

## **Predictive Validity of UTME and Post-UTME Scores on first Year Students' Performance in four Departments in University of Abuja**

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### **ABSTRACT**

*Unified Tertiary Matriculation Examination (UTME) conducted by Joint Admission and Matriculation Board (JAMB) and Post Unified Tertiary Matriculation Examinations (POST-UTME) conducted by individual Universities in the country are two examinations that every candidate seeking admission into public and private Universities must have been considered by these bodies to have obtained the cut-off points to be offered admissions. However, their predictive validity as the bases for success in the University examinations has raised great concern. The study examined the extent students' successes in these examinations could serve as predictor of their performance in the first year final departmental examinations in the university. The study adopted ex-post facto research design. Twelve thousand, five hundred and forty three first year undergraduates constituted the population for the study drawn from: English, Economics, Education and Accounting departments of the University of Abuja in 2008/9 – 2010/11 academic sessions. Samples of 720 students were selected for the study through purposive sampling technique with 180 students from each of the 4 departments. Two research questions were raised to prosecute the study. Pearson Product Moment Correlation Coefficient was used to answer the research questions. The results revealed that the correlation coefficients were low/ negative relationship between UTME and CGPA for first year final examination performance in the four departments. However, the Post UTME and first year examination for the four departments revealed that correlations coefficient between PUTME and CGPA for the four departments were negative/low, positive/low and positive/ moderate coefficients. It was recommended from the findings that using the students' performance in these two examinations for university admissions should be reviewed by stakeholders in education sector.*

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**Key Words:** Predictive, Validity, UTME, Post-UTME, Scores, First Year, Performance, University

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### **Introduction**

Education is a progressive development of knowledge and skills of examinees

through stages of teaching and learning at various levels. Thus, taxonomy of education recognizes the progressive stages from the lower to the higher level of learning in cognitive, affective and psychomotor domain. Therefore, a candidates' success at ones' stage should be an indicator and a pointer to the next level's success. In Nigeria, candidates' performance in public examinations and their predictive validity in subsequent performance in another stage or level of education have left many in serious doubt over the abysmal performance of the high scorers in these examinations at the next level of education (Ejikeonye, 2004). This has elicited diverse reactions and concerns to the dependency and continuous use of successes at these examinations as basis for major academic decisions and criteria for admissions into University educations in the country. Inferably, this dilemma is yet to be tackled headlong as to finding a solution and lasting issue to solving it.

Predictive validity is considered as the extent to which a score on a scale or test predicts scores on some criterion measure. Afolabi (2012) described predictive validity as the degree of correlation between the scores on a test and some other measures that the test is designed to predict. Similarly, Faleye (2015) believed that predictive validity is the extent to which a test could accurately forecast the extent to which a person would perform in a future related activity. Most educational and employment tests are used to predict future performance, so, predictive validity is regarded as essential in these fields. Studies on predictive validity usually take the criterion scores, and compare them with the predictor scores in similar subjects. A high correlation indicates that the selection procedure worked perfectly, a low correlation signifies that there is something wrong with the approach.

According to Faleye (2015), when predictive validity is being mentioned the issue with which an examination could accurately forecast candidates' future performance in related tasks is envisaged. In Nigeria, candidates are selected into the higher institution on the basis of their scores in the Unified Tertiary Matriculation Examination (UTME) as well as Post- Unified Tertiary Matriculation Examination (PUTME) results. The underlying assumption in such selection is that meeting the admission criterion by those admitted suggests that they will be successful in the subsequent academic activities attached to their studies.

Ogedengbe (2000) discovered that candidates admitted into Nigerian Universities through JAMB/UTME, many of which credited with high scores such as 260, 270 were being asked to withdraw due to intolerable poor academic performance. This however, has prompted some serious reactions and underlying issues such as creating of special examination centres for public examinations for candidates who are able to meet conditions attached. Furthermore, the private schools proprietors and lesson centres facilitators abate examination malpractice or cheating to favour high bidders' candidates. The school principals and public examination officials had been found to be involved in monetary inducement as a means to cheat and promote malpractice to award high marks. All these have undermined the candidates' independent ability in future examinations (Eboakoke, 2008, Okoye, 2009).

