DO ENTRANCE EXAMINATIONS PREDICT ACADEMIC PERFORMANCE? A Gender-Based Analysis for University of Ibadan

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ABSTRACT

This study empirically examined the relevance of entrance examinations for undergraduate admission in Nigeria (Unified Tertiary Matriculation Examination (UTME) and Post-UTME), in predicting the academic performance of first year undergraduate students of the University of Ibadan. Data were drawn from all admitted students in the 2014/2015 and 2015/2016 academic sessions and analyses were conducted at university and faculty levels along gender divisions using the Ordinary Least Squares (OLS) technique. The results show that UTME and post-UTME scores were significant predictors of the academic performance of first-year students. UTME scores predicted the performance of both genders in one and five faculties in the 2014/2015 and 2015/2016 sessions respectively, while post-UTME scores predicted the performance of both genders in five and three faculties in the 2014/2015 and 2015/2016 sessions respectively. The effects of post-UTME scores outweighed those of the UTME scores at both levels of analysis. Therefore, it is recommended that post-UTME should continue to be conducted by institutions.

Key words: Academic performance, Post-UTME scores, University of Ibadan, UTME scores

JEL classification: A22, I20, I23

1. Introduction

The role of education in human capital development cannot be over-emphasized. Education and health are major components of human capital development contributing to human welfare (Appleton and Teal, 1998). Tertiary or higher education, especially, plays a significant role in economic growth and development (Mariana, 2015; Benos and Karagiannis, 2015). Evidence, however, shows that unreliable education data and low quality of education infrastructure, in terms of facilities and other inputs, could make education exert negative effects on economic growth (Abdullah, 2013; Glewwe, Maiga and Zheng, 2014). Nonetheless, a vast literature has documented evidence showing education as a great input to economic growth and development (Frini and Muller, 2012; Mercan and Sezer, 2014).

The role of education in driving economic growth and development has been a persistent subject of discussion among policy makers and researchers (Jelilov, Aleshinloye and Onder, 2016; Mohammed, Rufai and Azeez, 2016) with recent emphasis on huge investments required in both sectors (Olaniyan, et al., 2018). Owing to its depth, training and specialty, more attention is being given to tertiary education as the backbone for producing envisaged development. To ensure quality products are turned out from tertiary institutions, policy makers in the education sector of various countries have put in place different admission selection methods to guarantee the selection of the best brains for tertiary education.

A vast number of studies have investigated the determinants of academic performance with a few concentrating on entrance examinations (Bai, Chi and Qian, 2014; Ağazade, Caner, Hasipoğlu and Civelek, 2014). While some studies focused on the academic performance of students in a particular course of study (Chowdhury and Mallik, 2012; Andrietti, 2014; Bichi 2015; and Landin and Pérez, 2015), others focused on gender (Mellanby, Zimdars and Cortina-Borja, 2013; Gong, Ding and Tsang, 2014; Lu, Shi and Zhong 2018; and John et al., 2018). In Nigeria, however, there are a limited number of studies investigating the nature and extent of the relationship between post-JAMB (Joint Admissions and Matriculation Board) tests and the performance of admitted students, and this is the gap that this study aims to fill.

Historically in Nigeria, each institution solely controlled its undergraduate admission procedures such that a candidate could apply and be

offered multiple admissions. This and other problems inherent in the system led to the establishment of the Joint Admission and Matriculation Board (JAMB) in 1978, purposely to centralize and unify the undergraduate admission system in the country (Olaniyan, 2006). JAMB is a parastatal of the Federal Ministry of Education, regulating and monitoring undergraduate admissions in Nigeria; it conducts entrance examinations for all categories of tertiary institutions in the country. It used to conduct two major examinations: University Matriculation Examination (UME) for the universities, and Polytechnics and Colleges of Education Examination (PCE) for others institutions. However, for efficient use of human and other resources, both examinations were merged into the Unified Tertiary Matriculation Examination (UTME) in 1993 (Ojerinde, 2009). Under this arrangement, candidates have the option of choosing a university, polytechnic, college of education, monotechnic, or a school of enterprise. This affords candidates who fail to meet the admission criteria of one institution an opportunity to be considered for admission into another institution. Annually, the Board meets with all the institutions and agrees on the minimum cut-off mark for admission eligibility in the country, which is usually 180 out of the available 400 marks in the UTME; although, some universities have always maintained a minimum score of 200 in the UTME to be eligible for participation in their admission processes.

