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## THE RELATIONSHIP BETWEEN POST UME SCORES AND STUDENTS' ACADEMIC ACHIEVEMENT IN FEDERAL UNIVERSITY OF TECHNOLOGY, YOLA

Popoola, S.F.

Department of Educational Foundations,

University of Jos, Nigeria

Email: [funsoiye@yahoo.com](mailto:funsoiye@yahoo.com)

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***Abstract:** In the past, JAMB has been the sole examination body responsible for conduct of qualifying examination into tertiary institutions in Nigeria until introduction of Post University Matriculation Examination (PUME) as a "child of necessity" due to the fact that doubt has been brought to the credibility of JAMB/UME scores. Shortly after its introduction PUME, has been faced with its share of public criticisms from different segments of the society. This study therefore seeks to examine the relationship between Post UME Scores and Students' Academic Achievement in Federal University of Technology, Yola. The researcher used estimated population size of two thousand, five hundred (2500) candidates from which a sample of four hundred and Sixty-eight (468) was drawn, using stratified and purposive random sampling. The study employed correlation research design and used adapted existing pro-forma for data collection. The appropriateness of instrument was rated at 83 percent with 0.83 rational validity index. The findings revealed that the relationship between Post University Matriculation Examination Screening and students' first year result was not significant in Federal University of Technology, Yola. The researcher recommends among others PUME be strengthened through the use of uniform standard as well as valid and reliable instrument.*

**Keywords:** JAMB Examination, PUME, Public Criticisms, Student Academic Achievement

### Introduction

The Joint Admissions and Matriculation Board (JAMB) was established under decree No 2 in 1978 to address the problem of proper and unified conduct of entrance examination into universities in Nigeria. This duty was later extended to other tertiary institutions such as polytechnics and colleges of education in 1988 (Okotete, 2012). This examination board was laden with the noble responsibility of administering examinations on different subjects for the placement of suitably qualified candidates into tertiary institutions in Nigeria in order of their choice in terms of institutions and courses. The first conducted examination in 1978 was called the Joint Matriculation Examinations (JME) which was later changed to University Matriculation Examinations (UME) and presently Unified Tertiary Matriculation Examinations (UTME). It is now UTME because of its combination of entrance examinations into all tertiary institutions in Nigeria.

As a selection examination, candidates' scores are used as the basic tool for decision making by the various tertiary institutions as regards applicants' admission. JAMB as an examination body started well and performed satisfactorily for many years until its credibility was affected by the problem of examination mal-practice of various forms and

shades. The monster of examination mal-practice deeply affected the University Matriculation Examination. It was a major problem confronting JAMB/ UME in the sense that it rendered the examination unreliable, invalid and unsuitable. Consequently, it affected the integrity of the nations' higher institutions, their certificates and products such that they became unacceptable to the global society. Such malpractices ranged from students cheating during the examination to parents buying high scores for their wards, alteration of JAMB slips before presentation to institution of interest and selling of examination papers, (Ekpe-Juda, 2010)

The consequence of this was that JAMB candidates without high intellectual ability ended up with high scores, getting their ways into tertiary institutions. Eventually, such mediocre could not cope in their course work and therefore failed woefully at the end of 100-level examinations (Okotete, 2012). This problem has brought doubt to the credibility of JAMB/ UME scores which eventually brought about the birth of Post University Matriculation Examinations (PUME) as a "child of necessity." The introduction of PUME to the scene of admission into tertiary institutions is meant to solve the problem identified with JAMB. Therefore, it is expected that PUME address the problem of examination malpractice to ensure that only qualified candidates are admitted to our tertiary institutions. The nature of the exercise is such that qualified candidates from JAMB are subjected to tests in about four subjects relating to their chosen courses as a form of screening by the individual institutions. It is worth noting that the form of such tests and the charges are purely prerogative of the individual institutions.

