

EFFECT OF ENTRY REQUIREMENT, SECONDARY SCHOOL TYPE ON CUMULATIVE GRADE POINT AVERAGE IN TARABA STATE UNIVERSITY, NIGERIA.

ABSTRACT

This paper considered the effect of student's entry requirements, Secondary school type and Cumulative Grade Point Average of the 2014/2015 final year students of the four faculties of the Taraba State University. Primary data was collected through the use of a questionnaire from the respondents of the selected programmes from each faculty. Correlation Analysis was carried out on the students', CGPA's at lower levels, UTME score, SSCE results and Secondary school type. It was discovered that only CGPA at the end of 300 level has significant relationship with CGPA at the current level while the stepwise regression analysis shows that only CGPA at 300 level is the best predictors of students' graduation CGPA all other variables are not significant and regression analysis was used to established models for predicting graduation CGPA. Based on the findings of the study, it can therefore be concluded that entry requirements have no effect in determining the performance of students while at the university. That only CGPA at 300 level has an effect in determining students' performance. The study therefore recommends, among others, that since UTME scores are poor predictors of student academic performance, Taraba State University should be conducting a POST-UTME examination before giving admissions to students.

Keywords: UTME Score, SSCE Results, Secondary School type and CGPA

1. INTRODUCTION

According to Tosanwumi (2011), "in order to qualify for admission into a Nigerian university, a candidate must satisfy some minimum requirements. In the first place, he or she must obtain five relevant credits in the Senior Secondary School Certificate Examination (SSCE), including English and mathematics. The examination taken by candidates in their last stage of secondary education is called the Senior School Certificate Examination (SSCE)". All senior secondary schools in the federation present candidates for the SSCE because the results are used for

- (a) Admission into tertiary Institutions
- (b) Employment Purposes
- (c) Qualification to stand for elective offices.

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external candidates". The same SSCE examination is taken by the different secondary school types, whether public schools or private schools. In addition, such a candidate must sit for and obtain a minimum pass mark in the Unified Tertiary Matriculation Examination (UTME) conducted by the Joint Admissions and Matriculation Board (JAMB) as well as pass an additional post-university matriculation examination screening test (post-UME) conducted by the selected university. The Joint Admission and Matriculation Board is a Nigerian entrance examination board for tertiary institutions. The board conducts entrance examinations for prospective undergraduates into Nigerian universities. The board is also charged with the responsibility of administering similar examinations for applicants to Nigerian public and private monotechnics, polytechnics, and colleges of education. All of these candidates must have obtained the West African Certificate from the West African Examination Council or its equivalent.

Notwithstanding these stringent requirements for admission, the Nigerian students still perform badly in their semester examination, indulging in a variety of examination malpractice which makes the conduct of examinations a tedious chore. The performance of candidates in these examinations (SSCE and UTME) should be reflected in their performance while in tertiary institutions. The school of thought is that the performance at (SSCE or UTME) is related to the student's Cumulative Grade Point Average (CGPA) except if there are some interference.

This study is to determine the relationship between SSCE, UTME score, and (CGPA). Candidates who obtained the 5 minimum relevant credits in their SSCE are required to pass their UTME before proceeding to the tertiary institutions.

NUC (2007) defines "grading as the process of applying standardized measurement of varying levels of achievement in a course. The grade can be obtained through the use of the Grade Point Average (GPA) method. Performance in any semester is reported as a grade point average. This is the average number of weighted grade points earned in the courses taken during the semester. The grade point average is obtained by multiplying the grade point average in each course by the number of credit units assigned to that course, and then summing these up and dividing by the total number of credit units taken for the semester".

The CGPA is an indication of the student's overall performance at any point in the training programme. To compute the cumulative grade point average, the total of grade points multiplied by the respective credit units for all the semesters is added and then divided by the total number of credit units for all courses registered by the student.

1.1 STATEMENT OF PROBLEM

The performance of candidates in SSCE and UTME should be reflected in their performance while in tertiary institutions. The school of thought is that the performance at SSCE or UTME is related to the student's cumulative grade point average (CGPA) except if there are some interferences such as examination malpractice. This study, therefore, is an attempt to determine whether there is a relationship between SSCE, UTME score, secondary school type and CGPA and also to establish a model for prediction of graduation CGPA of final year students.

