difference on statistics anxiety among students in Brazil, Egypt, and the United States. The study found that statistics anxiety in all three cultures was higher among female students than among male students. Despite these studies, there seems to be a dearth of local research in respect of gender and anxiety particularly among undergraduates in Nigeria.

Oladipo and Ogunbamila (2013) study on the influence of gender on statistical anxiety among graduate students in Ilorin using Cross Sectional research design and data collected from 281 undergraduate students as sample size through simple random sampling (ballot system) constituting 182 (64.8%) males and 99 (35.2%) females between the age range of 16-30, mean age of 21.88 and standard deviation of 2.637 respectively. The instrument used for data collection had 0.85 Alpha reliability. Data were analyzed using SPSS-19 software and hypothesis tested with Pearson Moment Correlation. Their result indicated that gender does not have any significant relationship (positive or negative) with his or her level of statistics anxiety. In other words, the null hypothesis was rejected in favour of the alternative hypothesis.

Age is one of the variables which is of great interest to this study because many studies have been conducted to investigate its effects on students' achievement and statistics anxiety and has shown that the correlation between age and school achievement in statistics diminishes as students become older, schools provide equalizing experiences and thus the longer the students study in the schooling process, the more the impact of the age on students' achievement is diminished. In addition, as the students move up the age, more students drop out of school, thus reducing the magnitude of the correlation. Also there was evidence that older students fared better academically than the younger ones.

Tabachnick and Fidell (2007) carried a study on coping skills on the basis of age variation of post graduate students statistical anxiety in Boston. Two hypotheses were tested and the study adopted the descriptive research design. The authors gave the students a questionnaire designed to measure their coping skills on the basis of age and their statistics anxiety. The students were then randomly assigned to two testing conditions: timed (90 minutes) and untimed. The findings revealed that there was no relationship between age and statistical anxiety ($r = 0.29, p > 0.05$). The study also found that students with greater skills of both types tend to have lower levels of test anxiety. Further, the data indicate that study coping skills were not significantly related to the anxiety dimensions of worth of statistics ($r = -0.48, p > 0.05$) and fear of asking for help was not significant ($r = -0.43, p > 0.05$), while computation self-concept was not significant ($r = -0.49, p > 0.05$).

In another recent study with a focus on achievement, Koerner and Dugas (2006) conducted a study on the relationship between achievement goals based on age and students' achievement in statistics courses may be moderated by statistics anxiety and self-efficacy. A sample of 323 Iranian students was given a test instrument for each of six types of statistics anxiety (see the description of the STARS instrument in section 3.2); further, the students were administered a test instrument on statistics self-efficacy and on three types of achievement goals. End-of-course grades served as the achievement variable. Path analysis showed that both avoidance-performance ($r = 0.30, p > 0.05$) and approach-performance goals ($r = 0.15, p > 0.05$) were not significantly related to statistics anxiety.

Also, Ladouceur, Gosselin and Dugas (2000) Age on statistical anxiety of graduate students, the study adopted the correlational design with a sample of 130 graduate students to develop a model for predicting statistics students' outcomes based upon the cognitive variables of study habits and expectation for success, the affective variables of statistics anxiety and research anxiety, and personal variables of course load and previous mathematics classes. Through path analysis, Onwuegbuzie found a direct negative effect of age on statistics anxiety on achievement ($r = -0.18, p < 0.05$), with a direct positive effect of expectation on achievement ($r = 0.19, p < 0.05$). The author explains this complicated finding as the student's initial expectation for success, which leads to higher anxiety, which then leads the student to have a reduced level of expectation for success. The author reports that statistics anxiety and expectation were also found to mediate the relationship between the cognitive and personal variables studied and achievement on the basis of age. According to these results, students' expectation for success in statistics class can enhance their achievement, but may also have a detrimental effect due to the accompanying increase in anxiety, while anxiety itself impedes achievement.