Olugbile (2010) posited that PUME screening was introduced by the former Minister of Education, Mrs. Chinwe Obaji in 2005, following public outcry against the credibility of the examination conducted by JAMB and the universities' persistent demand for greater participation in the process of admitting students to the institutions. As a back-up of the appropriateness of PUME, Okotete (2012) cited the case of the first PUME conducted by the University of Benin where many high scorers could not pass the PUME. Specifically, four out of the eight highest scorers in the JAMB examinations did not appear for the PUME, the other four who made an attempt did not score the 50 percent minimum pass mark and were therefore not given the admission.

This study bothers on relationship between two variables (PUME and Students' Academic Achievement). According to Borg and Gall, cited in Ali, Chukwuma and Mgbojule (1991) relationships are carried out in order to study the connection between the different variables obtained about the same time. Various studies have been carried out on relationships. One of such is Sear (1983) who carried out an investigation into relationship between 'A' level and degree results using graduates of University of Great Britain. The result showed significant relationship between 'A' level and degree results. Oyesola (1991) investigated the relationship between entry requirement and post-admission performance of the Geography students in Advanced Teachers' College, Zaria. The result revealed that there is no significant difference in 0.05 levels in three of four sets while one is significant.

Also, Adegboye (1997) carried out a study of the relationship between students' performance in English Language and Science subjects through the analysis of the past result of candidates in SSCE. He concluded that there is positive linear correlation between the WASC grades in English Language and the Science subjects of Biology, Chemistry, Physics and Mathematics.

The importance of this study is to ascertain the extent of the relationship between PUME scores and Students' First Year Grade Point Average in FUT, Yola. This is not unconnected with the fact that there have been a lot of complaints against PUME from various stakeholders. Olugbile (2010) asserted that five years after its introduction, some stakeholders are capitalizing on the abuse some universities have subjected the test to, to call for its scrapping. This was to such an extent that members of the House of Representatives called on the Federal Ministry of Education and the NUC to stop the PUME tests. However, the voice of the Committee of Vice Chancellors prevailed against this move. They noted that before the introduction of the screening exercise, over 40 percent of registered undergraduates to most universities rarely cope, thereby questioning the high scores recorded in UME. However, since the introduction of PUME, the rate has reduced to less than 50 percent. It worth its salt therefore, to examine the importance of PUME as admission selection test. For this study, two research questions and one hypothesis is formulated.

### **Research Question 1**

What is the relationship between students' PUME scores and their first year Grade Point Average in FUT, Yola?

### **Research Question 2**

Is the relationship between PUME scores and students' FGPA influenced by gender of students in FUT, Yola?

### **Hypothesis**

There is no significant difference between PUME and FGPA in FUT, Yola.

This study employed correlation research design, with the aim of discovering relationships between the two variables (Post University Matriculation Examination and First Year Grade Point Average). The predictor variable can be seen as the independent variable which is the Post-UME screening test scores while the other criterion variable is the students' First Year Grade Point Average (FGPA) and also regarded as the dependent variable. The research design adopted is ex-post facto in nature, all the research variables had already existed before the commencement of the study and hence the researcher neither controlled nor manipulated any of them. The estimated population size was two thousand and five hundred (2500) candidates from which a sample of four hundred and sixty-eight (468) candidates were selected using stratified random and purposive sampling. The limitation in the sample size arose from the exclusion of the use of modes

of admission other than the University Matriculation Examination, such as Remedial Studies/ Pre-degree.

The instrument used for collecting the data was an adapted existing pro-forma [used by Omole (1997) and JAMB (2007)].

Furthermore, the format for data collection was subjected to critical appraisal by authorities in research methods and educational measurement and evaluation and their ratings of the appropriateness of the instrument were translated into percentage scores through which a mean of 83% was obtained. This percentage was interpreted as 0.83 rational validity index (Anikweze, 2010). For uniformity sake, there was conversion of each candidate's score both Post-UME and that of First Year Grade Point Average. Pearson Product Moment Correlations and Regression were employed for data analysis. The former was used to obtain the co-efficient of relationships between the variables, while Regression was used to find the equation for prediction. All analysis were done using SPSS 17.0 version.