1.2 MOTIVATION TO DO THE WORK AND MAIN CONTRIBUTIONS

The Cumulative Grade Point Average (CGPA) is a tool or measure that is used to determine the class of degree that one graduates with. Hence, the importance of CGPA cannot be over emphasized. Therefore, the study seeks to find out if truly there exists a strong relationship (correlation) between the SSCE, UTME score, the secondary school type (public or private) and CGPA, which many are quick to describe as the major factors that determine one's success once he/she finds himself in a university. The findings of this study are extremely important to students, parents, high schools, and the government because they provide insight into factors that are important in determining one's performance.

1.3 REVIEW OF RELATED LITERATURES

Lawal and Adejuwon (2014) determined "the admission predictor that reduces the level of poor performance of undergraduates and reduces the level of attrition consequent upon poor performance and its attendant level of dropouts and prolonged stay in the university. They examined the academic

admission scores of; SSCE, UTME, PUTME and as predictors for the performance of the pioneer graduating students. The opined that UTME is a bad predictor, yet a government compulsory requirement for admission, thus they recommended that universities should continue to combine the UTME and PUTME but assign less weight to the UTME”.

Sojobi, et al (2014) examined the relative effectiveness of the Unified Tertiary Matriculation Examination (UTME) and Post Unified Tertiary Matriculation Examination (Post-UTME) on the first year (NDI) academic performance of students admitted to Moshood Abiola Polytechnic in 2012/2013 session. They also discovered that Post-UTME was more effective than the UTME and that there was a low and inverse relationship between students' scores in Post-UTME and UTME. They recommended that, Polytechnics managements should give high priority to students' Post-UTME performance than their UTME performance.

Ibrahim and Hassan (2013) studied “the relationship between West Africa Senior School Certificate Examination (WASSCE) entry grade in Mathematics and the academic achievement of Nigerian Certificate of Education (NCE) Mathematics students in Niger State College of Education, Minna. An ex-post facto research design was adopted for the study. When the results of male and female students were independently correlated, the male students maintained a high positive correlation, while the female students showed a low positive correlation”. It was recommended, among others, that “the State Ministry of Education should intensify more effort in conducting regular inspections of schools to ensure that effective teaching of mathematics is carried out in order to achieve the objectives of the National Policy on Education, which include the preparation of students for higher education” (FRN, 2004).

James and Borisade (2013) investigate “the relationship between cognitive entry characteristics (CEC), semester examination scores, and students' achievement in mathematics and find out the predictive strength of CEC and semester examination scores on college students' achievement in mathematics. The study employed ex-post facto design and was applied to 415 full-time students admitted into three-year National Certificate in Education (NCE) programmes in 2007/2008 and 2008/2009 academic sessions were selected using a purposive sampling technique”. An inventory of “entry characteristics and academic achievement” was used in collecting all the relevant data for the study. The data collected were subjected to statistical analysis using correlation and multiple regression analysis. The results of the study revealed that there is a positive and significant correlation between the criterion variable and the cumulative grade point average (CGPA).

Buameh and Philip (2013) carried out research on student performance in different courses. The study employs “systems theory to analyze the relationship between the quality of students admitted and their performance in the early part of the undergraduate program using Pearson's correlation. And the study concludes that there is a relationship between core mathematics and accounting at the pre-university level and the performance of undergraduate accounting students. No correlation was however found between pre-university English and their university level performance. The study recommends that due consideration be given to the existing admission policy criteria regarding emphasis on performance in Core English, particularly for accounting students seeking to pursue accounting programs, as it may be more harmful than good”.

