

## **Post Unified Tertiary Matriculation Examination As Predictor Of Students' Final Degree Results**

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**Abstract:** *The study investigated how the Post Unified Tertiary Matriculation Examination (PUTME) predicts students' final degree results using Michael Okpara University of Agriculture, Umudike, Abia State as a case study. The study adopted the descriptive and correlational research design using a sample of 389 students from five departments gotten through cluster and purposive sampling techniques. Data for the study was gotten through the use of archival information, which were subsequently analyzed using simple linear regression coefficient for the research questions and ANOVA associated with linear regression for the hypotheses. Result revealed that with the exception of students in microbiology, PUTME was a poor predictor of students' final academic performance in the other four departments investigated. It was therefore recommended that students should be admitted through various methods such as departmental interview and only those who are meritorious should be given admission as against the use of catchment area and educationally less developed states.*

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### **I. Introduction**

The cry for the fallen standard of education in Nigeria has assumed a worrisome trend. Graduates from Nigerian institutions are not employed abroad, unless they undergo another sets of rigorous qualifying examinations. Before even accepted for advanced trainings, they must provide practical evidence not tied to their university certification. This has not only brought international reproach, but also capital flight due to payment of huge amount for fees. This has been chiefly attributed to the poor standard of education especially at the tertiary level. In line with this, Alli (2011) noted.

The highest ranked Nigerian University, the University of Ilorin was in 55<sup>th</sup> position in Africa and 5846<sup>th</sup> Position among 8000 Universities featured in the world ranking. The Obafemi Awolowo University which used to be rated as the second best in Africa in the 1980s had dropped to the 61<sup>st</sup>.

The question that readily comes to mind is: does this deteriorating ranking of Nigerian Universities have anything to do with how candidates are examined and admitted to the Universities? If rankings such as this is anything to go by, it therefore suggests that the inability of our universities to produce quality graduates will have a profound negative impact on the society. Among such negative impacts are; lack of interest in pursuing university education, increase in the number of school dropouts, cultism, prostitution, upsurge in crime wave, etc.

It is in view of these ugly trends, the first place to address this matter is to ensure that the criteria for admission into higher institutions generally and universities particularly is valid and reliable. This can be seen as the basis for the regular review of entry requirements into universities by relevant stakeholders, which led to the introduction of the Post Unified Tertiary Matriculation Examination (PUTME). However, debates still abound on the validity, or efficacy of the PUTME in determining the academic achievement of students. It was therefore this concern that informed the current study which seeks to investigate the extent to which the PUTME scores/results of 2009/2010 students of Michael Okpara University of Agriculture, Umudike, predict their final degree examination results.

The Post UTME is the final matriculation examination taken by candidates seeking admissions into tertiary schools in Nigeria, with the first being the Unified Tertiary Matriculation Examination (UTME). After the UTME, those who met the official cut-off mark are required to take Post UTME before they are considered for admission. The Unified Tertiary Matriculation Examination is organized centrally by the Joint Admission and Matriculation Board (JAMB), after which the list of students above minimum requirement is forwards to universities of their choice, who then establish benchmark for different courses

Michael Okpara University of Agriculture, Umudike, Abia State is one of the Federal Universities in Nigeria. As a degree awarding institution, it is mandate to establish their own cut-off mark. Candidates who meet the cut off mark for their choice school are eligible to obtain the PUTME form and take the examination.

The performance of students for each academic session and department varies, as such the cut-off mark for each session and department varies too.

In Michael Okpara University of Agriculture, Umudike, admission is given based on 50% of JAMB score plus 50% of Post UTME score. For the 2009/2010 academic year, admission was given based on 40% of combined JAMB and POST UTME score. The criteria for the admission are coded:

- 1 = Merit
- 2 = Catchment
- 3 = Less advantaged state.

Despite the introduction of PUTME in tertiary institutions, some researchers have identified low prediction of joint matriculation examination. Such writers as Nwana (1981) who carried out a commissioned investigation for the Joint Matriculation Examination on the predictive validity of four federal Universities, concluded that the low correlation coefficient obtained indicated that JAMB has not been a good predictor of future academic success. This view was supported by Ejimofor&Apeh (2011), and Emaikwu (2015). They obtained that selection tests have no statistically significant predictive validity on the final performance of students in their degree programme. Kolawale, Ala&Olatunji (2014) saw a high predictive validity for some entrance examinations.