## Discussion

### Research Question 1

What is the relationship between students' Post-UME screening scores and their FCGPA for FUT-Yola?

**Table 4.1: Summary of Relationship between Post-UME Scores and FCGPA for FUT-Yola**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.077 <sup>a</sup>	.006	-.001	.771	.006	.843	1	141	.360

a. Predictors: (Constant), Post-UME

Table 4.1 depicts the summary statistics of the relationship between Post-UME scores and FCGPA scores. This comprises of the correlation coefficient R, coefficient of determination R<sup>2</sup> and the change statistics.

**Table 4.2: Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.086	.272		7.671	.000	1.548	2.623
	PUME	.005	.006	.077	.918	.360	-.006	.016

a. Dependent Variable: FCGPA

Table 4.2 shows the coefficients made up of the standardized and un-standardized coefficients. The regression analysis carried out shows that a relationship actually exists between Post-UME and FCGPA. However, the coefficient of relationship is very low. That is  $R=.077$ . The coefficient of determination is also  $=.006$ . This means that in the relationship, the Post-UME accounted for only 0.6% in the relationship. This is very poor. The contribution of Post-UME to the relationship is therefore not encouraging. The F-change is also small and is  $=.843$  which is not significant.

**Hypothesis H<sub>01</sub>**

There is no significant relationship between Post-UME and FCGPA for FUT-YOLA

**Table 4.3: Paired Samples Statistics**

	Mean	N	Correlation	Significance	Std. Deviation	Std. Error Mean
Pair 1 FCGPA	2.3282	143	.077	.360	.77065	.06444
Post-UME	47.04	143			11.524	.964

Table 4.3 shows the paired samples t-test carried on FCGPA and Post-UME scores for FUT-Yola. Vital statistics such as the mean and standard deviations of the Post-UME scores and the FCGPA are also shown.

**Table 4.4: Coefficients**

	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 FCGPA - Post-UME	-44.712	11.489	.9608	-46.612	-42.813	-46.535	142	.000

Table 4.4 shows the paired samples differences. From the table it can be seen that there exists no significant relationship between Post-UME scores and FCGPA because the level of significance  $= .360 > 0.05$  level of significance. In table also which shows the paired samples test of FCGPA - Post-UME, the calculated t-value  $= -46.535$  is  $>$  the critical t-value  $= 1.645$  at 1,142 d.f in absolute terms. This is significant at  $p<0.05$  level. What this means is that if we remove the effect of Post-UME from FCGPA, the result is significant. Therefore, since the correlation coefficient between FCGPA and Post-UME scores is low at  $R= .077$  and not significant, we accept the hypothesis which says that there is no significant relationship between Post-UME scores and FCGPA.

Research Question 2

Is the relationship between Post-UME Scores and Students' FGPA influenced by Students' gender?

**Table 4.5: Summary of Relationship between Performance of Male Students in UME and FCGPA**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
	Sex = Male (Selected)				R Square Change	F Change	df1	df2	Sig. F Change
1	.348 <sup>a</sup>	.121	.118	.90760	.121	34.076	1	247	.000

a. Predictors: (Constant), UME

What is the relationship between male and female students' performance in UME, Post-UME and FCGPA for FUT-Yola?

The general contribution of UME to the prediction or relationship between UME and FCGPA is .434. This result is for both males and females' students from FUT-Yola. Table 4.5 shows that taking males alone showed an R = .348. This is lower than when the two sexes were combined. The contribution of male candidates to the relationship is about .121 or 12.1%. Therefore, the relationship between male UME students and FCGPA is positive, high and significant at  $p < 0.05$ .