Emmanuel and Osho (2012) investigate “the mode of entry as a predictor of success in Bachelor of Science in Education Mathematics Degree Examinations in Adeyemi College of Education (A.C.E), Ondo State, Nigeria. The study sample population comprises the 2006/2007 – 2009/2010 Mathematics Department Students of the College. The trend of their performance in the session examinations with respect to their mode of entry (MOE) was considered for the study, with special focus on final year students who scored a cumulative grade point average of 3.50 and above in their final examinations. The data collected was analyzed using frequency counts, percentages, measures of central tendency, and graphical illustrations. The findings revealed that the Direct Entry (DE) mode of entry is the best predictor of success in the college when compared with the University Matriculation Examination (UME) mode students' performance. Based on the findings, the paper recommends that more attention and a significant quota be given to the DE in the admission process into degree awarding colleges as well as universities in order to achieve the lofty goals of the National Policy on Education in providing the much needed qualitative education in Nigerian Universities, as the NCE, HSC Programmes, and so on are veritable tools in this regard”.

Agbodah and Godfred (2012) conducted research to determine “if SSCE scores, session and sex of students are imparted negatively or positively on each student's FCGPA score at the tertiary level. The data was compiled from the student records of various departments. The information sought were on gender, the session (morning or evening), the cumulative grade points average and the Senior Secondary School Certificate Examination (SSCE) scores of the 2006 to 2009-year group of students. The multiple linear regression with interaction was used to analyze the data. It was found that students who attend the morning session on average obtain a higher (CGPA) than their evening counterparts. It was also identified that there is no relation between a student's sex and his or her cumulative grade point average (CGPA) at a 5% significance level. Also, a student who enters Koforidua Polytechnic with the “best SSCE” scores obtains the highest cumulative grade point average (CGPA)”.

Abe (2012) investigates “sex differentials in predicting academic achievement from cognitive entry characteristics and semester grades among the Mathematics students of the College of Education, Ikere, Ekiti State, Nigeria. A stratified random sampling technique was adopted to select a sample of 367 students (141 males and 226 females) from the nine mathematics combinations. While the t-test statistic and multiple regression (backward solution) were used in the data analysis, the result showed that at P 0.05, a significant difference existed between male and female academic achievement (CGPA), while there was no significant difference between male and female academic performance in algebra and statistics”.

1.3.1 GAP IN THE EXISTING LITERATURE

The aforementioned work did not include the SSCE, secondary school type, UTME Score, and CGPA together in any of the analysis. Hence, this work is an attempt to use all the variables and see how correlated they are to CGPA.

2. MATERIAL AND METHODS

The data for this work was collected using questionnaire from all the four faculties, namely Faculty of Agriculture (FAG), Faculty of Arts and Social sciences (FASS), Faculty of Education (FED) and Faculty of Sciences (FSC) of the Taraba State University (TSU). Three programmes were selected from each faculty using a Simple Random Sampling and Method of proportional allocation of sample size was employed in allocating the sample sizes to each of the faculty using

$$n_h = n \frac{N_h}{N} \quad (1)$$

(See Fabian 2012)

Where,

n_h = Sample size allocated to each faculty.

n = number of samples required.

N_h = Number of Students per faculty

N = Total number of final year students from the 4 faculties.

Data collected includes: CGPA at the end of 300 levels and 400 levels for those in the Faculty of Agriculture; senior secondary school type of the respondents; this has two mutually exclusive dummy variables; public school coded as 1, while private school is coded as 0. Other variables include scores in O'level, where five relevant credits passed for each respondent were rated on a scale as;

A1= 9

A2=8

B3=7

B4=6

D5=5

C6=4

The scales were added for each respondent, and serve as SSCE results score.

The population of this project work consists of all the 1,293 final year students of 2014/2015 academic session of TSU. Where, FAG = 45, FASS = 507, FED = 523 and FSC = 223. The sample size chosen is 150.

The selected programmes are represented in Table 1 while Table 2 shows the sample allocated to each faculty and programme.