Over time, it was observed that some candidates who scored very high marks in the UTME performed woefully at the end of their first year such that they were advised to withdraw, thereby reducing the carrying capacities of the respective institutions. This became a common and recurring experience, and stakeholders in the education sector have challenged the efficiency of the UTME in selecting and admitting the best among candidates. This also led to the establishment of the Post-UTME conducted by various tertiary institutions. It is an examination conducted by the institution chosen by candidates during the UTME, having satisfied the institution's minimum requirements; qualifying requirements however vary across institutions. A huge controversy has trailed the conduct of Post-UTME, while some stakeholders advocate for its cancellation, claiming that its conduct amounts to double payment by candidates and a waste of resources, the concerned

institutions maintain that its conduct ensures a level playing ground for all qualified candidates of a certain threshold and makes institutions pick only the candidates who are likely to excel academically in their undergraduate studies. Amidst this raging controversy, JAMB instructed that tertiary institutions in the country must not conduct Post-UTME in the 2016/2017 academic session.

The University of Ibadan (UI) is the flagship of higher education in Nigeria. It was established in 1948 and is the first university in Nigeria ever ranked among the top 1000 universities globally. Its vision is to become a world-class institution for academic excellence geared towards meeting societal needs and its undergraduate admissions are highly competitive while placing emphasis on gender balance in the process. Over the years, its admission list for undergraduate studies has not only exhibited national spread, its male to female ratio oscillates around 1.1:1. The institution requires candidates to have a minimum of five ordinary level credits in relevant subjects and to score a minimum of 200 out of 400 in the UTME before such a candidate could be invited to participate in the university's Post-UTME. UI was at the forefront of institutions clamouring for a continuation of Post-UTME, as it has enabled the institution to confirm the authenticity of the UTME results of participating candidates and consequently select the best of them.

Consequently, this study seeks to examine empirically the relevance of both the UTME and post-UTME in predicting the academic performance of first year undergraduate students. It aims to contribute to the on-going debate on the appropriateness of Post-UTME in the tertiary education system in Nigeria. It covers the undergraduate students of the university admitted for the 2014/2015 and 2015/2016 academic sessions across the various academic faculties. These are the two academic sessions preceding the 2016/2017 session when the Post-UTME examination was cancelled. The paper is organized as follows: section 2 explores the admission system in Nigeria and the University of Ibadan, section 3 supplies the literature review alongside a theoretical framework, while section 4 deals with data issues and methodology, and section 5 contains the results/findings. The conclusion and recommendations of the study are contained in section 6.

2. Undergraduate Admissions Procedure in Nigeria and at the University of Ibadan

Currently in Nigeria, undergraduate admission involves a two-stage process comprising the UTME conducted by the Joint Admissions and Matriculation Board and the Post-UTME conducted by various tertiary institutions for candidates who have satisfied the requirements of the chosen institutions in the UTME. The guiding framework for undergraduate admission requires that admission into federal universities should be based on three criteria: merit, catchment area and Educationally Less Developed States (ELDS).[1] The framework states that 45 per cent of admissions should be based on merit while 35 per cent should be based on catchment area and 20 per cent on ELDS criterion (Ojerinde, 2009). Table 1 shows the number of applicants for the UTME from 2010 to 2018 and those that were eventually given admission and the proportion of females.

Table 1. Application and Admission Statistics in Nigeria

Year	Number of Applicants	Number Admitted	Proportion of Admitted Applicants (%)	Proportion of Females Admitted (%)
2010	1,513,940	423,531	28.0	41.5
2011	1,636,356	417,341	25.5	42.3
2012	1,632,835	447,176	27.4	42.0
2013	1,924,393	463,395	24.1	42.2
2014	1,785,608	437,704	24.5	41.2
2015	1,612,247	485,338	30.1	42.6
2016	1,592,232	578,114	36.3	44.0
2017	1,708,009	622,152	36.4	46.5
2018	1,627,954	521,596	32.0	45.5

Source: Compiled by the authors from NBS/JAMB Report, 2019.

[1] Merit implies those who satisfy the university admissions requirements. Catchment area criterion is applicable to candidates who could not satisfy the merit requirement but their states of origin are neighbouring states to the state in which the university is located. ELDS criterion implies candidates from educationally less developed states.

The demand for tertiary education in Nigeria remains relatively high as JAMB recorded an average of 1.6 million applications for tertiary education in the last decade. However, there was a mild increase in the proportion of the applicants offered admission. The proportion increased from 28 per cent in 2010 to 32 per cent in 2018. Although the pattern of admission showed male domination, the proportion of females being offered admission has been increasing.