**Table 4.6: Coefficients<sup>a,b</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-.136	.408		-.333	.739	-.940	.668
	UME	.010	.002	.348	5.837	.000	.007	.014

a. Dependent Variable: GPA

b. Selecting only cases for which Sex = Male

**Table 4.7: Summary of Relationship between Performance of Female Students in UME and FCGPA**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
	Sex = Female (Selected)				R Square Change	F Change	df1	df2	Sig. F Change
1	.144 <sup>a</sup>	.021	.016	.73229	.021	4.617	1	217	.033

a. Predictors: (Constant), UME

Table 4.7 shows the coefficients. The t-test here also reveals that calculated t-value = 5.837 > than the critical t-value = 1.654. The result is significant as well.

Table 4.7 shows that taking females alone showed an R = .144. This is lower than when the two sexes were combined. The contribution of female candidates to the relationship is about .021 or 2.1%. Therefore, the relationship between female UME students and FCGPA is positive, low and significant at  $p < 0.05$ .

**Table 4.8: Coefficients<sup>a,b</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.355	.419		3.239	.001	.530	2.180
	UME	.004	.002	.144	2.149	.033	.000	.008

Table 4.8 reveals the coefficients. The t-test carried out on the performance of female candidates. The calculated t-value= 2.149 and this is > than the critical value of 1.645 at  $p < 0.05$  level of significance. This result however, shows that the females contributed less in the relationship between UME and FCGPA scores at  $p < 0.05$ .

**Table 4.9: Summary of Relationship between Performance of Male Students in Post-UME and FCGPA**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
	Sex = Male (Selected)				R Square Change	F Change	df1	df2	Sig. F Change
1	.059 <sup>a</sup>	.003	.000	.96650	.003	.858	1	247	.355

Predictors: (Constant), Post-UME

The male/female performance between Post-UME and FCGPA is quite different. The relationship between male performance in Post-UME and FCGPA = R = .059 or 5.9%. This is quite low. The coefficient of determination  $R^2 = 0.003$  or .3% shows that there is a very low relationship between performance in Post-UME and FCGPA for the male students. This means that the performance of the males in the Post-UME contributed very little to the relationship.

**Table 4.10: Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.441	.243		10.054	.000	1.963	2.919
	Post-UME	-.005	.005	-.059	-.926	.355	-.014	.005

- a. Dependent Variable: GPA
- b. Selecting only cases for which Sex = Male

Also, in Table 4.11, the calculated  $t_{cal}$ -value =  $-0.926 < t_{-crit}=1.645$  at  $p < 0.05$  is not significant.

Table 4.11: Summary of Relationship between performance of Female students in Post-UME and FCGPA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
	Sex = Female (Selected)				R Square Change	F Change	df1	df2	Sig. F Change
1	.101 <sup>a</sup>	.010	.006	.73629	.010	2.216	1	217	.138

a. Predictors: (Constant), Post-UME

Table 4.11 shows the summary statistics of the relationship between Post-UME and FCGPA grade. The correlation coefficient  $R = .101$  with the coefficient of determination given as  $R^2 = .010$  or 10% as well as the change statistics showing the significant F change and the degree of freedom. The correlation coefficient  $R$  is low and is not significant.

### Summary

The findings revealed that the relationship between Post-University Matriculation Examination screening and the students' first year results was not significant in Federal University of Technology, Yola. In Federal University of Technology, Yola, the influence of female students is less than that of their male counterparts. There is significant relationship between male and female students in the Post-UME.

The poor relationship between the Post-UME and FCGPA could be due to fact that the University screening exercise has no syllabus and therefore is not standardized. It is also subjective and could be influenced by the individual university staff.

### Recommendations

1. The cumbersome nature of the PUME should be addressed, as some universities make pre-admission process unpleasant for students.
2. PUME should not be considered as a major examination, but as a screening exercise only in order that the various universities can have direct contact with their prospective students (Olugbile, 2010).
3. There is the need to strengthen the Post UME exercise by using uniform standard to serve as guidelines. Also valid and reliable instrument should be used.

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