Lesser and Pearl (2008) conducted a study on age and statistical reason among graduate students involving 487 undergraduate students, wherein they aimed to model the effects of age toward statistics, mathematical ability, and statistics anxiety on student achievement. The authors found that mathematical ability had a direct negative effect on anxiety ($r = -0.18, p < 0.01$) and a direct positive effect on age on achievement ($r = 0.71, p < 0.01$). They also found a direct negative effect of anxiety on end-of-course attitude ($r = -0.38, p < 0.01$), which had a direct positive effect on achievement ($r = 0.21, p < 0.01$). These results indicate that lower anxiety is associated with better end-of-course age toward statistics, and with better achievement outcomes. As evidenced by this sample of studies, considerable literature over the years concerning statistics anxiety have revolved around factors such as academic outcomes, study habits, and instructional variables. Additionally, correlations between the variables and canonical variates were all significant,

indicating that both components of hope were significantly related to all six types of statistics anxiety. Therefore, the author concluded that students who have lower levels of hope also experience higher levels of statistics anxiety.

Academic discipline refers to the department or the area of study of the student statistical anxiety can affect students' performance in statistics classes, and cause feelings of inadequacy and low self-efficacy for statistics-related activities. Statistics anxiety has been linked to students' performance in statistics and research courses, and has been recognized as a deterrent to students' finishing their degree. It has also be linked to area of discipline of the student in question as it is found that it is more prevalent among non-science students than science background students (Williams, 2010). This implies that students from management sciences, social sciences, arts, education and agricultural sciences may display more statistics anxiety as compared to students from sciences, medical sciences and engineering. This may not be true anyway but the findings from this study would show the difference.

Healy (2009) conducted a study on the topic the influence of students' academic discipline and statistics anxiety in Mozambique. Two hypotheses were stated and tested at 0.05 level of significance. The study utilized ex-post facto research design. Simple and systematic random sampling techniques were used in the study. The population for the study was 220 undergraduate students from science discipline and 112 undergraduate students in the department of education. Data was collected with a standadised instrument entitled statistical anxiety scale (SAS). The method of data analysis adopted was Spearman Rank Order correlation analysis. The study found that students discipline has a significant relationship on their statistical anxiety. The study also found that both students in science and education display the same level of statistical anxiety.

Habibollah, Abdullahi, Arizan, SharirandKurma, (2009) investigates the influence of academic discipline on statistical anxiety among Mathematic undergraduate students in United State. Three hypotheses were tested at 0.05 and the study adopted the quasi experimental design with a sample of 345 undergraduate students in three disciplines (science, education and social science). Data was collected with the use of observational and interview technique. Students were matched pairs according to their respective discipline and were then assigned to either a treatment group or a control group. The result of the finding revealed that there is a significant effect on discipline on statistical anxiety as those in social science and education displayed high level of statistical anxiety than those in pure sciences

STATEMENT OF THE PROBLEM

Statistics anxiety is a pervasive problem in many fields of study. A large proportion of students identify statistics courses as the most anxiety-inducing courses in their curriculum or area of discipline. However, as a consequence, the likelihood of statistics anxiety increases and may lead to problems on the course studied by a student through reactions like; students experience learning difficulties, postpone taking statistics courses or statistics examinations, delay assignments, and show lower academic achievements. It is a common observation that most students choose Art subjects with intention to avoid Mathematics or causes with calculations; however they have to face statistics as a requisite for their project or thesis. Statistics anxiety is a challenge in higher education and can dampen undergraduate's enthusiasm to engage with mandatory statistics courses. Statistics anxiety is usually accompanied by test anxiety, negative attitudes toward statistics and fear of failure. Hence a complex issue which requires extremely delicate handling. Its adverse influence on students' academic performance is known and should be appropriately addressed. The range of cultural, socio-economic and academic backgrounds of students manifests itself through diverse expectations and individual learning requirements that need to be carefully considered.

