

## **Predictive Validity of Entrance Examinations for First-Year GPA Among Pre-Service Teachers of Christian Religious Studies**

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### **Abstract**

*The Unified Tertiary Matriculation Examination and the post-Unified Tertiary Matriculation Examination are placement examinations used to select applicants for admission to tertiary institutions in Nigeria. The study, therefore, used the Unified Tertiary Matriculation Examination and post-Unified Tertiary Matriculation Examination scores as predictors of students' First-year Grade Point Average among pre-service teachers. An ex-post facto research design was adopted. One purpose was raised and transformed into a research hypothesis. The population consisted of Christian Religious Studies undergraduates at the University of Ilorin who were receiving training to become future professional teachers. The target population were 100 Level Christian Religious Studies students in the 2020/2021 academic session. All 113 available students were used as the sample. A proforma was developed to collect scores for the 3 variables used in this study. Multiple regression analysis was employed to test the hypothesis raised. The findings revealed that Unified Tertiary Matriculation Examination and post-Unified Tertiary Matriculation Examination scores are good predictors of First-year Grade Point Average. It was therefore concluded that the Unified Tertiary Matriculation Examination and post- Unified Tertiary Matriculation Examination are fair test instruments that could be relied upon to ascertain examinees' ability, guaranteeing students' admission into any Nigerian tertiary institution. Hence, it was recommended that the Joint Admission*

*Matriculation Board, being the organ responsible for the Unified Tertiary Matriculation Examination, and the University that conducts the post-Unified Tertiary Matriculation Examination should vigorously monitor the use of these instruments to serve the purpose they are meant for.*

**Keywords:** *Christian Religious Studies, First-year Grade Point Average, Predictors, Pre-service Teacher Post-Unified Tertiary Matriculation Examination Scores, Unified Tertiary Matriculation Examination*

## **Introduction**

The entrance examinations in Nigeria, such as Unified Tertiary Matriculation Examination (UMTE) and post-Unified Tertiary Matriculation Examination (Post-UMTE), are used for the selection of applicants into tertiary institutions. The UTME and post-UTME are placement tests used to assess candidates' future academic readiness and to inform decisions regarding educational advancement after completion of senior secondary education. The degree to which a candidate succeeds at one stage is a good indication of how far they can go in their schooling.

One variable of interest in this study is the UTME administered by the Joint Admissions and Matriculation Board (JAMB). It is a statutory function of JAMB to ensure a uniform standard for the conduct of matriculation examinations and placement of suitable candidates into Nigerian tertiary institutions. The board started its operations in 1978. The policy was amended to include universities, monotechnics, polytechnics, and Colleges of Education in the conduct of this placement examination (Kennedy & Ebuwa, 2020). The board works with other academic bodies to develop requirements, such as five credits in relevant subjects, to ensure that candidates are prepared for the careers they intend to pursue at any tertiary institution in Nigeria. The board is engaged in collaborative efforts with tertiary institutions to prepare a brochure that provides essential information on all courses offered by these institutions. The board is responsible for the collection and dissemination of information on all matters related to admission to tertiary institutions in Nigeria (Kennedy & Ebuwa, 2020).

Another variable of interest in this study is the post-Unified Tertiary Matriculation Examination (post-UTME). The Post-Unified Tertiary Matriculation Examination was introduced in 2005 by the University of Ibadan. It is an aptitude test conducted by various tertiary institutions in Nigeria to place student in the appropriate course of study based on their academic ability. It is used as an instrument to screen candidates seeking

admission who have scored at least 180 in the UTME. It is the norm in Nigerian tertiary institutions to use the post-UTME test to screen candidates for admission; thus, it becomes one of the entry requirements into all higher institutions of learning in Nigeria (Munkaila, 2017).

The underlying reasons for the introduction of post-UTME are many. The first reason was that the Joint Admissions and Matriculation Board (JAMB) made questionable admissions offers to some candidates, who could not defend them after the first year of their academic pursuit at the institution. The above reason provided insight into the flashbacks to the certificates these candidates claimed to have. Examples of such certificates include the West African Senior School Certificate Examinations (WASSCE), the National Examinations Council (NECO), and the National Business and Technical Examinations Board (NABTEB). It was therefore discovered that there were large-scale examination malpractice and other fraudulent activities, which were reported in Nigerian daily Newspapers (Munkaila, 2017; Sheyin *et al.*, 2021).

