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Predictive Efficacy of Utme, Ist And Utme Plus on Degree Students' Cumulative Grade Points Average: A Case Study of College of Education, Agbor, Nigeria

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Abstract:

This study examined the predictive efficacy of UTME, IST (Institution Selection Test) and UTME PLUS on degree students' first year cumulative grade points average (CGPA) in the College of Education, Agbor. The study employed correlation and Ex-post facto designs. Ex-post facto was adopted since there was no manipulation of variables. 312 students from eight departments were randomly selected from 520 students that were admitted into degree programme of the College in 2012/2013 session. The students' data regarding their scores in UTME, IST, UTME PLUS and their first year CGPA were collected from the degree unit of the College. Using Multiple Regression Analysis, it was found that there was no significant relationship between students UTME scores and their first year CGPA ($F_{1, 312} = 0.520$; $p > 0.05$). It was also found that there was a significant but low relationship between students' scores in Institution Selection Test (IST) and their CGPA ($F_{1, 312} = 6.552$; $P < 0.05$) while the relationship between the students' scores in UTME PLUS and their CGPA was not significant ($F_{1, 312} = 2.646$; $P > 0.05$). It was recommended among others that the selection tests examined especially UTME be improved upon through proper content analysis and judicious monitoring and supervision in order to enhance their credibility.

Keywords: Predictive efficacy, Institution Selection Test, Cumulative grade points average

1. Introduction

The purpose of any test is to determine the quality that testees have that will help to make useful decision that will affect the people exposed to it. It is equally true that learning cannot be said to have been effective or its purpose achieved without ascertaining what the recipients have acquired over the given period they have been exposed to it. This again underscores the importance of school as a training institution where individuals are trained to obtain some qualifications either for the purpose of placement or employment as the case may be. Schools cannot be deemed to have realised such purpose without a measure of the performance of the individuals that have been so educated. It is the expectation of the government at any level that the means through which the quality of individuals trained in schools are determined can be reliably depended upon in making effective decision. Having this in mind, it can therefore be asked; how sound, how appropriate and how effective are these instruments that are used for ascertaining the quality of individuals who are selected or placed in institutions of higher learning? This question becomes relevant because if not well addressed, Nigeria as a country will continue to witness a problem of educational mismatch in terms of the quality of its citizens being admitted yearly into its tertiary institutions.

In Nigeria today, the West African Examination Council (WAEC) is in charge of conducting West African Secondary School Certificate Examination (WASSCE) while the National Examination Council (NECO) is saddled with the responsibility of conducting the Senior Secondary School Certificate Examination (SSSCE). Both WAEC and NECO examinations are for certification as well as for placement as without attainment of prerequisite relevant number of credits is tantamount to no admission into institution of higher learning in the country irrespective of score obtained in the United Tertiary Matriculation Examination (UTME).

The Joint Admission and Matriculation Board (JAMB) has the sole responsibility of conducting the Unified Tertiary Matriculation Examination (UTME). This examination is purposely for placement of individuals into higher institutions (University, Polytechnics and Colleges of Education). How effective are these public examinations in determining how students should learn if admitted into institutions of higher learning in the country has been a question in many educators' minds.

It should be recalled that there was a period of Independent Matriculation Examination in which each tertiary institution was conducting its selection examination that was used for admitting candidates who had relevant number of credits into higher institutions. During this epoch, candidates could apply to more than one higher institution for admission. During this period, some

candidates had multiple admissions while others that were not so lucky or brilliant had to retake the examinations as many times as they could in order to secure admission to higher institution. As a result of this problem, many gave up the ambition of pursuing university education. Added to this problem was the cost of the examination which was much on the candidates and their parents. In order to address the problems independent matriculation examination created, Joint Admission Matriculation Board (JAMB) was established by the Federal Government in 1978 in line with Degree (Act) No. 1 of 1978 which was amended by Degree (Act) NO 33 of 1989 (Nwana, 2007; JAMB, 2011). In 2010, the name of the Examination was changed to Unified Tertiary Matriculation Examination which was meant for admitting candidates into Universities, Polytechnics and Colleges of Education in the country.

Since the inception of the Unified Tertiary Matriculation Examination (UTME), cut-off-mark from the examination has been used for admission depending on the availability of space in each institution of higher learning in the country. Having obtained relevant five credits in other public examinations earlier mentioned, it is expected that higher scorers in UTME will equally perform well academically in the Universities. However, the efficacy of UTME in predicting future performances of students in the Universities has been in doubt by many scholars (Ogonor and Olubor, 2002; Kale, 2004; Salahdeen and Murtala, 2005; Ajala, 2010; and Uhumwuangho and Ogunbadeniya, 2014).