Kale (2004) reported that the best performance at the first year university examination was achieved by students with lower UME/UTME scores. Besides, Bamgboye, Ogunnowo, Badru, and Adewoye (2001), Salahdeen and Murtala, (2005) observed that UME scores had no correlation with performance in the medical school. Many have expressed doubt as to the efficacy of using UME/UTME scores as the major criterion for admission (Bamgboye et al, 2001; Salahdeen & Murtala, 2005). But, Obioma and Salau (2007) from a study on the predictive validity of public examinations in Nigeria concluded that public examinations were not good predictors of students' performance in the higher institutions in the country. They stated that the conduct of additional entrance examinations in the higher institutions exemplified their finding.

In the same vein, Adeniyi, Araoye, Amali, Eru, Ojabo and Alao (2010) found no

correlation between UME scores and 100 level results of medical school. This has been a regular observable process in admitting candidates into universities in Nigeria through UME. Igwue and Adikwu (2012) in a study on measurement of intellectual functioning of Nigerian youth: the predictive validity of JAMB/UME in relation to students' performance in University, stressed the need for examination conducted by JAMB/UME, to seek at identifying the learner's intellectual functioning and potential for higher education. The researchers questioned the extent to which this examination identify learners' intellectual functioning and potentials for higher education, and accurately predicts how the candidates, if admitted would perform in the University.

Studies have shown that many students who gained admission into Universities with high marks in UME were unable to cope with the University education. A study by Abdullahi (1993 cited in Faleye, 2015) observed a relationship between performance in Joint Matriculation Examination (JME) and performance during the first year examination in the University of Ilorin., using 50 Social Science students admitted into Physics, Chemistry and Economics programmes of the University. Their JME and first year examination scores were compared and a significant positive relationship between JME scores and first-year university examination scores indicated high scores in JME also obtained high scores in university's undergraduate examinations. However, JME and University examination did not show any significant correlation in Geography and Biology. The study concluded that JME could only predict first-year university performance, but not in all disciplines in the University.

In contrast, Faleye (2015) investigated the relationship between students' performance in entry examination and students' mathematics performance in College of Education (CoE). Sample of 276 CoE students were purposively selected for the study. Data were collected from their semester results in Mathematics in 2010/2011 to 2012/2013 sessions. Findings indicated that the Unified Tertiary Matriculation Examination (UTME) was the best predictor of College performance. Emaikwu (2015) expressed that despite various public examinations that Nigerian undergraduates go through, academic performance among university students are far below expectations most especially in the last one and half decades. He stressed that many students hardly pass all their first year courses, those who succeeded ended having poor grades. Stringent measures and strategies deployed by the Nigerian government to ensure that educational standards are maintained at university level have not yielded an improvement in the situation. The high rate of poor academic achievement among undergraduate is not unconnected with the channel through which they found themselves into the University System.

Consequently, this abysmal performance of candidates admitted into the university through UTME and Post-UTME were advocated to further screen down the supposed error and improve the quality of candidates admitted into the universities in the country. However, this move has been observed as not even improving the situation. Ajala (2010) observed that the past three years of Post – UME – screening tests among Nigerian universities tend to cast doubt as to whether it is for academic excellence alone that the tests were advocated or for other non- academic reasons. According to Igwue and Adikwu (2012), questions arising as to whether the conduct of Post – UME – screening tests has ensured better quality undergraduates admitted as well as better quality of graduates produced by the universities has not been adequately answered.

However, pockets of studies have revealed the trends. Nwanze (2009) observed that the best five UTME scores did not make up to 40 per cent in the PUTME; only two candidates from the JAMB merit list, out of 26 passed the PUTME screening test. In the Department of Law, according to the study, the best sixteen candidates failed the PUTME test. In Pharmacy; the best fifteen scores in PUTME were not on the merit list. He therefore emphasized that universities should be allowed to conduct their own entrance test since

JAMB can no longer conduct credible examinations.

In addition, a Post-UTME screening examination conducted by the University of Education, Kere-Ekiti using a sample of 500 candidates revealed that the sampled candidates who scored 200 and above in UTME, only 87 scored 40 per cent and above in the PUTME essay screening test, representing 43.5 per cent. One hundred and thirteen of the sampled candidates represented 56.5 per cent failed the PUTME screening. The study noted that PUTME screening especially the essay examination has helped to expose the inadequacies of some candidates. He further suggested that PUTME screening should include both objective and essay questions to determine the competence of candidates in both areas (Busaya, 2010).