It is no doubt that everyone has feeling of anxiety at some point in their life. Feeling anxious is sometimes perfectly normal however; undergraduates with severe form of anxiety find it had to control their worries. Their feeling of anxiety is more constant and often affects their academic performance or daily life. Although the negative relationship between statistics anxiety and academic performance has been investigated in several studies, little is known about how statistics anxiety is related to learning behaviour and to which degree it is related to students' dispositions, attitudes, or experiences. More so, little has been done on the relationship between influences of learning environment, school proprietorship, students' academic discipline, students' attitude on statistics anxiety. Therefore, the corollary of this is that, some level of anxiety is needed to enable statistics students avoid some thoughts of failure in examination. Often, extreme anxiety is detrimental to performance in statistics. It is in view of these problems the researcher is interests in assessing statistical anxiety level among undergraduate students in universities and how the level is influenced by factors such as gender, age, student's academic discipline, attitudes, learning environment, and school proprietorship.

OBJECTIVES OF THE STUDY

The purpose of this study was to examine demographic variables on statistics anxiety among students in universities in South East Nigeria. Specifically, this study seeks to:

1. Determine the influence of gender on statistics anxiety in terms of ;
 - (i) worth of statistics anxiety
 - (ii) computation self-concept anxiety
 - (iii) fear of statistics teacher anxiety and overall statistics anxiety.
2. Determine the influence of age on statistics anxiety in terms of;
 - (i) worth of statistics anxiety
 - (ii) computation self-concept anxiety
 - (iii) fear of statistics teacher anxiety and overall statistics anxiety.
3. Determine the influence of academic discipline on statistics anxiety in terms of ;
 - (i) worth of statistics anxiety
 - (ii) computation self-concept anxiety
 - (iii) fear of statistics teacher anxiety and overall statistics anxiety.

STATEMENT OF HYPOTHESES

To further guide the study, the following hypotheses were formulated:

- i. Male students do not differ significantly from their female counterparts in statistics anxiety in terms of (worth of statistics anxiety, computation self-concept anxiety, fear of statistics teacher anxiety and overall statistics anxiety).
- ii. There is no significant influence of age on statistics anxiety in terms of (worth of statistics anxiety, computation self-concept anxiety, fear of statistics teacher anxiety and overall statistics anxiety).
- iii. There is no significant influence of academic discipline on statistics anxiety in terms of (worth of statistics anxiety, computation self-concept anxiety, fear of statistics teacher anxiety and overall statistics anxiety).

2. PROCEDURE AND METHODS

The study adopted the descriptive survey design. According to Isangedighi (2012), descriptive survey design involves determining the nature of a situation as it exists at the time of investigation. The population of this study comprised all the 29, 875 year three students in four universities in south East, Nigeria (2 Federal and 2 State Universities). The chosen universities include, Federal University of Technology Futo Owerre, University of Nigeria Nsukka, Abia State University Uturu, Chukwu Emeka Odumegwu Ogukwu University Uli Anambra State. Thus, Federal University of Technology Futo, Owerre has 3,186 male and 6,145 female, University of Nigeria Nsukka, 7,231 male and 4,642 female, Abia State University Uturu has 2341 female and 1276 male while Chukwu Emeka Odumegwu Ogukwu University Uli Anambra State 2,587 and 2,467 respectively, as obtained from the Academic Unit, (2017/2018). The sample comprised 1,793 year three students representing 2% of the population of year three students in the chosen universities in South-East Nigeria as obtained from the field study 2017. The instrument for data collection was an adapted instrument titled "Statistics Anxiety Assessment Questionnaire" (SAAQ) developed by Donncha, Mark and Martin (2001) which has three sections A and B. Section-A, comprises demographic data e.g. gender, age and academic discipline. Section B, was a 30 items scale on statistics anxiety on the following dimensions (i) interpretation anxiety, (ii) test and classroom anxiety (iii) fear of asking for help (iv) worth of statistics and (v) computation self-concept anxiety (vi) fear of statistics teachers. Respondent were required to indicate their level of agreement/disagreement under various responses (Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD)). The instrument validity was established by experts in Measurement and Evaluation and Educational Psychology who helped to scrutinize the questionnaire. The reliability of the research instrument was established with Cronbach Alpha reliability analysis and the index ranged from 0.84 to 0.97. The research