The present study grew out of the need to find out if PUTME can provide information/result than its predecessor, JAMB. The problems associated with the central method of JAMB in given admissions informed the introduction of PUTME. Based on the objectives of establishing PUTME, has it ensured quality and academic achievements of graduates produced by Nigerian Universities? Has it ensured adequate preparation of students for University education? As a filter, has it been able to ensure that only quality candidates are selected for University education in our tertiary institution? Since the Post UTME affects the administration of Universities and allied institutions in our country, to what extent can it predict the CGPA of Students?

As used in this study, the Grade Point Average (GPA) is calculated by summing the products of the grade point and credit hours for each course and then dividing the result with the total credit hours in a semester. Therefore, the Cumulative Grade Point Average (CGPA) is the product of the grade point and credit hours for each course taken in the current and all previous semesters divided by the total number of credit hours taken in the current and all previous semesters. The cumulative grade point average is the degree result. It is in line with this that the current study seeks to determine if the PUTME has succeeded in providing better predictive validity on the academic performance of students than its predecessor, JAMB. This was done by predicting the PUTME scores of 2009/2010 students of Michael Okpara University of Agriculture, Umudike with their final degree results to ascertain their academic performance.

#### **Statement of Problem**

Observations and reports from employers of labour revealed that a high percentage of graduates from Nigerian tertiary institutions lack basic functional skills and this has generated concerns for all stakeholders in education industry. It was the former governor of the Central Bank of Nigeria (CBN), Professor Chukwuma Soludo who once hinted that "Nigerian graduates are not employable". The cumulative effect of low quality graduates being produced by many Universities can be traceable to various sources including the mode of entrance into the universities, infrastructural decay, lack of or inadequate instructional facilities etc. In addition, there is the general misconception that the PUTME screening examination is an avenue for fund raising programme for most Universities, giving the steadily increasing administrative charges of conducting the examination coupled with the power play politics in the admission process in most Universities through the process.

If the test is a true test of students' abilities, it is expected that those scoring high grades in the PUTME would be able to perform brilliantly well during the undergraduate training programme which will invariably affect their final cumulative grade point average. The discriminating power of a test could be seen as ability of that test to discriminate impartially, objectively and honestly (the intellectual ability of individual). In a situation where the contrary happens, it only raises probing questions as to why? And how? Therefore, this study is investigating whether PUTME scores of students as an entry point can predict the future success of those students.

## **II. Research Questions**

1. What is the relationship between Post UTME scores/results of student in Agricultural Economics with their CGPA?
2. What is the relationship between Post UTME Scores/Results of students in Mechanical Engineering with their CGPA?
3. What is the relationship between Post UTME Scores/results of students in Agribusiness with their CGPA?
4. What is the relationship between Post UTME Scores/Results of students in Microbiology with their CGPA?

5. What is the relationship between Post UTME scores/Results of students in Animal production with their CGPA?

**Hypotheses**

- i. There is no significant relationship between Post UTME scores/results of students in Agricultural Economics with their CGPA.
- ii. There is no significant relationship between Post UTME scores/results of students in Mechanical Engineering with their CGPA.
- iii. There is no significant relationship between Post UTME scores/results of students in Agribusiness with their CGPA.
- iv. There is no significant relationship between Post UTME scores/results of students in Microbiology with their CGPA.
- v. There is no significant relationship between Post UTME scores/results of students in Animal Production with their CGPA.

**Methodology**

The study adopted the ex-post facto and correlational designs. Ex-post facto design, also called causal-comparative design, was used because the data were already in place without the researcher manipulating any of them. Furthermore the correlation research design was used because the predictive power of PUTME on the final CGPA of students was investigated. The population of this study was all the students who were admitted to the Bachelor of Science degree programme through Post Unified tertiary matriculation Examination in 2009/2010 academic session and who successfully completed their degree programme in 2013/2014. A sample of 389 students gotten through the cluster and purposive sampling techniques was used. Firstly, five faculties were randomly selected from the 12 faculties in the school. Thereafter, the department with the largest number of students who took PUTME during the 2009/2010 academic session and completed their degree programme in 2013/2014 were used for the study. These departments were Agricultural Economics, Mechanical Engineering, Agricbusiness, Microbiology, and Animal Production. Archival information on students PUTME performance and their respective CGPA were collected after permission was received from the university authority. The simple linear regression was used to answer the research questions, while ANOVA associated with linear regression was used for testing the corresponding null hypotheses.