University of Ibadan, being the premier university, with all thirty-six states and the federal capital territory as its catchment area and ranked as the best university in the country,[2] undergraduate admission into the university is highly competitive and transparent. The university has consistently reviewed its admission procedure to ensure selection of the best candidates. The minimum weighted score to be eligible for admission into any of its undergraduate courses is a combination of the UTME score, Post-UTME score and the ordinary level results. As a first level of screening, it was noted that only candidates with a score of 200 and above in the UTME are eligible to participate in the university application processes. Only four or five other universities, out of 152 universities in Nigeria have an application procedure standard similar to that of UI, which is undoubtedly one of the ways in which the university ensures that its intakes are of high quality (Olayinka, 2017). However, due to the insistence of JAMB on non-conduct of Post-UTME for the 2016/2017 academic session admission, the University made use of only the UTME score and ordinary level results to arrive at the weighted score for admission eligibility of its candidates. Table 2 presents the number of applicants and those admitted by the university from 2010 to 2017 and their gender distribution. Following the national pattern shown in Table 1, the percentage of female candidates admitted for undergraduate programmes varied between 45 per cent and 49 per cent; this confirms to what extent the university observes gender-balance in its undergraduate admissions.

[2] It is the only university in the country that has ever been ranked among the top 1000 best universities in the world by the Center for World University Rankings (2018) (Available: http://cwur.org/2018-19.php). It was ranked 991 in 2018. The ranking was based on teaching, research output, quality of publications, quality of faculty, alumni employment, citations and influence. It was ranked at number 801-1000 by Times Higher Education World University Rankings (Available: https://www.timeshighereducation.com/world-university-rankings/2018/world-ranking#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/stats).

Table 2. Application and Admission Statistics in the University of Ibadan

Academic Sessions	Number of Applicants	Number of candidates admitted	Proportion of applicants admitted (%)	Number of males admitted	Number of females admitted	% of females Admitted
2010/2011	39,273	3,528	9.0	1,796	1,732	49.1
2011/2012	49,105	2,839	5.8	1,485	1,354	47.7
2012/2013	41,163	2,715	6.6	1,410	1,305	48.1
2013/2014	46,812	3,158	6.7	1,733	1,425	45.1
2014/2015	37,304	3,475	9.3	1,870	1,605	46.2
2015/2016	59,176	4,006	6.8	2,146	1,860	46.4
2016/2017	52,511	3,835	7.3	1,851	1,984	51.7
2017/2018	47,544	5,242	11.0	2,715	2,527	48.2

Source: Compiled by the authors from the university's undergraduate admissions documents

3. Methodology

3.1 Model and estimation technique

This study adopted the educational production function theory of Hanusheck (1979) which postulates a linear relationship between output measured by standardized achievement test scores and a number of covariates. A few recent studies that have relied on this theory have examined the relationship between academic performance and family background, influence of peers, school inputs, and innate abilities (Andrietti, 2014, Sattayanuwat, 2015 and Mallik and Shankar, 2016). This study however modifies the production function, with Nigerian peculiarities of input and thus measures the academic performance of students by their cumulative grade point average (CGPA) with the two entrance examinations as the covariates expressed at the university and faculty levels as follows:

Level 1 – University Level

$$CGPA = f(Age, UTME\ Score, Post\text{-}UTME\ Score, Faculties) \quad (1)$$

Level 2 – Faculty Level

$$CGPA = f(Age, UTME\ Score, Post\text{-}UTME\ Score) \quad (2)$$

where: *Faculties* is a vector of different faculties of the university.

Both equations are estimated for both gender across the two academic sessions. The study adopted the ordinary least squares (OLS) to estimate the models. OLS possesses attributes that are relevant and most suitable for the kind of data employed in this study. Among other properties, OLS has minimum variance among all such linear unbiased estimators, which makes it an efficient estimator (Gujarati and Porter, 2009).

3.2 Description of variables

The dependent variable is the CGPA, while the explanatory variables include UTME scores and the geo-political zones of students' state of origin. Table 3 provides a detailed description of the variables.

Table 3. Description of variables and a priori expectations

Variables	Descriptions	A priori Expectations
Dependent CGPA	Cumulative Grade Point Average obtained by the students at the end of the year. It ranges from 0 to 7 points	
Independent		
Age	Age of the student in the year of admission into the university	±
UTME Score	UTME score obtained by the student. The maximum obtainable score is 400	+
Post-UTME Score	Post-UTME score obtained by the student. The maximum obtainable score is 100	+
Agriculture	= 1 if the student is in the Faculty of Agriculture and 0 otherwise	±
Arts	= 1 if the student is in the Faculty of Arts and 0 otherwise	±
Medicine	= 1 if the student is in College of Medicine and 0 otherwise	±
Education	= 1 if the student is in the Faculty of Education and 0 otherwise	±
Law	= 1 if the student is in the Faculty of Law and 0 otherwise	±
Pharmacy	= 1 if the student is in the Faculty of Pharmacy and 0 otherwise	±
Science	= 1 if the student is in Faculty of Science and 0 otherwise	±
Technology	= 1 if the student is in the Faculty of the Technology and 0 otherwise	±
Social Science	= 1 if the student is in the Faculty of Social Sciences and 0 otherwise	±
Veterinary Medicine	= 1 if the student is in the Faculty of Veterinary Medicine and 0 otherwise	

3.3 Data and sources

The university's undergraduate admissions office provided the data for the scores obtained by the students in their UTME, Post-UTME examination as well as their ages and respective faculties of admission, while the examination office in the university provided the CGPA. The empirical model was estimated using Stata 12 software.