questions were analyzed using mean and standard deviation, while the stated hypotheses were tested using population independent t-test and One-way ANOVA at .05 alpha level. The Statistical Package for Social Sciences (SPSS) version 22 was employed for the data analysis.

3. TEST OF HYPOTHESES

The hypotheses stated in the study were tested as follows

Hypothesis one

Male students do not differ significantly from their female counterparts in terms of their statistical anxiety. The independent variable is gender (male and female) while the dependent variable is statistics anxiety (worth of statistics anxiety, computation self-concept anxiety, fear of statistics teacher anxiety and overall statistics anxiety). To test this hypothesis independent t-test was employed as presented in Table 1.

TABLE 1: Result of independent t-test analysis of gender on statistical anxiety in terms of worth of statistics anxiety, computation self-concept anxiety and fear of statistics teacher anxiety and overall statistics anxiety

Gender on worth of statistics anxiety	N	\bar{X}	SD	T	df	p-value
Male	809	16.3881	3.97581	-4.87	1,505	.000*
Female	696	17.3309	5.10865			
Gender on computation self-concept anxiety	N	\bar{X}	SD	T	df	p-value
Male	809	15.6539	3.39793	4.291	1503	.000*
Female	696	14.4569	7.03851			
Gender on fear of statistics teacher anxiety	N	\bar{X}	SD	T	df	p-value
Male	809	16.0062	4.08707	-.071	1504	.943
Female	696	16.0230	5.06703			
Gender on overall statistical anxiety	N	\bar{X}	SD	T	df	p-value
Male	2,427	16.09	4.00	4.18	4513	.002*
Female	2,088	15.63	3.22			

It is obvious from the result in Table 1 with independent t-test analysis of gender and statistical anxiety in terms of worth of statistics anxiety, computation self-concept anxiety and fear of statistics teacher anxiety and overall statistics anxiety. The p-value for gender on worth of statistics anxiety was .000 which is less than the chosen alpha of .05, the p-value for gender on computation self-concept was .000 which is less than the chosen alpha of .05, the p-value of gender on fear of statistics teacher anxiety was .943 which is greater than the chosen alpha of .05. This means that the null hypothesis of the influence of gender on statistical anxiety in terms of worth of statistics anxiety and computation self-concept anxiety were rejected. This implies that there is a significant influence of gender on statistical anxiety in terms of worth of statistics anxiety and computation self-concept anxiety, while for the influence of gender on statistical anxiety on the basis of fear of statistics teacher anxiety, the null hypothesis was accepted. When the overall statistical anxiety was computed, the p-value is .002 which is less than the chosen alpha of .05, thus the null hypothesis is rejected. This implies that gender has a significant influence on overall statistics anxiety.

Hypothesis two: There is no statistically significant influence of age on statistics anxiety among undergraduates
Independent variable: Age (Below 20 years, 20-29, 30-39 and 40 years and above)
Dependent variable: Statistics anxiety (worth of statistics anxiety, computation self-concept anxiety and fear of statistics teacher anxiety and overall statistics anxiety). To test this hypothesis one-way ANOVA was employed as presented in Table 2.