In another study, conducted by Ifedili and Ifedili (2010) on an assessment of PUTME also revealed that in the 2005/2006 academic session, only 11.66 per cent of those who passed UTME at the acceptable points were able to pass the PUTME screening test at 50 per cent above. This is to say that 88.34 per cent failed the PUTME screening test in University of Benin. Hundu (2009)) observed that out of 30 students admitted into the Faculty of Technology at University of Ibadan, 23 were asked to withdraw at the end of their first year. These were students who scored well above 250 in the UTME. He argued that the use of UTME scores as basis for admission had done more damage than good to the education sector in Nigeria. In the same manner, a survey conducted at the University of Lagos and some other Federal Universities on the quality of first semester results showed that students who had First Class grade in their First Year in various departments had UTME scores averaging between 235 and 265, but students with higher scores in the range of 289 and above ended up with Third Class and at best Second Class Lower. The PUTME is expected to serve as a check and balance to ensure that only brilliant students with credible results gain admission into the universities as a way of sanitizing public examinations in particular and the university system in general (Hudu, 2009).

Similarly, Uhunmwuango and Ogunbadeni (2014) examined the relative strength and effectiveness of UME as admission criteria for selection into a Nigerian University, adopted a correlational design with 500 pairs of scores of candidates in UME and Post UME. The study used stratified random sampling techniques to select undergraduates from five Faculties in University of Benin. The results were analyzed using t-test and simple correlation co-efficient. Low statistically significant correlation:  $r = 0.088$  between UME and PUME scores was obtained. Significant difference in the scores of UME and PUME using t- test technique of ( $t = 3.51, p < 0.05$ ) was obtained. The study concluded that high marks in UME did not reveal that best qualified students were admitted into the Universities.

In the same vein, a study by Emaikwu (2015) on the predictive validity of unified tertiary matriculation examination (UTME) on the post-unified tertiary matriculation examination (PUTME) adopted ex-post-facto research design. The sample consisted of 692 candidates in the two examinations. The result revealed a statistically significant difference in the mean performance of students in unified tertiary matriculation examination (UTME) and post unified tertiary matriculation examination (PUTME) scores. The mean score of candidates in the UTME was higher than their mean score in PUTME. The standard deviation of candidates in UTME was lesser than that of PUTME. The correlation coefficient computed between UTME and PUTME scores was very low showing evidence of unpredictable validity between the two examinations. Based on these results, the study recommended the continuous use of UTME and PUTME scores for admission into universities.

Thus, in this study, predictive validity refers to the extent to which scores obtained in JAMB/UME are related to success in the 100 level University examinations. The accuracy of prediction is represented by the correlation coefficient between the test scores in UTME and Post UTME scores performance in 100 level examinations.

### **Statement of the Problem**

The predictive validity of using Unified Tertiary Matriculation Examination (UTME) and Post UTME as the criteria for predicting the first year undergraduate performance in the university examinations is met with mixed position within various education sectors. Conflicting results from different studies indicated that candidates with incredible high scores above cut-off scores do not reflect their own level of intelligence while some candidates who managed to secure admission cut-off scores by their own efforts and were privileged to secure admission were performing excellently well. This observable discrepancies, is yet to receive a dependable solution, leaving much arguments whether the continuous use of the results from these examinations should serve as the yard stick for admissions into various programmes of the universities with justifiable and achievable evidence towards meeting the expected outcomes.

### **Purpose of the study**

The study investigated the predictive validity of UTME and Post-UTME scores on first year students' performance in four departments in university of Abuja, Nigeria. Specifically, the study examined:

1. The extent UTME scores of the candidates are used as predictors of performance in 100 level CGPA examinations in four departments in the University of Abuja.
2. The extent PUTME scores of the candidates are used as predictors of performance in 100 level CGPA examinations in four departments in the University of Abuja.

### **Research Questions 1**

The following questions directed the study:

1. What are the values of the correlations between UTME scores and 100 level students' CGPA in the University of Abuja?
2. What are the values of the correlations between PUTME scores and 100 level students' CGPA in the University of Abuja?

### **Method**

The study adopted ex-post facto design. An ex-post facto research was adopted since the variables were not to be manipulated by the researcher. The target population comprised 12,543 100 level undergraduates in the University of Abuja who took both the UTME and PUTME examinations in 2008-2011 sessions. The sample size of 720 undergraduates was drawn from four faculties and departments through a purposive sampling method. The instrument used in the study was an inventory titled "University Entry Qualification Predictability Inventory" (UEQPI) developed by the researcher and validated by the Supervisor. It elicited information on student's enrolment for the period of three academic sessions under review.