The last variable of interest in this study is the Grade Point Average (GPA). This concept is being used in tertiary institutions in Nigeria and beyond. It is a means of evaluating students' academic proficiency from the first day to the last day of their academic pursuit. Grade Point Average (GPA) is computed every semester to show the average performance of a student based on the total points students earn and obtain in cumulative semesters. It is the sum of all examination grade points across all courses offered during a student's studies at an academic institution (Yogendra & Andrew, 2017). The researchers therefore intend to investigate whether the UTME and post-UTME can predict future learning outcomes, such as GPA, at a Nigerian university.

Several studies have explored prediction in academic performance. Kolawole *et al.* (2011) examined cognitive entry points as predictors of students' performance in Chemistry across selected Nigerian universities. Their findings showed weak correlations between SSCE, UTME, and post-UTME and students' performance across all sampled university levels. However, the CGPA of 200-level students had the strongest association with post-UTME scores, followed by 100- and 300-level students, whereas 400-level students had the weakest association.

Igwe and Adikwu (2012) examined the predictive validity of UME on university students' performance. The finding revealed a significant relationship between UME scores, post-UME aptitude tests, and academic performance. Similarly, Ikoghode (2015) assessed the relevance of the post-UTME alongside the UTME for students' academic activities. It revealed that

post-UTME mean scores were lower than UTME scores, suggesting that post-UTME is unnecessary and unfair due to inconsistencies in testing standards. Oluwatayo and Fajobi (2015) examined post-UTME as a screening tool and found a positive correlation between post-UTME scores and CGPA in Mathematics/Computer Science. The strongest predictive validity was observed at the 100 level (0.67), with lower levels indicating less predictive validity, suggesting that the post-UTME is most effective in predicting first-year performance.

Popoola (2016) investigated the credibility of UME scores for admission into Nigerian tertiary institutions and found a significant relationship between UME scores and First Year Grade Point Average (FGPA), establishing UME as a strong predictor of academic success at the Federal University of Technology, Yola.

Afu and Ukofia (2017) examined the predictive validity of WASSCE and NECO results on 100-level students' CGPA at the University of Abuja. WASSCE results showed a moderate correlation for English and the Education Department in 2008/2009, but a negative correlation for all departments in 2009/2010 and 2010/2011. NECO results similarly showed a moderate correlation only in the English department in 2008/2009, with negative correlations across the other departments across the sessions.

Odukoya *et al.* (2018) examined the predictive validity of UTME across nine academic sessions (2005/2006 to 2013/2014) and found that, although UTME had a positive predictive value, its predictive validity was generally low. Kennedy and Ebuwa (2020) assessed UTME and post-UTME as predictors of undergraduate final-year grades, concluding that neither significantly predicted students' final performance. Similarly, Aremu *et al.* (2020) *investigated the predictive validity of the UTME at the University of Ibadan and found that UTME scores did not reliably predict academic performance among 100-level students.* Sheyin *et al.* (2021) explored the relationship between post-UTME scores and students' academic performance at Tai Solarin University of Education, Ogun State. Their findings revealed a significant correlation between post-UTME results and students' academic performance, as well as a notable difference between UTME and post-UTME scores.

Etaga *et al.* (2020) found that candidates' JAMB scores did not reflect their actual ability. A weak relationship was observed between candidates' JAMB scores and their corresponding PUTME scores. Gwani *et al.* (2024) found a weak positive correlation among the JAMB Scores, 'O' Level results, and communication skills on post-UTME examinations. It showed that JAMB

scores, 'O' level results, and communication skills together explain only 18.4% of the variance in post-UTME scores. Akindele (2024) reported a significant difference between students' UME scores and their post-UTME screening test scores. The study also showed a statistically significant difference in the academic performance of male and female students admitted to Tai Solarin University of Education through the post-UTME screening test.

This study was motivated by lecturers who argued that students with high UTME scores should, in theory, possess the academic strength for undergraduate studies. However, many struggle to meet academic standards, leading to low grades, a change of course, extended studentship periods, or university dropout. Given these concerns, the researchers aimed to investigate whether UTME and post-UTME scores could predict the academic performance (GPA) of undergraduate students of Christian Religious Studies at the University of Ilorin.

### **Purpose of the Study**

The study examined entrance examinations (Unified Tertiary Matriculation Examination and post-Unified Tertiary Matriculation Examination scores) as significant predictors of First-year Grade Point Average of Pre-service Christian Religious Studies in Teachers Programme, University at Ilorin, Nigeria.