From the plethora of available Literature, Kale (2004) for instance, found that the best performances during the first year university examination were obtained by students with lower UTME scores. Obioma and Salau (2007) designed a study to investigate the relative efficiency of public examinations (i.e. UTME, WASSCE, SSCE and NBCE/NTCE) in predicting students performances in Nigerian Universities and found that out of the predictor variables considered, UTME was the weakest in prediction of students' grades in first year and final year grades in the universities. Salahdeen and Murtala (2005) found that UTME could not predict students' performances in medical school. Uhumwuangho and Ogunbadeniya (2004) investigated the predictive power of UTME scores on students' performance in post university matriculation examination and reported significant inverse correlation coefficient between the two variables indicating that those who scored high marks in UTME were scoring low marks in University Screen Test (UST).

It is interesting to note that contrary findings have been reported elsewhere. Ojirinde (2009) for instance, reported that there was a low, but significant relationship between students' UTME scores and their first year cumulative grade point average. Similarly, Igwue and Adikwu (2012) found significant relationship between UTME scores and students performance in Educational psychology course. They also reported a high significant correlation between Post UTME and students' performance in Educational psychology. It is pertinent to note that using a single course (ED102) in the university from multitude of courses and comparing its scores with UTME scores might not have yielded result capable of helping to explain the current trend in this matter as a single course does not validly determine ability of students. Hence the present study considered the students first year Cumulative Grade Points Average (CGPA) in the college which reflects all the courses done by the students.

Due to erosion of confidence the public and authorities of higher institutions have in public examinations, there have been agitation for alternative way of admitting candidates into Nigerian institutions of higher learning. This lack of trust has been occasioned by incessant examination malpractice that has eaten deep into the whims and fabrics of public examinations of which UTME is inclusive. The call for an alternative method of admitting students into the nation's tertiary institutions has led to granting each degree awarding institution the right to conduct screen test or selection test in addition to UTME for the purpose of admitting candidates into the universities. There have been question as whether this individual university screen test will ensure quality of students being admitted or for the purpose of enhancing the source of internally generated revenue (Ajala, 2010). A question that readily comes to mind is how appropriate or how potent are these selection or screen tests in predicting performances of students in the universities? There seem to be paucity of empirical evidence on the predictive power of institution selection test in determining performances of students. In fact, such empirical evidence is not available in the College of Education, Agbor to guide decision. This therefore suggests that this controversy surrounding admission into degree awarding institutions needs to be further investigated. It is this controversy that has prompted this study.

1.1. Purpose of the Study

The purpose of this study was to examine the effectiveness of the Unified Tertiary Matriculation Examination (UTME), Institution Selection Test (IST) and UTME PLUS in predicting students' first year Cumulative Grade Points Average in the College of Education, Agbor.

1.2. Conceptual Clarification

It is of paramount importance that some of the terms used in this study be clarified.

1.2.1. Predictive Validity

This is the extent to which test scores determine future performances. Predictive validity as observed by Kaplan and Saccuzzo (2005) is the existent to which test scores forecast future success. In this study, the scores of students in UTME, IST and UTME PLUS will be correlated with their first year cumulative Grade Points Average.

1.2.2. IST

This is the Institution Selection Test. There is a committee in the College mandated to set questions in General English and three other areas relevant to candidates' course of study in the college. As an affiliate programme, the questions were moderated by the Delta

State University, Abraka which is the parent University in order to ensure standard. In this study, the students' scores in the institution selection or screen test will be correlated with their first year cumulative grade points average to determine its predictive efficacy. Those who sat for IST were the candidates that scored 180 and above in the UTME in 2012.

1.2.3. UTME Plus

The UTME PLUS is the weighted scores of the Unified Tertiary Matriculation Examination and Institution Selection Test. It is the cut-off-mark from the weighted scores that the college used for admission. This weighted score is what most institutions called POST UTME score. In this study, the UTME PLUS was correlated with the student' first year cumulative grade points average (CGPA)

1.2.4. Cumulative Grade Point Average

(CGPA) This is the final grade a student obtained at the end of his first year in the College. This was calculated from the scores of first and second semesters' examinations. As stated by Stillwell, D' Alessandro and Reese (2005) and reported by Ojerinde (2009), first year cumulative grade points average stands for a composite score of the academic performance of a student after one year of his schooling. It is true that some of the courses taken might be easier than others coupled with the fact that some lecturers might be more lenient in scoring than others. Having this in mind, using the average of all grades received, the disparities in course grading and difficulty stringency tend to be at vanishing point. In this study, the criterion variable is the first year cumulative grade points average while UTME, IST and UTME PLUS are the predictor variables.