**III. Results Presentation**

**Table 1: Result of the Relationship between Post UTME Scores and CGPA of Students in Agricultural Economics.**

Model Summary and Parameter Estimates							
Dependent Variable: CGPA							
Equation	Model Summary					Parameter Estimates	
	R <sup>2</sup>	F	df1	df2	Sig	Constant	b1
Linear	0.012	0.439	1	35	0.512	2.957	0.009
Independent Variable: Post UTME							

A simple linear regression as shown in Table 1 was conducted to predict CGPA of students in Agricultural Economics based on their Post UTME scores. A non-significant regression equation was found with  $F(1, 35) = 0.512, p > 0.05$ . This suggest that the final CGPA of students in Agricultural Economic Department cannot be statistically predicted from their Post UTME score. Furthermore, with an  $R^2$  of 0.012, it therefore means that only 1.2% variation of CGPA can be predicted by Post UTME scores. Therefore the regression coefficient can be written as follows  $CGPA = 2.957 + 0.009(\text{Post UTME})$ . Thus the null hypotheses was rejected.

**Table 2: Regression Result of the Relationship between Post UTME Scores and CGPA of Students in Mechanical Engineering.**

Model Summary and Parameter Estimates							
Dependent Variable: CGPA							
Equation	Model Summary					Parameter Estimates	
	R <sup>2</sup>	F	df1	df2	Sig	Constant	b1
Linear	0.010	0.350	1	36	0.558	2456	0.011
Independent Variable: Post UTME							

As shown in table 2, a linear regression coefficient was conducted to predict CGPA of students in mechanical engineering based on their Post UTME scores. A non-significant regression equation was found with  $F(1, 36) = 0.350, p > 0.05$ . This suggest that the final CGPA of students in Mechanical Engineering Department cannot be statistically predicted from their Post UTME score. Furthermore, with an  $R^2$  of 0.010, it

therefore means that only 1.0% variation of their CGPA can be predicted by their Post UTME scores. From the unstandardized coefficient, the regression equation of the students can be stated thus  $CGPA = 2.456 + 0.011$  (Post UTME). Thus the null hypotheses was rejected.

**Table 3: Regression Result of the Relationship between Post UTME Scores and CGPA of Students in Agricultural Business.**

Model Summary and Parameter Estimates							
Dependent Variable: CGPA							
Equation	Model Summary					Parameter Estimates	
	R <sup>2</sup>	F	Df1	DF2	Sig	Constant	b1
Linear	0.000	0.007	1	37	0.935	2.656	-0.002
Independent Variable: Post UTME							

A simple linear regression as shown in table 3 was conducted to predict CGPA of students in Agricultural Business from their Post UTME result. A non-significant regression equation was found with  $F(1, 37) = 0.007, p > 0.05$ . This suggest that the final CGPA of students in Agricultural Business Department cannot be statistically predicted from their Post UTME score. Furthermore, with an  $R^2$  of 0.000, it therefore means that Post UTME scores does not have any prediction on students CGPA in the Department of Agricultural Business. Therefore the regression coefficient can be written as follows  $CGPA = 2.656 + -0.002$  (Post UTME). Thus the null hypotheses was rejected.

**Table 4: Regression Result of the Relationship between Post UTME Scores and CGPA of Students in Microbiology.**

Model Summary and Parameter Estimates							
Dependent Variable: CGPA							
Equation	Model Summary					Parameter Estimates	
	R <sup>2</sup>	F	df1	df2	Sig	Constant	b1
Linear	0.193	4.439	1	19	0.046	6.501	-0.069
Independent Variable: Post UTME							

A simple linear regression as shown in table 4 was conducted to predict CGPA of students in Microbiology based on their Post UTME scores. A significant regression equation was found with  $F(1, 19) = 4.439, p < 0.05$ . This suggest that the final CGPA of students in Microbiology Department can be statistically predicted from their Post UTME score. Furthermore, with an  $R^2$  of 0.193, it therefore means that only 19.3% variation of students in Microbiology CGPA can be predicted by Post UTME scores. Therefore the regression equation can be written as follows  $CGPA = 6.501 + -0.069$  (Post UTME). Thus the null hypotheses was therefore accepted.