4. Results and Discussion

This section contains the empirical analyses of the study. Table 4 gives the descriptive statistics of the variables for the two academic sessions on gender basis. The study participants comprised 1,280 and 1,113 male and female students respectively, admitted through the UTME for the 2014/2015 academic session with an average CGPA of 4.10 and 3.98 respectively. The average age of the male and female students for the session was 18 years, although females were a little younger than males at the point of admission into the undergraduate programme. Furthermore, the average UTME score for the male candidates was found to be higher than that of the female candidates. In the same vein, it was discovered that on average, male candidates outperformed their female counterparts in the Post-UTME with about one percentage point higher than the female candidates. The admission exercise was not conducted for the Faculty of Pharmacy in the 2014/2015 Session.

Table 4. Descriptive Statistics

	2014/2015 Academic Session		**2015/2016 Academic Session**	
	Male (N=1280)	Female (N=1113)	Male (N=1725)	Female (N=1531)
	Mean (Std. Dev)	Mean (Std. Dev)	Mean (Std. Dev)	Mean (Std. Dev)
Dependent				
CGPA	4.10 (1.53)	3.98 (1.47)	3.98 (1.72)	4.02 (1.51)
Independent (Continuous)				
Age	18.48 (3.18)	18.09 (2.37)	19.14 (3.48)	17.98 (2.55)
UTME score	225.05 (17.35)	224.45 (16.91)	242.39 (18.46)	239.87 (19.09)

Post-UTME score	63.27 (8.90)	62.63 (8.26)	61.79 (8.25)	61.81 (7.69)
Faculties				
Agriculture	120 (9.38)	169 (15.18)	135 (7.83)	121 (7.9)
Arts	125 (9.77)	112 (10.06)	256 (14.84)	311 (20.31)
Medicine	241 (18.83)	134 (12.04)	266 (15.42)	222 (14.5)
Education	186 (14.53)	146 (13.12)	250 (14.49)	424 (27.69)
Law	60 (4.69)	60 (5.39)	53 (3.07)	64 (4.18)
Pharmacy	-	-	51 (2.96)	28 (1.83)
Science	267 (20.86)	237 (21.29)	261 (15.13)	163 (10.65)
Technology	91 (7.11)	82 (7.37)	214 (12.41)	20 (1.31)
Social Science	152 (11.88)	136 (12.22)	179 (10.38)	151 (9.86)
Veterinary Medicine	38 (2.97)	37 (3.32)	60 (3.48)	27 (1.76)

Source: Computed by the authors.

In addition, 1,725 male and 1,531 female candidates were admitted through the UTME system for the 2015/2016 academic session; but unlike what operated in 2014/2015, the average performance of females as captured by CGPA was higher than that of their male counterparts. The average age of male candidates was 19.14 years while that of females was 17.98, implying that female candidates were much younger than the male candidates on average at the time of admission; this is similar to the results of the 2014/2015 academic session. However, on average, male candidates recorded higher scores in the UTME than females, while the reverse was the case for the Post-UTME examinations. For the admission exercise of 2014/2015 session, the two most preferred faculties for males were the Faculty of Science (20.86%) and the College of Medicine (18.83%) while the females preferred the Faculties of Science (21.29%) and Agriculture (15.18%). In the 2015/2016 Session, the College of Medicine (15.42%) and the Faculty of Science (15.13%) were the faculties of choice for males. The descriptive statistics for the variables by the different faculties to which the students belong are presented in the appendix (see Table A1). Furthermore, in order to test the direction and strength of relationships between the variables, a correlation analysis was conducted. The results as revealed in Table A2 in the appendix indicate a significant positive relationship between the three indicators of examination scores of the students. However, the age of the

candidates and first year CGPA of the students were negatively related in the 2014/2015 session, while the relationships were positive in the 2015/2016 academic session.