Table 1. Code Used for Random sampling

FAG		FASS		FED		FSC	
CODE	Programme	CODE	Programme	CODE	Programme	Code	Programme
01	B.Agric	02	B.sc	07	B.Sc Ed.	05	B.sc Physics
	Agronomy		economics		Geography		
02	B.Agric.	05	B.sc	04	B.A Ed.	06	B.sc Statistics
	Agric.		Geography		English		
	Econs. & Ext.						
03	B.Agric.	07	B.A History	10	B.A Ed.	04	B.sc Mathematics
	Animal Science				Islamic Studies		

Table 2: Sample selected per Faculty (Stratum)

Stratum	N_h	W_h	$n_h = nW_h$	$n_h = n/L$
FASS	507	0.392	59	19
FED	523	0.404	60	20
FSC	223	0.172	26	9
FAG	45	0.034	5	2
TOTAL	1,293			50

2.1 METHOD OF DATA ANALYSIS

The collected data was analyzed using Regression and Correlation Analysis to answer the research questions. Where CGPA at 300L is the response variable (Y), and CGPA at 100 level, CGPA at 200 level, UTME scores, SSCE results, and secondary school type are the predictor variables (Xs).

2.1.1 REGRESSION ANALYSIS

Aru (1997) defines Regression analysis as a statistical method that describe the nature of the relationship between two or more variable expressed in a quantitative terms so that one variable can be predicted from other(s) and for instance the yield of a Yam farm may be determined by the amount of fertilizer applied and other factors. Therefore, in this study, Regression analysis was used to establish a model for predicting the graduation CGPA of the final year students.

The regression equation for multiple regression using the ordinary least square method in matrix form is given as;

$$Y = X\beta + \varepsilon \quad (2)$$

Where;

$$Y = \begin{pmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{pmatrix} \quad X = \begin{pmatrix} x_{11} & x_{21} & \cdots & x_{n1} \\ \vdots & \vdots & & \vdots \\ x_{1n} & x_{2n} & \cdots & x_{nn} \end{pmatrix} \quad \beta = \begin{pmatrix} \beta_1 \\ \beta_2 \\ \vdots \\ \beta_k \end{pmatrix} \quad \text{and} \quad \varepsilon = \begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \vdots \\ \varepsilon_k \end{pmatrix}$$

The least squares estimate of the parameters in matrix notation is given as;

$$\hat{\beta} = (x'x)^{-1} (x'y) \quad (3)$$

2.1.2 CORRELATION ANALYSIS

A correlation analysis was employed to investigate the relationship between the SSCE, UTME score, school type and the CGPA. There are various methods of finding the correlation coefficient, but for the sake of this study, the Pearson coefficient of correlation was used. And the Pearson's coefficient of correlation is given by:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]} \quad (4)$$

3. RESULTS AND DISCUSSION

The correlation results for the four faculties, as shown in Table 3, show that only CGPA at 100 level, CGPA at 200 level, and UTME score have a strong/positive perfect relationship with the CGPA at 300 level, while the two other factors (Secondary school type and O' level) have a weak/negative perfect relationship with the CGPA at 300 level. The results further show that the CGPA at 100 level and CGPA at 200 level correlate positively/strongly with performance in the third year of study of students in the faculties of Arts and Social Sciences, Faculty of Education, and Faculty of Sciences, and the data also shows that CGPA at 200 level and 300 level correlate positively/strongly with performance in the fourth year of study of study in the faculty of Agriculture. On the other hand, secondary school type, UTME score and O' level (SSCE) results correlated negatively/weakly with the CGPA at 100 level, CGPA at 200 level and CGPA at 300 level for the faculties of Arts and Social Sciences, Faculty of Education and Faculty of Sciences, and CGPA at 200 level, CGPA at 300 level and CGPA at 400 level for the faculty of Agriculture.

The model summary for the four faculties as shown in Table 5 shows that about 79.9 % of the variation in CGPA at 400 level is explained only by CGPA at 300 level and not by other variables like SSCE results, UTME scores, and secondary school type (entry requirements).

The ANOVA Table for the four faculties, as shown in Table 4, shows the best model to use in predicting the graduation CGPA, which has only CGPA at 200L as the only determining factor, so once it's known, the graduation CGPA can be predicted. The predictive model is given as:

$$Y = \beta_o + \beta_{1CGPA_{200L}} \quad (5)$$

The coefficients and excluded variables for the four faculties as shown in Table 7 show that when a stepwise regression analysis was carried out on the six variables, namely CGPA at 300L, CGPA at 200L, CGPA at 100L, secondary school type, UTME Score, and O' Level, During the analysis, it was discovered that only CGPA at 200L is significant in the model. All the other variables are not significant in the model. It can therefore be concluded that students' performance at the 200/300 level is the best predictor of their final CGPA (Graduating CGPA).