**Table 5: Result of the Relationship between Post UTME Scores and CGPA of Students in Animal Production**

Model Summary and Parameter Estimates							
Dependent Variable: CGPA							
Equation	Model Summary					Parameter Estimates	
	R <sup>2</sup>	F	df1	df2	Sig	Constant	b1
Linear	0.032	0.367	1	12	0.557	2.665	0.011
Independent Variable: Post UTME							

A simple linear regression as shown in table 5 was conducted to predict CGPA of students in Animal Production from their Post UTME scores/results. A non-significant regression equation was found with  $F(1, 12) = 0.367, p > 0.05$ . This suggest that the final CGPA of students in Animal Production Department cannot be statistically predicted from their Post UTME score. Furthermore, with an  $R^2$  of 0.032, it therefore means that only 3.2% variation of CGPA can be predicted from their Post UTME scores. Therefore the regression coefficient can be written as follows  $CGPA = 2.665 + 0.011$  (Post UTME).

#### IV. Summary of Results

The result obtained from the analysis of data were summarized below:

1. Post UTME scores of students in Agricultural economics poorly predicts only 1.2% variation of their CGPA, which was found to be statistically insignificant at 0.05 level of significance.
2. Post UTME scores of students in Mechanical Engineering poorly predicts only 1.0% variation of their CGPA, which was found to be statistically insignificant at 0.05 level of significance.
3. Post UTME scores of students in Agricultural Business does not have any prediction on their CGPA, which was found to be statistically insignificant at 0.05 level of significance.

4. Post UTME scores of students in Microbiology moderately predicts 19.3% variation of their CGPA, which was found to be statistically significant at 0.05 level of significance.
5. Post UTME scores of students in Animal Production poorly predicts only 3.2% variation of their CGPA, which was found to be statistically insignificant at 0.05 level of significance.

## **V. Discussion of Result**

### **Post UTME and Students CGPA in Agricultural Economics**

The result obtained from the study revealed that for students in the Department of Agricultural Economics, Post UTME score only accounts for 1.2% variation in their CGPA. The remaining 98.8% variation in students CGPA are accountable by other factors outside the scope of this study. This implies that Post UTME score have a poor predictive effect on their academic achievement as assessed by their CGPA. The result as shown in Table 1 also revealed that the calculated F value was insignificant compared to the chosen level of significance (0.05). This indicates that Post UTME scores do not significantly predict the CGPA of students in this department.

This result may have been possible because students seldom choose the discipline of Agricultural Economic as their first choice and most students in this department were transferred from other department of their choice. As such they often do not give their best in their performance in schools.

The result obtained here is similar to that of Kolawale, et al., (2014) who discovered that selection tests had no statistically significant predictive validity with the final result of students. Also, Nwana (1981) also found out that the Joint Matriculation Examination was not a good predictor for students' performance in the Universities. Furthermore, Emaikwu (2015) also discovered a low relationship between UTME and Post UTME of students in Benue State College of Agriculture Markudi.

Conversely, Adeyemi (2008) found that among students in Ondo State of Nigeria, Junior Secondary School Examination (JSCE) was a good predictor of students' academic performance at the Senior Secondary School Examination (SSCE). The difference in the obtained result could be because Adeyemi (2008) used students within the same secondary level of education, while the present study utilized students score from different level of education (secondary and tertiary)

### **Post UTME and Students CGPA in Mechanical Engineering**

The result obtained from the study revealed that for students in the Department of Mechanical Engineering, Post UTME score only accounts for 1% variation in their CGPA. The remaining 99% variation in students CGPA are accountable by other factors outside the scope of this study such as class attendance, study habit, parental socioeconomic status etc. This implies that Post UTME score have a poor predictive effect on their academic achievement as assessed by their CGPA. The result as shown in Table 2 also revealed that the calculated F value was insignificant compared to the chosen level of significance (0.05). This indicates that Post UTME scores do not significantly predict the CGPA of students in the department of Mechanical Engineering.

Some possible factors that could be responsible for this low prediction of Post UTME on students CGPA includes that most students who were high achievers in their secondary school become nonchalant towards their studies due to the freedom that comes with their university environment. In addition, students have been observed to engage in examination malpractice just to gain admission into tertiary institutions at all cost and thereafter become indifferent towards academic matters.

This result is similar to that This result is in consonant with the findings of Obioma and Salau (2007) who observed a poor correlation among public examinations and students' performance in examination. Orluwene (2012) and Kpolovie (2010) also observed that both internal factors and external factors can affect the reliability and validity of a test.

Conversely, the result is in disagreement with the findings of Igue and Adikwu (2012) who obtained a positive and high relationship result among UME, Post UTME and 100 level scores of 2009/2010 students in College of Agriculture and Science Education in University of Agriculture, Makurdi.