The regression results at the university level for both the 2014/2015 and 2015/2016 academic sessions along gender disaggregation are presented in table 5. The results show that age was a significant positive predictor of academic performance of both male and female students in the 2014/2015 session. Conversely, age was a significant negative determinant of academic performance of males in the 2015/2016 session. Furthermore, both UTME and post-UTME scores were significant positive determinants of the academic performance of males and females across the two sessions. However, post-UTME scores contributed about four times what UTME score contributed to the academic performance of both male and female students at the end of the first year in the University. This supports the findings of previous studies (Agazade et al., 2014; Olaniyan, 2006; Bai et al., 2014) that entry examinations are significant positive determinants of the performance of students in their first year. It also supports the findings by Olaniyan et al. (2006) that the UTME is not the most important determinant of students' academic performance in their first year, although it contributes positively to their performance. For the faculties' dummies, the Faculty of Veterinary Medicine was the reference category for both sessions since it had the lowest number of respondents as well as one of the lowest average JAMB scores in the University.

Furthermore, only the results of the Faculty of Agriculture and the College of Medicine had negative significance. The performance of students (both gender) in both faculties was less than that of the students in the Faculty of Veterinary Medicine for the 2014/2015 session. In the 2015/2016 session, however, the performance of both gender was different. For male students, those in the Faculties of Agriculture, Arts, Education, Law, Science, Technology and Social Sciences performed significantly below those in the Faculty of Veterinary Medicine. The female students in the Faculties of Arts, Education and Social Sciences significantly performed below their counterparts in the Faculty of Veterinary Medicine.

Table 5. Estimation Result (University Level)

	2014/2015 Session		2015/2016 Session	
	Male	Female	Male	Female
Age	0.335***	0.531***	-0.020*	0.001
	(22.867)	(26.494)	(-1.957)	(0.064)
UTME score	0.007***	0.009***	0.017***	0.015***
	(3.669)	(4.809)	(6.810)	(6.555)
Post-UTME score	0.039***	0.035***	0.049***	0.063***
	(7.782)	(6.961)	(6.965)	(9.325)
Faculties (Reference category = Veterinary Medicine)				
Agriculture	-1.426***	-1.892***	-0.629***	-0.124
	(-6.831)	(-10.119)	(-2.626)	(-0.437)
Arts	-0.052	-0.272	-0.768***	-0.624**
	(-0.260)	(-1.489)	(-3.428)	(-2.309)
Medicine	-1.393***	-2.367***	-0.324	-0.552**
	(-6.909)	(-11.771)	(-1.449)	(-2.032)
Education	0.239	-0.026	-1.149***	-0.844***
	(1.240)	(-0.145)	(-5.195)	(-3.186)
Law	0.225	0.014	-0.673**	-0.493
	(0.992)	(0.069)	(-2.185)	(-1.529)
Pharmacy			-0.015	0.263
			(-0.051)	(0.727)
Science	-0.039	-0.183	-1.220***	-0.401
	(-0.207)	(-1.070)	(-5.547)	(-1.455)
Technology	0.305	0.014	-0.745***	-0.195
	(1.465)	(0.074)	(-3.261)	(-0.498)
Social Science	-0.070	-0.148	-1.094***	-0.721**
	(-0.359)	(-0.820)	(-4.662)	(-2.555)
Constant	-5.889***	-9.272***	-2.074***	-3.024***
	(-12.412)	(-18.929)	(-3.455)	(-5.076)
Observations	1,280	1,113	1,725	1,531
Adjusted R-squared	0.511	0.571	0.211	0.225
F-statistic	122.3***	135.6***	39.53***	38.06***

Notes: Standard error are in parentheses.

*, ** and *** significant at $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.

Dependent Variable: CGPA

Source: Computed by the authors.

For the faculty-level estimates of both sessions shown in tables 6a – d, age was significantly and positively related to academic performance for both male and female students in all faculties in the 2014/2015 session. However, in the 2015/2016 session, it positively predicted the academic performance of female students in the Faculty of Education but negatively predicted the male students' performance in the Faculty of Law and in the College of Medicine.

For our variables of interest, the results of the 2014/2015 session show that only in the Faculty of Technology did the UTME score significantly predict the academic performance of students across both gender while it also positively determined the performance of only female students in the Faculty of Arts, Education and Science for the same session. In the 2015/2016 session, on the other hand, the UTME score positively influenced performance across the genders in the Faculties of Agriculture, Medicine, Education, Science and Technology. However, it influenced the performance of only female students in the Faculties of Arts and the Social Sciences.

Nonetheless, post-UTME score produced intriguing results on the predictability of academic performance. In the 2014/2015 session, there was no gender discrimination in the way it predicted academic performance. It was a positive and significant predictor of performance for male and female students in five faculties: Agriculture, Arts, Medicine, Technology and the Social Sciences. It is noteworthy that the effect that the post-UTME score exerted on academic performance was higher than that of the UTME score across the university.