### **Research Hypothesis**

**Null Hypothesis:** Unified Tertiary Matriculation Examination and post-UTME scores do not significantly predict the First-year Grade Point Average of pre-service undergraduates in Christian Religious Studies at the University of Ilorin, Nigeria.

### **Methodology**

An ex post facto research design was adopted because the data were already available in the field without manipulation. The population of this study comprised all pre-service CRS teachers at levels 100-400 in the Faculty of Education, University of Ilorin, Ilorin, Nigeria. The target population was 100 pre-service CRS teachers for the 2020/2021 academic session. The choice of the 100 level is attributed to the avoidance of extraneous variables that might have affected or influenced the learning activities of the sampled students.

At the time of this report, there were 113 CRS students at the 100-level, and all were in use. The research instrument was a researcher-developed pro forma used to collect UTME, post-UTME, and first-year GPA scores from students' files, with permission from the Head of the Department and the level adviser.

The set of scores from the UTME and post-UTME was treated as the independent variable, while the first-year GPA was the dependent variable.

It must be noted that the scores obtained from the UTME, post-UTME and first-year CGPA) were not in the same unit. Therefore, the score set was converted to a percentage to ensure a standard unit. Originally, post-UTME scores were in 100%. UTME Scores were based on a 400% scale, and an individual student's scores were divided by 4 to obtain a maximum of 100%. Furthermore, first-year GPAs were on a five-point scale (i.e., E = 1, D = 2, C = 3, B = 4, and A = 5) and were converted to percentages by multiplying the scores by 5 to obtain a maximum of 100% before analysis. One research purpose was articulated as a research hypothesis and tested using multiple regression at the 0.05 significance level.

## Results

The data set was subjected to linear regression analysis using SPSS 26 to test hypotheses postulated, and outputs are reported preceding tables.

**H<sub>01</sub>:** Unified Tertiary Matriculation Examination and post-Unified Tertiary Matriculation Examination scores cannot significantly predict the First-year Grade Point Average of pre-service undergraduates in Christian Religious Studies, University of Ilorin, Nigeria.

To test this hypothesis, scores obtained from UTME and post-UTME were used as predictors of first-year GPA of undergraduates in Christian Religious Studies at the University of Ilorin, Nigeria.

**Table 1:**

*Regression Analysis Report on Entrance Examinations as Predictors of First-year Grade Point Average*

	Sum of Squares	df	Mean Square	F	Sig.	Inference
Regression	128.812	2	64.406			
Residual	24.642	111	0.222	290.117	0.000	S
Total	153.000	113	-	-	-	

P < 0.05

Table 1 presents the results of the linear regression, which predicts first-year GPA scores (Dependent variable) from UTME and post-UTME scores (independent variables). The output indicates that the calculated p-value (0.000) is less than the chosen level of significance (0.05). Hence, the hypothesis is rejected. This implies that UTME and post-UTME scores are strong predictors of undergraduate CRS students' first-year GPA at the University of Ilorin ( $F(2, 111) = 290.117, p < 0.05$ ). To ascertain the

contribution of UTME and post-UTME scores, the beta weights were computed, and the results are reported in Table 2. This analysis, therefore, provides strong evidence that entrance examination scores significantly influence first-year GPA.

**Table 2:**  
*Model Summary of the Independent Variables*

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate	R Square Change
1	0.917	0.842	0.839	0.472	0.842

Table 2 shows the combined contribution of the two independent variables. The R-Square reveals 0.842 (84.2%) for the dependent variable. To ascertain the contribution of each of the independent variables to the model, Beta weight and t-test were computed, and outputs are reported in Table 3.

**Table 3:**  
*Contributions of Unified Tertiary Matriculation Examination and Post-Unified Tertiary Matriculation Examination to First-year Grade Point Average*

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.217	-	-	-	-
UTME	0.020	0.003	0.574	6.67	0.000
POST UTME	0.047	0.005	0.691	9.44	0.000

Table 3 reveals the Beta weights and the t-values of the independent variables (Unified Tertiary Matriculation Examination and Post-Unified Tertiary Matriculation Examination to First-year Grade Point Average). An examination of the Beta weights and the t-values in Table 3 indicates that the Unified Tertiary Matriculation Examination contributes a Beta weight of 0.574 and the t-value of 6.67, while the Post-Unified Tertiary Matriculation Examination variable contributes a Beta weight of 0.691 and the t-value of 9.44. This implies that the Post-Unified Tertiary Matriculation Examination is the most predictive of the First-year Grade Point Average, followed by the Unified Tertiary Matriculation Examination variable. The multiple regression equation shows thus:

Regression Equation ( $Y = a + b_1X_1 + b_2X_2$ )  
 Substitutes the equation from the table ( $Y = 0.217 + 0.574X_1 + 0.691X_2$ )

**Discussion**

The finding revealed substantial evidence that entrance examination scores (Unified Tertiary Matriculation Examination and post-Unified Tertiary

Matriculation Examination) significantly predicted the first-year GPA of pre-service undergraduates in Christian Religious Studies at the University of Ilorin, Nigeria. The R-squared value of 84.20% indicates a strong and positive relationship between entrance examinations and first-year GPA.

This finding is attributable to the fact that the test items in the two entrance instruments were generated from the same academic curriculum. The finding is also attributable to the fact that the items in the GPA were curriculum-based, as corroborated by Afu and Ukofia (2017). The present finding is consistent with that of Odukoya *et al.* (2018). They found that UTME had positive predictive validity over academic performance. The present finding also accords with Popoola's (2016) finding. He found a significant positive relationship between UME scores and First-Year Grade Point Average (FGPA). It implies that UME is a good predictor of students' academic achievement at the Federal University of Technology, Yola. The present finding supports the finding of Sheyin *et al.* (2021) that there is a significant relationship between students' post-UTME scores and their academic performance in the university. This finding also concurs with Oluwatayo and Fajobi (2015), who investigated the validity of post-UTME as a screening instrument for selecting candidates for degree programmes in Nigerian universities. They found correlations between post-UTME scores and CGPA in Mathematics/Computer Science at the 100 level (0.67), 200 level (0.38), 300 level (0.31), and 400 level (0.22). Furthermore, the finding contradicts that of Gwani *et al.* (2024). They found a weak positive correlation among the JAMB Scores, O-Level results, and communication skills on post-UTME examinations. Their findings showed that JAMB scores, 'O' level results, and communication skills together explain only 18.4% of the variance in post-UTME scores.

In the same vein, the present finding disagrees with that of Aremu *et al.* (2020). Their results showed that the UTME could not predict students' academic performance. This finding agrees with Kolawole *et al.* (2011), who found a lowly significant relationship between the post-UTME and students' academic performance in Chemistry. In the same vein, the present finding differs from Kennedy and Ebuwa's (2020) findings. They found that UTME and post-UTME scores did not significantly predict undergraduate final grades at the University of Nigeria. They remarked that post-UTME is unnecessary and unfair since the two tests are not of the same standard. The finding is contrary to that of Etaga *et al.* (2020). They found that candidates' JAMB scores did not accurately reflect their actual ability. They also found a weak relationship between candidates' JAMB scores and their corresponding PUTME scores.

Akindele (2024) reported a significant difference between students' UME scores and their post-UTME screening test scores.

### **Conclusion**

This study provides evidence that Unified Tertiary Matriculation Examination (UTME) and post-UTME scores are significant predictors of first-year Grade Point Average (GPA) among undergraduate pre-service teachers studying Christian Religious Studies. The findings suggest that these assessments can be used as valid instruments to evaluate examinees' academic ability and proficiency. Notably, the influence of extraneous variables, such as campus activities, appears minimal, underscoring the utility of UTME and post-UTME scores in predicting academic performance in the early stages of undergraduate studies.

### **Recommendations**

Based on the findings, it is therefore recommended as follows:

- i) The conduct of these (UTME and post-UTME) tests should be monitored very well to solidify the laid-down objectives.
- ii) Post-UTME aptitude tests should be a moderating factor in determining the cognitive readiness of students in gaining admission to tertiary institutions in Nigeria
- iii) There is a need for the JAMB as a statutory body responsible for the conduct of UTME to judiciously carry out content validity of test items with a view to ensuring that the test reflects the skills and competencies required for learning activities in tertiary institutions.
- iv) The use of post-UTME in the university should be sustained. However, its content should be improved by involving subject experts, academic researchers, and curriculum developers to reflect the skills emphasised in each course for which it is applied.
- v) Universities conducting Post-UTME should uphold their integrity by making sure that all their examinations are administered in an atmosphere that does not compromise the standard of the institution.

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