1.3. Research Questions

The following research questions have been posited to guide the study.

- i. What is the relationship between UTME scores of students and their first year CGPA in the college?
- ii. Is there relationship between the institution selection test scores of the students and their first year CGPA?
- iii. What is the relationship between students' scores in UTME PLUS and their first year CGPA in the college?

1.4. Hypotheses

Based on the above stipulated research questions, the following hypotheses have been postulated and tested at 0.05 level of significance.

- i. There is no significant relationship between students' UTME scores and their first year CGPA in the college
- ii. There is no significant relationship between students' scores in the Institutions Selection Test and their first year CGPA in the college.
- iii. There is no significant relationship between students' score in UTME PLUS and their first year CGPA in the college.

2. Method

2.1. Research Design

Correlation and ex-post facto designs were employed to investigate the relationship that occurs between students' achievement in the predictor variables of UTME, IST, UTME PLUS and their CGPA (criterion variable). Ex-post facto was adopted in the study as the researcher did not in any way manipulate the variables. The researcher just collected already existed data from the source without any manipulation.

2.2. Population

The population of the study consisted of the entire number of students admitted into the accredited degree programmes of the college in 2012/2013 session. A total of 520 students were admitted in the session above. They were divided into 8 departments which are Economics Education, Social Studies Education, Geography Education, English Education, Integrated Science Education, Physics Education, Chemistry Education and Agricultural Science Education.

2.3. The Sample

The study adopted a proportional stratified sampling method. 60% of the students' population in each department was randomly selected to be included in the study. This gave a total of 312 students that were randomly sampled from the population of the first year degree students' of 2012/2013 session. Data from this sample were collected for analysis in this study.

2.4. Research Instrument

Two sets of instruments were used in this study. The first set contained the scores of the students in UTME, IST and UTME PLUS. The cut-off mark for admission was based on the UTME PLUS. The second set of the instruments contained the students' first year cumulative grade points average (CGPA) of 2012/2013 session. These instruments were domiciled in the degree unit of the College.

2.5. Data Collection

The scores of the students in the UTME, IST and UTME PLUS and their first year CGPA of 2012/2013 were collected from the degree unit of the College.

2.6. Data Analysis

The collected data were properly coded and analyzed using multiple regression analysis. The hypotheses were tested at 0.05 level of significance.

3. Results and Discussion

- Hypothesis One: It was hypothesized that there would be no significant relationship between students' UTME scores and their first year CGPA in the College. The summary of results is presented in tables 1 and 2.

Model	Sum of Square	Df	Mean Square	F	Significance
Regression	0.263	1	0.263	0.520	0.471
Residual	157.045	311	0.505		
Total	157.308	312			

Table 1: ANOVA of Regression for UTME scores as predictor of first year CGPA
 $R = 0.041$; $R \text{ square} = 0.002$

Model	Standardized coefficient (Beta)	T	Significance
Constant		8.720	0.000
UTME	-0.041	-0.721	0.471

Table 2: Regression Coefficients

Table 1 reveals that there was no significant relationship between students' UTME first year CGPA as $F_{1, 312} = 0.520$; $P > 0.05$. This is as result of the fact that the calculated F value of 0.520 can only be significant at 47% while the accepted probability level as indicated in this study is 5%. This is supported by a low Beta value of -0.04 as shown in table 2. It has also been revealed in table 1 that UTME accounted for only 0.2% of the total variance in the students' performance in the dependent variable (i.e based on the R^2 value). This finding implies that scores in UTME could not determine the performance of the students in the institution. This finding may be as a result of the fact that the tasks in UTME did not clearly reflect the actual skills and competencies that the institution emphasized in the first year of the students learning. Another factor that might have accounted for this inability of UTME to predict the first year CGPA of the students is the disparity in examination environment in which the UTME is a public examination that is often affected by examination malpractice in some centres while the institution examinations are usually invigilated better by lecturers in the institution who are to ensure quality of their products. The finding of no significant relationship between the students UTME scores and their first year CGPA was found to be consistent with the finding of Salahdeen and Murtala (2005) who reported that UTME could not determine students' performance in medical school while it contradicts that of Igwue and Adikwu (2012) who found significant high correlation coefficient between students scores in UTME and their performance in a single course (Ed 102).

- Hypothesis 2: It was stipulated that there would be no significant relationship between the Institution selection test (IST) scores of the students and their first year CGPA in the College. This hypothesis was tested using the data in Tables 3 and 4.