The superiority of the influence of post-UTME score on academic performance over the UTME score continued in the 2015/2016 session, although, with pro-female discrimination in only two faculties. Specifically, post-UTME score positively predicted academic performance across both gender in three faculties – Arts, Medicine and Social Sciences – while it influenced the performance of only female students in the Faculties of Education and Technology.

Table 6a. Estimation Results (Faculty Level - 2014/2015 Session)

	Agriculture		Arts		Medicine		Education	
	Male	Female	Male	Female	Male	Female	Male	Female
Age	0.686***	0.726***	0.924***	1.178***	0.175***	0.271***	0.906***	0.936***
	(11.089)	(14.832)	(11.696)	(12.416)	(9.742)	(9.626)	(14.014)	(14.058)
UTME score	0.010	-0.006	0.007	0.010**	0.008	0.002	0.007	0.012***
	(1.094)	(-0.885)	(1.167)	(2.299)	(1.651)	(0.355)	(1.637)	(2.936)
Post-UTME score	0.033*	0.037***	0.038**	0.023**	0.064***	0.044***	-0.000	0.008
	(1.791)	(2.651)	(2.560)	(2.019)	(6.315)	(3.174)	(-0.035)	(0.634)
Constant	-14.32***	-11.807***	-15.787***	-19.811***	-5.462***	-4.801***	-13.070***	-15.258***
	(-7.823)	(-8.443)	(-8.666)	(-12.637)	(-6.322)	(-4.259)	(-10.555)	(-12.237)
Observations	120	169	125	112	241	134	186	146
Adjusted R-squared	0.585	0.605	0.560	0.690	0.630	0.638	0.545	0.644
F-statistic	56.82***	86.68***	53.51***	83.48***	137.5***	79.28***	74.93***	88.44***

Notes: Standard error are in parentheses.

*, ** and *** significant at $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.

Dependent Variable: CGPA

Source: Computed by the authors.

Table 6b. Estimation Result (Faculty Level - 2014/2015 Session Contd.)

	Law		Science		Technology		Social Sciences	
	Male	Female	Male	Female	Male	Female	Male	Female
Age	0.772***	1.237***	1.399***	1.470***	0.331***	0.520***	0.766***	1.040***
	(7.848)	(16.103)	(34.303)	(35.929)	(6.027)	(5.968)	(10.744)	(12.661)
UTME score	-0.004	0.004	0.001	0.005*	0.020***	0.029***	0.004	0.005
	(-1.076)	(1.295)	(0.213)	(1.934)	(2.655)	(3.547)	(1.052)	(1.612)
Post-UTME score	-0.008	0.028	0.009	0.002	0.068***	0.067***	0.026**	0.024**
	(-0.205)	(1.290)	(1.605)	(0.413)	(4.351)	(3.456)	(2.173)	(2.285)
Constant	-7.062**	-19.844***	-20.594***	-22.407***	-10.001***	-15.375***	-11.682***	-16.458***
	(-2.543)	(-9.550)	(-25.966)	(-29.308)	(-6.867)	(-8.655)	(-8.715)	(-11.771)
Observations	60	60	267	237	91	82	152	136
Adjusted R-squared	0.527	0.818	0.839	0.874	0.609	0.629	0.507	0.620
F-statistic	22.87***	89.51***	461.9***	544.5***	47.65***	46.84***	52.82***	74.39***

Notes: Standard error are in parentheses.

*, ** and *** significant at $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.

Dependent Variable: CGPA

Source: Computed by the authors

Table 6c. Estimation Result (Faculty Level – 2015/2016 Session)

	Agriculture		Arts		Medicine		Education	
	Male	Female	Male	Female	Male	Female	Male	Female
Age	-0.057	-0.020	0.000	-0.028	-0.027	-0.008	0.006	0.047**
	(-1.215)	(-0.542)	(0.016)	(-1.112)	(-1.225)	(-0.293)	(0.267)	(2.036)
UTME score	0.019*	0.024***	0.008	0.013***	0.019***	0.017***	0.017***	0.016***
	(1.941)	(2.777)	(1.478)	(2.744)	(3.136)	(3.354)	(2.667)	(3.129)
Post-UTME score	0.051	0.039	0.056***	0.071***	0.089***	0.102***	0.029	0.033**
	(1.312)	(1.108)	(3.695)	(5.561)	(7.493)	(8.499)	(1.408)	(2.263)
Constant	-2.443	-3.373	-1.594	-3.050***	-5.233***	-6.139***	-2.525*	-3.132***
	(-1.041)	(-1.419)	(-1.261)	(-2.829)	(-4.424)	(-5.680)	(-1.818)	(-2.679)
Observations	135	121	256	311	266	222	250	424
Adjusted R-squared	0.059	0.073	0.103	0.226	0.392	0.485	0.061	0.071
F-statistic	3.78***	4.16***	10.80***	31.09***	57.97***	70.48***	6.43***	11.75***

Notes: Standard error are in parentheses.