TABLE 2: Results of One-way ANOVA of age on statistics anxiety among undergraduates students in terms of worth of statistics anxiety, computation self-concept anxiety and fear of statistics teacher anxiety and overall statistics anxiety

Age on Worth of Statistics Anxiety	N	\bar{X}	SD		
Below 20 years	246	17.1545	5.18874		
20-29 years	177	17.1130	3.31811		
30-39 years	591	16.7445	4.77323		
40 years and above	493	16.3185	4.30848		
Total	1507	16.7153	4.55619		
Sources of Variance	Sum of Squares	df	Mean Square	F	p-value
Between Groups	153.584	3	51.195	2.473	.060
Within Groups	31109.292	1503	20.698		
Total	31262.876	1506			
Age on Computation Self-concept Anxiety	N	\bar{X}	SD		
Below 20 years	246	17.1110	5.23511		
20-29 years	177	17.5254	3.02359		
30-39 years	591	16.8782	3.62272		
40 years and above	493	16.8093	4.14280		
Total	1507	16.9768	4.05868		
Sources of Variance	Sum of Squares	df	Mean Square	F	p-value
Between Groups	80.616	3	26.872	1.633	.180
Within Groups	24727.571	1503	16.452		
Total	24808.187	1506			
Age on Fear of Statistics Teachers anxiety	N	\bar{X}	SD		
Below 20 years	246	16.7439	5.37297		
20-29 years	177	16.4689	3.44278		
30-39 years	591	16.8105	3.60667		
40 years and above	493	17.1379	4.05216		
Total	1507	16.8666	4.07289		
Sources of Variance	Sum of Squares	df	Mean Square	F	p-value
Between Groups	69.851	3	23.284	1.405	.240
Within Groups	24912.341	1503	16.575		
Total	24982.191	1506			
Age on Overall Statistics Anxiety	N	\bar{X}	SD		
Below 20 years	738	17.0122	5.39424		
20-29 years	531	16.6158	3.46236		
30-39 years	1773	17.1032	3.62073		
40 years and above	1479	17.1744	4.04019		
Total	4521	17.0544	4.07821		
Sources of variance	Sum of Squares	df	Mean Square	F	p-value
Between Groups	42.997	3	14.332	.862	.460
Within Groups	25004.541	1503	16.636		
Total	25047.538	1506			

p>.05

The result of the analysis in table 2 with One-way ANOVA of age on statistics anxiety among undergraduates students in terms of worth of statistics anxiety, computation self-concept anxiety and fear of statistics teacher anxiety and overall statistics anxiety showed that while the p-value .060, for age on statistics anxiety on the basis of worth of statistics anxiety was greater than the chosen alpha of .05, age on statistics anxiety among undergraduates students on the basis of

computation self-concept anxiety has a p-value of .180 which was found to be greater than the chosen alpha of .05, age on statistics anxiety among undergraduates students on the basis of fear of statistics teacher anxiety has a p-value of .240 was found to be greater than the chosen alpha of .05, age on overall statistics anxiety showed that while the p-value was .460, for age on statistics anxiety with a chosen alpha of .05. Thus the null hypothesis is accepted.

Hypothesis three

There is no statistically significant influence of academic discipline on statistics anxiety among undergraduates. The independent variable in this hypothesis is academic discipline (Education, Social science, Sciences and Management Science), while the dependent variable is Statistics anxiety (worth of statistics anxiety, computation self-concept anxiety and fear of statistics teacher anxiety and overall statistics anxiety). To test this hypothesis one way-ANOVA was employed as presented in Table 3.

TABLE 3: Summary of one way ANOVA on academic discipline on statistics anxiety among undergraduates students on the basis of worth of statistics anxiety, computation self-concept anxiety and fear of statistics teacher anxiety and overall statistics anxiety