The Model for predicting the Graduation CGPA is given as;
CGPA Final L= 0.399 + 0.876 CGPA 200L/300L

Table 3. Correlation Analysis for the Four faculties

			CGPA 300L	AT CGPA 200L	AT CGPA AT 100L	SEC. SCH. TYPE	UTME SCORE	O' LEVEL
CGPA 300L	AT Pearson Correlation		1	.894**	.838**	.012	.136	.123
		Sig. (2- tailed)	.000	.000	.892	.125	.168	
		N	128	128	128	128	127	
CGPA 200L	AT Pearson Correlation		.894**	1	.923**	-.038	.185*	.138
		Sig. (2- tailed)	.000	.000	.674	.037	.122	
		N	128	128	128	128	127	
CGPA 100L	AT Pearson Correlation		.838**	.923**	1	-.069	.130	.102
		Sig. (2- tailed)	.000	.000	.436	.143	.254	
		N	128	128	128	128	127	
SEC. SCH. TYPE	Pearson Correlation		.012	-.038	-.069	1	.047	-.011
		Sig. (2- tailed)	.892	.674	.436	.597	.901	
		N	128	128	128	128	127	
UTME SCORE	Pearson Correlation		.136	.185*	.130	.047	1	.103
		Sig. (2- tailed)	.125	.037	.143	.597	.250	
		N	128	128	128	128	127	
O' LEVEL	Pearson Correlation		.123	.138	.102	-.011	.103	1
		Sig. (2- tailed)	.168	.122	.254	.901	.250	
		N	127	127	127	127	127	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 4. ANOVA Table for the four faculties

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	67.555	1	67.555	499.513	.000 ^a
	Residual	17.041	126	.135		
	Total	84.596	127			

a. Predictors: (Constant), CGPA AT 200L

1. Dependent Variable: CGPA AT 300L

Table 5. Model Summary for the four faculties

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.894 ^a	.799	.797	.36775

a. Predictors: (Constant), CGPA AT 200L

Table 6. Coefficients Values for the four faculties

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.399	.119		3.341	.001
CGPA AT 200L	.876	.039	.894	22.350	.000

Dependent Variable: CGPA AT 300L

Table 7. Excluded Variables for the four faculties

Model		Beta In	T	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	CGPA AT 100L	.092 ^a	.882	.379	.079	.148
	SEC. SCH. TYPE	.046 ^a	1.143	.255	.102	.999
	UTME SCORE	-.030 ^a	-.729	.467	-.065	.966
	O' LEVEL	.003 ^a	.067	.947	.006	.985

1. Predictors in the Model: (Constant), CGPA AT 200L
2. Dependent Variable: CGPA AT 300L

4.CONCLUSION

Based on the findings of the study, it can therefore be concluded that there is a significant relationship between CGPA's at lower levels and the current level and there is no significant relationship with secondary school type, UTME score and SSCE results; that CGPA at 200 level is the best predictor of predicting the graduation CGPA of the final year students of the faculty of Arts and Social Sciences, Faculty of Education and Faculty of Sciences; and CGPA at 300 level is the best predictor of predicting the graduation CGPA of the final year students of the faculty of Agriculture.

5. RECOMMENDATION

Based on the finding of this study the following recommendations were made:

- i. As far as undergraduate programs in Nigerian universities are concerned, there should be a focus on teaching and learning in early session courses, as early sessionsThe CGPA has a strong relationship with the current CGPA and could also be used to predict subsequent academic performance of students.
- ii. Much priority shouldn't be given to those with high UTME score and High Number of credits as UTME Score and Number of credits have weak/poor relationship with the students' academic performance while in university.
- iii. Since UTME scores are poor predictors of student academic performance, Taraba State University should be conducting a POST-UTME examination before giving admissions to students.
- iv. That performance at the O'levels has no positive correlation with graduating CGPA.

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