*, ** and *** significant at $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.

Dependent Variable: CGPA

Source: Computed by the authors.

Table 6d. Estimation Result (Faculty Level – 2015/2016 Session contd.)

	Law		Pharmacy		Science		Technology		Social Sciences	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Age	-0.067**	-0.009	0.017	-0.312	-0.066*	-0.052	-0.005	-0.061	-0.055	-0.029
	(-2.056)	(-0.266)	(0.221)	(-1.616)	(-1.734)	(-0.999)	(-0.119)	(-0.771)	(-1.638)	(-0.759)
UTME score	0.020	0.002	0.020	0.017	0.022***	0.013*	0.029***	0.050**	0.008	0.014**
	(1.659)	(0.180)	(1.130)	(1.089)	(2.919)	(1.667)	(3.621)	(2.290)	(1.286)	(2.598)
Post-UTME score	0.061	0.020	-0.000	0.012	-0.026	-0.002	0.024	0.219**	0.079***	0.080***
	(1.127)	(0.324)	(-0.008)	(0.154)	(-1.112)	(-0.085)	(0.997)	(2.697)	(4.095)	(4.718)
Constant	-3.471	3.548	-0.112	5.546	0.853	1.708	-4.465**	-19.605***	-2.246	-3.917**
	(-0.684)	(0.732)	(-0.021)	(0.922)	(0.450)	(0.818)	(-2.239)	(-3.068)	(-1.215)	(-2.379)
Observations	53	64	51	28	261	163	214	20	179	151
Adjusted R-squared	0.139	-0.046	-0.033	0.056	0.033	0.007	0.094	0.427	0.124	0.271
F-statistic	3.80***	0.07	0.46	1.54	3.99***	1.36	8.39***	5.71***	9.39***	19.56***

Notes: Standard error are in parentheses.

*, ** and *** significant at $p < 0.1$, $p < 0.05$ and $p < 0.01$ respectively.

Dependent Variable: CGPA

Source: Computed by the authors

In summary, UTME score predicted the performance of both gender only in the Faculty of Technology and only that of females in three faculties – Arts, Education and Science – in the 2014/2015 session. In the 2015/2016 session, it predicted the performance of both gender in five faculties – Agriculture, Medicine, Education, Science and Technology – and only that of females in two faculties – Arts and the Social Sciences. In addition, post-UTME scores predicted the performance of both gender in five faculties – Agriculture, Arts, Medicine, Technology and Social Sciences – in the 2014/2015 session, while it predicted the performance of both gender in three faculties – Arts, Medicine and Social Sciences; and only that of females in two faculties (Education and Technology) in the 2015/2016 session.

5. Conclusion, Summary and Recommendations

The present study interrogated the influence of entrance examinations on the academic performance of first-year undergraduate students of the University of Ibadan in the 2014/2015 and 2015/16 academic sessions. Data from students' records were collected from the University Admissions Office and analysed using the ordinary least squares method. The analyses were conducted on gender basis for the whole university and for the faculties that admitted students for the two sessions.

The results show that UTME and post-UTME scores were significant predictors of academic performance of first-year students at the University of Ibadan. There was a significant positive relationship between the age of the students and their performance, with older students performing better than the younger ones in the first year in the university. Comparatively, the effects of post-UTME scores outweighed that of the UTME scores at both levels of analysis. It was found that UTME scores predicted the performance of both gender in one and five faculties in the 2014/2015 and 2015/2016 sessions respectively, and of females only in three and two faculties in the respective sessions. However, post-UTME scores predicted the performance of both gender in five and three faculties in the 2014/2015 and 2015/2016 sessions respectively and of females only in two faculties in the 2015/2016 session.

This study therefore recommends the continuation of the post-UTME being conducted by various institutions. JAMB and other relevant

stakeholders in the education sector should also strengthen the UTME in order to enhance the selection criteria of potential candidates. Incidentally, the study was conducted using data from the University of Ibadan. It is suggested that this study be replicated for other universities and more than one at a time so that the policy implications will give a broader view of the condition of the Nigerian university system.