Model	Sum of Square	Df	Mean Square	F	Significance
Regression	3.246	1	3.246	6.552	0.011
Residual	154.062	311	0.495		
Total	157.308	312			

Table 3: ANOVA of Regression for IST scores as predictor of first year CGPA
 $R = 0.144$; $R \text{ square} = 0.021$

Model	Standardized coefficient (Beta)	T	Significance
Constant		12.585	000
Institution selection Test (IST)	0.144	2.560	0.011

Table 4: Regression Coefficients

Table 3 indicates that there was a significant relationship between Institution Selection Test (IST) scores of the students and their first year CGPA as $F_{1, 312} = 6.552$; $P < 0.05$. Table 4 shows that the Institution Selection Test (IST) has a predictive strength of 0.144 as shown by the Beta value. Furthermore, the Institution Selection Test (IST) has contributed 2.1% of the total variance in the students' performance in the criterion variable as shown by R^2 in table 3. This finding is not surprising as this selection Test might have been administered under a better supervised environment devoid of examination malpractice unlike that of UTME which is a public examination where some of the students might have obtained their scores from miracle centres. (i.e centres where large scale examination malpractice was encouraged). A further explanation is that the Institution Selection Test (IST) seems to have significantly focused on the skills and competencies emphasized by the college.

- Hypothesis 3: It was stated that there would be no significant relationship between scores of students in UTME PLUS and their first year CGPA in the College. Summary of data analysis for testing this hypothesis is presented in tables 5 and 6.

Model	Sum of Square	Df	Mean of Square	F	Significance
Regression	1.327	1	1.327	2.646	0.105
Residual	155.981	311	0.502		
Total	157.308	312			

Table 5: ANOVA of Regression for UTME PLUS as Predictor of First Year CGPA
 $R = 0.092$; $R \text{ Square } (R^2) = 0.008$

Model	Standardized coefficient (Beta)	T	Significance
Constant		6.628	0.000
UTME PLUS	0.092	1.627	0.105

Table 6: Regression Coefficient

It is evident in table 5 that there was no significant relationship between scores of students in UTME PLUS and their first year grade point average (CGPA) as $F_{1, 312} = 2.646$; $P > 0.05$. This was supported by a low Beta value of 0.092 as seen in table 6. Table 5 further shows that UTME PLUS accounted for only 0.8% of the total variance in the performance of the students in the dependent variable ($R^2 = 0.008$). It is pertinent to recall that UTME PLUS is the weighted scores of UTME and Institution Selection Test (IST). The performance of the students in UTME as reported earlier on was not statistically significantly related to their first year CGPA and its combination with the institution selection test did not equally determine the performance of the students. It has even weakened the predictive power of the institution selection test. This finding is worrisome as cut-off mark in this UTME PLUS is used for admitting students into the college. It therefore requires that a lot of work needs to be done on UTME in terms of blocking the loopholes of examination malpractice through effective supervision and monitoring before its scores can be combined with that of institution screen test scores for the purpose of admission. This finding contradicts that of Igwe and Adikwu (2012) who reported a significant relationship between Post UTME scores of students and their performance in 100 level Educational Psychology.

4. Conclusion and Recommendations

The result from this study has revealed that there was no significant relationship between students' scores in UTME and their first year cumulative grade points average (CGPA) in the college. It is evident in the study that there was significant relationship between students' scores in the Institution Selection Test (IST) and their first year CGPA. However, the resulting Beta value of 0.144 shows that the relationship is low. Evidently, the relationship between students' UTME PLUS scores and their first year CGPA was not statistically significant.

Based on the above findings, it is therefore recommended that;

- UTME which is a national examination meant to ensure standard and quality of students being admitted into the nation's tertiary institutions should live up to its responsibility by making sure that the issue of examination malpractice is drastically wept out through a better supervision and effective monitoring. This is expedient in order to enhance the creditability of its results.
- There is urgent need for Joint Admission Matriculation Board (JAMB) which is the body responsible for conducting UTME to judiciously carry out content analysis of the UTME with a view to ensuring that the examination reflects the skills and competencies required in tertiary institutions.
- The use of Institution Selection Test (IST) in the college is a welcome development, but its content is to be improved upon to reflect the skills emphasized by the college.

Furthermore, the college should uphold its integrity by making sure that all its examinations are administered under an atmosphere that does not compromise the standard of the institution.

Future studies should focus beyond first year cumulative grade points average especially now that UTME is a Computer Based Test (CBT).

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