Academic discipline on Worth of Statistics Anxiety	N	\bar{X}	SD		
Education	439	17.8503	3.07529		
Management sciences	474	14.1786	4.19477		
Social science	330	15.5939	5.64060		
Sciences	264	16.3166	4.30540		
Total	1507	16.7153	4.55619		
Sources of Variance	Sum of Squares	Df	Mean Square	F	p-value
Between Groups	2585.649	3	861.883	45.450	.000
Within Groups	28501.584	1503	18.963		
Total	31087.233	1506			
Academic discipline on Computation Self-concept Anxiety	N	\bar{X}	SD		
Education	439	17.1002	3.88829		
Management sciences	474	14.2364	4.19191		
Social science	330	14.8007	3.93506		
Sciences	264	16.5078	5.32171		
Total	1507	16.0226	4.54337		
Sources of Variance	Sum of Squares	df	Mean Square	F	p-value
Between Groups	2825.804	3	941.935	50.094	.003
Within Groups	28261.429	1503	18.803		
Total	31087.233	1506			
Academic discipline on fear of statistics teacher anxiety	N	\bar{X}	SD		
Education	439	17.8688	3.07558		
Management sciences	474	13.8587	4.04248		
Social science	330	14.8007	3.93506		
Sciences	264	16.5078	5.32171		
Total	1507	16.0285	4.53347		
Sources of Variance	Sum of Squares	df	Mean Square	F	p-value
Between Groups	3280.071	3	1093.357	59.386	.000
Within Groups	27671.702	1503	18.411		
Total	30951.773	1506			
Academic discipline on overall statistical anxiety	N	\bar{X}	SD		

Education	1317	18.1292	2.93048		
Management sciences	1422	15.5481	4.13790		
Social science	990	14.8007	3.93506		
Sciences	792	16.5078	5.32171		
Total	4521	16.0285	4.53347		
Sources of Variance	Sum of Squares	df	Mean Square	F	p-value
Between Groups	1482.366	3	494.122	25.201	.0001
Within Groups	29469.408	1503	19.607		
Total	30951.773	1506			

*p<.05

Table 3 revealed the result with One-way ANOVA of academic discipline on statistics anxiety among undergraduates students in terms of worth of statistics anxiety, computation self-concept anxiety, fear of statistics teacher anxiety and overall statistics anxiety showed that while the p-value .000, for academic discipline on statistics anxiety on the basis of worth of statistics anxiety was greater than the chosen alpha of .05, academic discipline on statistics anxiety among undergraduates students on the basis of computation self-concept anxiety has a p-value of .003 which was found to be less than the chosen alpha of .05, academic discipline on statistics anxiety among undergraduates students on the basis of fear of statistics teacher anxiety has a p-value of .000 was found to be less than the chosen alpha of .05, while academic discipline on overall statistics anxiety showed that while the p-value was .001 which was found to be less than the chosen alpha of .05. Thus the null hypothesis is rejected. This implies that there is a significant influence of academic discipline on statistics anxiety among undergraduates' students in terms of worth of statistics anxiety, computation self-concept anxiety, fear of statistics teacher anxiety and overall statistics anxiety

4. DISCUSSIONS

The result of the findings revealed that that female students experienced greater anxiety, pressure, nervousness, and stress about entering a classroom and taking/completing a statistics class. Female students also questioned their abilities/performance in a statistics class, and in general exhibited a more negative and unfavorable attitude towards statistics. It can be speculated that female students have negative attitudes (and unfavorable attitudes) also experience anxiety and low efficacy towards statistics. The present findings agree with that of Onwuegbuzie and Wilson (2003) who studies found that statistics anxiety was high among all 226 South African technical college students sampled, but not high at the same level for all the students. Also, Oladipo and Ogungbamila (2013) findings revealed that female students experience higher levels of test anxiety than do males irrespective of cultural background. The conclusion drawn from their findings was that a major causal factor involved in the gender-related differences in statistics anxiety among students was a greater role expectation conflict among females than among males. Similarly, Oladipo and Ogungbamila (2013) result indicated that gender does not have any significant relationship (positive or negative) with his or her level of statistics anxiety. In other words, the null hypothesis was rejected in favour of the alternative hypothesis.