### **Post UTME and Students CGPA in Agricultural Business**

The result obtained from the study revealed that for students in the Department of Agricultural Business, Post UTME score does not account for any variation in their CGPA. This suggest that variations in students' CGPA was attributable to other factors outside the present study such as family background, examination conditions, study habit, motivation learning style etc. This implies that Post UTME score have a no predictive effect on academic achievement of students in the Depart of Agricultural Business as assessed by their CGPA. The result as shown in table 3 also revealed that the calculated F value was insignificant compared to the chosen level of significance (0.05). This indicates that Post UTME scores do not significantly predict the CGPA of students in Department of Agricultural Economics. The result obtained here is similar to that of Kolawaleet al (2014) who discovered that selection tests had no statistically significant predictive validity with

the final result of students. Also, Nwana (1981) also found out that the Joint Matriculation Examination was not a good predictor for students' performance in the Universities. Furthermore, Emaikwu (2015) also discovered a low relationship between UTME and Post UTME of students in Benue State College of Agriculture Markudi.

Conversely, Adeyemi (2008) found that among students in Ondo State of Nigeria, Junior Secondary School Examination (JSCE) was a good predictor of students' academic performance at the Senior Secondary School Examination (SSCE).

#### **Post UTME and Students CGPA in Microbiology**

The result obtained from the study revealed that for students in the Department of Microbiology, Post UTME score accounted for 19.3% variation in their CGPA. The remaining 80.7% variation in students CGPA are accountable by other factors beyond the scope of this study. This implies that Post UTME score have a moderative predictive effect on their academic achievement as assessed by their CGPA. The result as shown in Table 4 also revealed that the calculated F value was significant compared to the chosen level of significance (0.05). This indicates that Post UTME scores significantly predict the CGPA of students in the Department of Microbiology.

This result was expected and not surprising to this researcher because it is this researcher belief that most students Post UTME as a form of aptitude test should be able identify students who would perform well and those who cannot. The result from this study is similar to that obtained by Adeyemi (2008) who found out that among secondary school students in Ondo State, JSCE significantly predict their performance in the SSCE. Also Igue and Adikwu (2012) obtained a positive and high relationship among UME, Post UTME and 100 level scores of 2009/2010 students in College of Agriculture and Science Education in University of Agriculture, Makurdi. Conversely, the result of Nwana (1981) found out that the Joint Matriculation Examination was not a good predictor for students' performance in the Universities. Furthermore, Emaikwu (2015) also discovered a low relationship between UTME and Post UTME of students in Benue State College of Agriculture Markudi.

#### **Post UTME and Students CGPA in Animal Production**

The result obtained from the study revealed that for students in the Department of Animal Production, Post UTME score only accounts for 3.2% variation in their CGPA. The remaining 98.8% variation in students CGPA are accountable by other factors outside the scope of this study. This implies that Post UTME score have a poor predictive effect on their academic achievement as assessed by their CGPA. The result as shown in table 5 also revealed that the calculated F value was insignificant compared to the chosen level of significance (0.05). This indicates that Post UTME scores do not significantly predict the CGPA of students in this department.

Some possible factors that could account for this result include the fact that students seldom choose the discipline of Animal Production as their first choice and most students in this department were rejected from other department of their choice. As such they often do not give their best in their performance in schools. The result obtained here is similar to that of Kolawale, et al., (2014) who discovered that selection tests had no statistically significant predictive validity with the final result of students. Also, Nwana (1981) also found out that the Joint Matriculation Examination was not a good predictor for students' performance in the Universities. Furthermore, Emaikwu (2015) also discovered a low relationship between UTME and Post UTME of students in Benue State College of Agriculture Markudi.

Conversely, Adeyemi (2008) found that among students in Ondo State of Nigeria, Junior Secondary School Examination (JSCE) was a good predictor of students' academic performance at the Senior Secondary School Examination (SSCE). The difference in the obtained result could be because Adeyemi (2008) used students within the same secondary level of education, while the present study utilized students score from different level of education (secondary and tertiary).

#### **Recommendations**

From the result obtained, the following recommendations were made

1. Post-UTME screening should include both objective and essay questions so as to determine the ability of candidates in both areas. This will help reduce guessing or copying from others.
2. Candidates for Post UTME should be thoroughly invigilated and supervised before and during the examination to further reduce examination malpractice.
3. Merit should be the only criteria for the admission of students, as this is likely to reduce the incidence of admitting students who are not educationally qualified for tertiary education
4. Employment of lecturers should be on merit, so that only those who can deliver are given appointment in the apex of teaching profession.

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