More so, it requested data on the mode of entry qualifications and students' CGPA for the three academic sessions under consideration. In carrying out this study, information about each student was extracted from the records kept in their files at their various departments. To ascertain the academic achievement of the students, their 100 level CGPAs were extracted for analysis. These data were tabulated using the UEQPI. The researcher obtained the agreement of experts in the field of Measurement & Evaluation on the instrument's (UEQPI) usefulness in collecting the required data for the study through face validity. The reliability of the instrument is entrenched in the fact that the various examinations bodies are reputable and are known to conduct sufficient reliability tests before test administration. The University degree examinations were teacher-made tests constructed and administered by professionals. The

tests were further subjected to moderation to ensure reliability. It was the basis for which final degree classification for award of certificates were made thus known to be reliable. The researcher developed guidelines, selected and engaged two research assistants, held orientation sessions with them on ethical considerations as well as fixed their remuneration. The researcher then visited the Admissions and Records Office of the university and collected the record of students admitted and the mode of entry. Working with these two assistants, the researcher proceeded to the Examination/Records office of relevant departments and collected data on the current Cumulative Grade Point Average (CGPA) of the Students. This routine lasted for four months' period. The statistical technique for this study was Pearson Product Moments (r) Correlation method to determine the relationship between the entry qualification and students' academic performance.

## Results

The results of the data analysis are presented in Tables 1 and 2 according to the research questions.

**Research Question 1:** What are the values of the correlations between UTME scores and 100 level students' CGPA?

**Table 1: Summary of Correlations between UTME and CGPA for the four Departments**

| Years   | Departments |           |           |            |
|---------|-------------|-----------|-----------|------------|
|         | English     | Economics | Education | Accounting |
| 2008/9  | -.009       | .028      | -.078     | -.111      |
| 2009/10 | -.075       | .041      | -.210     | -.023      |
| 2010/11 | .055        | -.155     | -.076     | .169       |

To answer this research question, the data were analyzed using Pearson Product Moment Correlation (PPMC). The summary of Table 1 shows the correlations between UTME and CGPA scores for the four departments used in answering research question 1. In 2008/9, correlation coefficient indicated negative/ low relationship in English (-.009), Education (-.078), Accounting (-.111), departments, with Economics (.028) displaying positive/low correlation relationship. In 2009/10, English (-.075), Education (-.210), Accounting (-.023), departments, display negative/low correlation relationship, with Economics (.041) having low positive correlations relationship. In 2010/11, English (-.155) and Education (-.076) have low/ negative correlation relationship. English (.055) and Accounting (.169) display low/positive correlation relationship. However, the entire results revealed that all the 12 correlation coefficients are very low, with eight of the results showing low/ negative correlation relationship.

**Research Question 2:** What are the values of the correlations between PUTME scores and 100 level students' CGPA?

**Table 2: Summary of Correlations between PUTME and CGPA for the four Departments**

| Years | Departments |  |  |  |
|-------|-------------|--|--|--|
|-------|-------------|--|--|--|

|         | English | Economics | Education | Accounting |
|---------|---------|-----------|-----------|------------|
| 2008/9  | .248    | .459      | -.261     | .396       |
| 2009/10 | .051    | .459      | -.031     | -.072      |
| 2010/11 | .072    | .171      | -.205     | .059       |

Pearson Product Moment Correlation (PPMC) analysis was used to answer research question 2. In 2008/9 session, Education (-.261) has negative/low correlation. Other departments: English (.248) and Accounting (.396) has positive/low correlation. But, Economics (.459) has positive /moderate correlation. In 2009/10 session, Education (-.031), Accounting (-.072) and English (.051) have negative/ very low correlation. Also, Economics (.459) display positive/moderate correlation. Three departments English (.072), Economics (.71) and Accounting (.059) in 2010/11 session, have negative/very low correlation coefficient. Education (-.205) has negative/low correlation. The indications show that correlations between PUTME and CGPA for the four departments used in answering research question 2 have negative/ low, positive/low and positive/ moderate coefficients. However, the picture is far from being encouraging.