Age is one of the variables which is of great interest to this study because many studies have been conducted to investigate its effects on students' achievement and statistics anxiety and has shown that the correlation between age and school achievement in statistics diminishes as students become older, schools provide equalizing experiences and thus the longer the students study in the schooling process, the more the impact of the age on students' achievement is diminished. In addition, as the students move up the age, more students drop out of school, thus reducing the magnitude of the correlation. The study agrees with Oladipo and Ogungbamila (2013) study on the influence of gender on statistical anxiety among graduate students in Ilorin using Cross Sectional research design and data collected from 281 undergraduate students as sample size through simple random sampling (ballot system) constituting 182 (64.8%) males and 99 (35.2%) females between the age range of 16-30, mean age of 21.88 and standard deviation of 2.637 respectively. The instrument used for data collection had 0.85 Alpha reliability. Data were analyzed using SPSS-19 software and hypothesis tested with Pearson Moment Correlation. Their result indicated that gender does not have any significant relationship (positive or negative) with his or her level of statistics anxiety. In other words, the null hypothesis was rejected in favour of the alternative hypothesis.

Age is one of the variables which is of great interest to this study because many studies have been conducted to investigate its effects on students' achievement and statistics anxiety and has shown that the correlation between age and school achievement in statistics diminishes as students become older, schools provide equalizing experiences and thus the longer the students study in the schooling process, the more the impact of the age on students' achievement is diminished. In addition, as the students move up the age, more students drop out of school, thus reducing the magnitude of the correlation. Also there was evidence that older students fared better academically than the younger ones. The present finding is in agreement with Tabachnick and Fidell (2007) whose finding revealed that there was no relationship between age and statistical anxiety ($r = 0.29$, $p > 0.05$). The study also found that students with greater skills of both types tend to have lower levels of test anxiety. Further, the data indicate that study coping skills were not significantly related to the anxiety dimensions of worth of statistics ($r = -0.48$, $p > 0.05$) and fear of asking for help was not significant ($r = -0.43$, $p > 0.05$), while computation self-concept was not significant ($r = -0.49$, $p > 0.05$). Also Ladouceur, Gosselin and Dugas (2000)

The finding revealed that academic discipline has a significant influence on statistical anxiety. The department or the area of study of the student statistical anxiety can affect students' performance in statistics classes, and cause feelings of inadequacy and low self-efficacy for statistics-related activities. Statistics anxiety has been linked to students' performance in statistics and research courses, and has been recognized as a deterrent to students' finishing their degree. It has also been linked to area of discipline of the student in question as it is found that it is more prevalent among non-science students than science background students. The present study agrees with Healy (2009) whose study found that students discipline has a significant relationship on their statistical anxiety. The study also found that both students in science and education display the same level of statistical anxiety. Also, Habibollah, Abdullahi, Arizan, Sharir and Kurma, (2009) result revealed that there is a significant effect on discipline on statistical anxiety as those in social science and education displayed high level of statistical anxiety than those in pure sciences. In the same vein, Gould (2010) study revealed that positive effects of statistical reasoning based on discipline and those in humanities, education and law display more fears on statistical courses than those in science discipline.

5. CONCLUSION AND IMPLICATION OF THE STUDY

This study focused on the demographic variables and statistical anxiety among post graduate students in Universities in South-East Nigeria. Thus research in this area will add more to the bank of knowledge as it will provide information regarding demographic variables as the influence statistical anxiety among students

6. RECOMMENDATION

The following recommendations were drawn from the study

Teachers of statistics should develop vast knowledge in order to adopt different variety of instructors in their teaching so as to meet the needs of all their students, including students with higher levels of statistics anxiety.

The study should redirect teachers of statistics and other quantitative related courses on statistics and teachers should be aware that students having a limited prior mathematics or statistics background might experience more difficulties in statistics courses, specifically when doing any sort of timed activity. Finally, future researchers should consider including statistics students from other disciplines other than the area of discipline considered in this study

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