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Appendices

Table A1: Descriptive Statistics by Faculty of the Students

	2014/2015				2015/2016			
	Male		Female		Male		Female	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Faculty of Agriculture	***N = 169***		***N=120***		***N=121***		***N=135***	
Age	19.60	1.30	19.56	1.45	17.57	3.28		3.01
UTME score	215.05	11.06	214.41	10.58	228.78	14.99	232.10	16.60
Post-UTME score	57.44	5.39	56.85	5.08	53.78	3.65	54.36	4.07
CGPA	3.28	1.27	3.06	1.42	3.80	1.39	3.60	1.66
Faculty of Arts	***N=112***		***N=125***		***N=311***		***N=256***	
Age	16.90	0.79	16.98	1.12	17.84	2.59	20.38	4.83
UTME score	223.95	17.22	219.37	16.10	242.22	17.55	242.60	17.96
Post-UTME score	63.21	6.83	61.15	6.49	65.00	6.37	64.94	6.74
CGPA	3.75	1.28	3.77	1.47	4.21	1.30	4.13	1.43
College of Medicine	***N=134***		***N=241***		***N=222***		***N=266***	
Age	22.22	3.54	22.90	4.58	17.44	2.72	18.57	3.50
UTME score	230.06	16.35	230.83	17.47	240.67	19.66	248.00	17.51
Post-UTME score	71.37	8.18	71.77	9.17	61.69	8.11	66.94	8.74
CGPA	4.82	1.52	4.91	1.66	4.05	1.53	4.81	1.63
Faculty of Education	***N=146***		***N=186***		***N=424***		***N=250***	
Age	17.03	1.06	17.22	0.98	18.51	3.24	19.92	4.08
UTME score	224.16	17.14	223.81	16.54	234.43	17.51	234.58	18.22
Post-UTME score	59.51	6.13	59.08	6.77	60.33	6.21	59.57	5.66
CGPA	3.94	1.34	4.10	1.24	3.58	1.59	3.36	1.59
Faculty of Law	***N=60***		***N=60***		***N=64***		***N=53***	
Age	17.57	0.70	17.60	1.01	17.86	3.80	19.17	4.74
UTME score	234.65	18.57	236.17	22.60	264.84	12.33	261.74	12.52
Post-UTME score	74.83	2.48	74.68	2.72	76.09	2.28	76.89	2.85
CGPA	4.89	0.96	4.91	1.04	3.75	1.28	3.06	1.42

	2014/2015				2015/2016			
	Male		Female		Male		Female	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Faculty of Science	***N=237***		***N=267***		***N=163***		***N=261***	
Age	16.89	0.98	16.91	0.94	17.34	2.18	18.80	2.88
UTME score	221.01	14.53	221.20	13.44	233.09	15.61	235.19	16.13
Post-UTME score	60.65	7.42	60.18	7.25	56.24	4.53	56.88	5.06
CGPA	3.72	1.57	3.74	1.47	3.74	1.45	3.19	1.81
Faculty of Technology	***N=82***		***N=91***		***N=20***		***N=214***	
Age	17.67	1.40	17.82	1.93	16.55	4.39	17.80	2.95
UTME score	228.21	16.70	226.67	15.94	250.05	15.94	246.90	17.32
Post-UTME score	60.10	6.95	61.73	7.70	55.60	4.33	55.62	5.64
CGPA	4.38	1.64	4.49	1.47	4.17	1.95	3.83	1.77
Faculty of the Social sciences	***N=136***		***N=152***		***N=151***		***N=179***	
Age	17.05	0.79	17.17	1.04	18.15	2.24	19.24	2.92
UTME score	232.14	18.69	231.63	20.23	251.78	17.94	252.25	15.92
Post-UTME score	62.45	6.16	63.07	6.17	66.52	5.68	67.56	5.45
CGPA	4.00	1.15	3.99	1.22	4.36	1.19	4.13	1.40
Faculty of Veterinary Medicine	***N=37***		***N=38***		***N=56***		***N=60***	
Age	17.16	0.99	17.32	1.21	16.85	1.29	17.87	2.28
UTME score	218.70	14.74	226.05	15.18	238.22	15.58	236.28	16.04
Post-UTME score	64.32	7.91	65.18	7.24	57.52	5.93	59.30	6.65
CGPA	4.15	1.38	4.14	1.65	4.30	1.68	4.57	1.94

Source: Computed by the authors

Table A2: Correlation Analysis between CGP and the Explanatory variables

	2015/2016		2014/2015	
	Male	Female	Male	Female
Age	-0.0563***	-0.0672***	0.5184***	0.5574***
	(0.0277)	(0.0052)	(0.0000)	(0.0000)
UTME score	0.3980***	0.3457***	0.3699***	0.3633***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Post-UTME score	0.4180***	0.3808***	0.5076***	0.5241***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)

*** significant at $p < 0.1$

Source: Computed by the authors.