### Discussion of Findings

The findings on research question one indicated that, the correlations between UTME and CGPA for the four departments was between the -.210 and .169 correlation coefficients. Most of the correlation coefficients were negative and low. Thus UTME, was not a useful predictor of students' CGPAs. The result is in support of previous studies carried out. For instance, Ogedengbe (2000) discovered that candidates admitted into Nigerian Universities through JAMB/UTME, many of high scores such as 260, 270 were being asked to withdraw due to intolerable poor academic performance. In a similar vein, Kale (2004) reported that the best performance at the first year university examination was achieved by students with lower UME/UTME scores. Besides, Bamgboye et al (2001); Salahdeen and Murtala (2005) observed that UME scores had no correlation with performance in the medical school. Hence, Obioma and Salau (2007) from a study on the predictive validity of public examinations in Nigeria concluded that public examinations were not good predictors of students' performance in the higher institutions in the country.

Furthermore, Adeniyi (2010) found no correlation between UME scores and 100 level results medical school. This has, exposed some observable lapses in the process of admitting candidates into universities in Nigeria through UME. Also, Igwe and Adikwu (2012) stressed the need for examination conducted by JAMB UME, to seek at identifying the learner's intellectual functioning and potential for higher education and doubted the accuracy to which JAMB/UTME predicted candidates' performance, if admitted in the University. This issue should be viewed as serious problems as the correlation coefficients obtained by various studies do not indicate high correlation predictive validity between JAMB/UTME and students' performance in university examinations. JAMB/UTME is only another examination to which students and parents are made to spend money with no predictive value.

The answer to the second research question revealed that correlations between PUTME and CGPA have negative/ low, positive/low and positive/ moderate coefficients. The correlation values between PUTME and CGPA for the four departments was between: .459

and -.261. The index (.459) was only showing moderate strength correlation yet cannot be considered useful for predictive purposes. However, this result collaborate previous studies on the predictive validity of PUTME and first year university examination. Uhumwuangho and Ogunbadeni (2014) in a correlational design with 500 pairs of scores of candidates in UME and Post UME examined the relative strength and effectiveness of UME as admission criteria for selection into a Nigerian University. Low statistically significant correlation:  $r = 0.088$  between UME and PUME scores was obtained. Significant difference in the scores of UME and PUME using t- test technique of ( $t = 3.51, p < 0.05$ ) was obtained. The study concluded that high marks in UME did not reveal that best qualified students were admitted into the Universities.

Emaikwu (2015) on the predictive validity of unified tertiary matriculation examination (UTME) and the post-unified tertiary matriculation examination (PUTME) used an ex-post-facto research design with 692 candidates in the two examinations. The result revealed a statistically significant difference in the mean performance of students in unified tertiary matriculation examination (UTME) and post unified tertiary matriculation examination (PUTME) scores. The mean of candidates in the UTME was higher than their mean score in PUTME. The standard deviation of candidates in UTME was lesser than that of PUTME. The correlation coefficient computed between UTME and PUTME scores was very low showing evidence of unpredictable validity between the two examinations. The PUTME is expected to serve as a check and balance to ensure that only brilliant students with credible results gain admission into the universities as a way of sanitizing public examinations in particular and the university system in general (Hudu, 2009). But the various results had proven that PUTME scores are not the best predictors of students' performance in the university because of low correlation predicative validity.

### **Conclusion**

The study revealed that using UTME/PUTME as the predictor of students' performance in the first year university examination is characterized by negative/low and moderate correlation coefficient. The continuous use of the UTME/PUTME as predictor should be reviewed to consider the aspect of predictive validity than meeting the cut off points. Since examinations are administered to obtain information about examinee's skill, ability and proficiency, the pictures and records obtained are indicators that the purpose is not achieved, except UTME/PUTME are not administered for the purpose of predictive validity.

### **Recommendations**

Therefore, the following recommendations were made:

1. The policy governing UTME and PUTME examinations as the criteria for university admissions should be reviewed.
2. The UTME and PUTME examinations should be administered with discovering the potential of the candidates' success in their chosen areas in the university.
3. The conduct of this examination should be monitored to ensure that various vices that may mar the purpose are eliminated.

### **Implications for Counselling**

The findings of this study have far reaching implications for theory and practice in guidance and counselling intervention strategies. Some of them are stated below:

1. Orientation service: Intensive orientation service should be channel towards helping the 100 level students in the University of Abuja find themselves in the new environment to get well adapted with little or no difficulties.



2. Information service: Educational, academic and personal-socio information should be made available to this level of students. To facilitate quick adjustment adequate information on the danger of engaging in examination malpractices. Also, information on health issues, religious matters, career choices and financial discipline can help them live meaningfully within the university community and focus more on the academic activities.

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