CORRELATION AND REGRESSION: A CASE STUDY OF STUDENT JAMB AND PUTME SCORES FOR THE 2021/2022 SESSION IN THE UNIVERSITY OF BENIN

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UNIVERSITY OF BENIN

BENIN CITY

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A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF STATISTICS,
FACULTY OF PHYSICAL SCIENCE, UNIVERSITY OF BENIN
IN PARTIAL FULFILMENT FOR THE COMPLETION OF BACHELOR OF SCIENCE DEGREE IN STATISTICS

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CERTIFICATION

This is to certify that this project work was carried out by **PRECIOUS OSABOUHIEN OMOSEFE** with Mat. No. **PSC1909279** in the department of statistics, faculty of physical science, university of Benin in partial fulfillment for the completion of bachelor of science (B.sc) degree in statistics.

_____ _____

MR. CYRIL ODIJIE DATE
(PROJECT SUPERVISO

_____ _____

PROF. N. EKHOSUEHI
(HEAD OF DEPARTMENT) DATE

DEDICATION

This project is dedicated to God almighty for his grace, mercy, strength and guidance and to my elder sister for being extremely supportive during my studies.

ACKNOWLEGEMENT

Words are not enough to express my gratitude to God Almighty for the marvelous things He did for me in the course of this research. I also appreciate him for providing the strength, ability and the resources I used in carrying out this research.

I would like to express sincere appreciation to my Supervisor Mr. Cyril Odijie for his supervision, advice and contribution to the success of this research.

I will not be done without appreciating my ever loving mother, Mrs. Bose Omosefe and my sister Mrs. Adesuwa Noghase for their love, care, words of encouragement, financial support and prayers that have gone a long way in keeping me focused. May God bless and keep you in good health to reap the fruit of your labor.

Much thanks to my course mates Chiedoziem Nwaorisa, Wisdom Iyekoetin, Ehijie Sunday Odijie for being a source of inspiration and support throughout this process.

Then to authors whose work were used to gather the facts and data that were required for this project, I duly acknowledge them.

And finally I commend myself for the efforts and hard work put into this work

ABSTRACT

This study investigates the relationship between JAMB and Post-UTME scores at the University of Benin for the 2021/2022 academic session. Using quantitative methods, it explores the correlation and regression between these scores and their predictive power for academic performance. Reviewing existing literature, the study underscores the importance of considering both scores in admissions. Analysis reveals a positive significant but very low correlation between JAMB and PUTME scores and demonstrates JAMB scores having a weak predictive ability for Post-UTME performance. The study advocates for multi-measure assessment in admissions and concludes with recommendations for future research and policy improvements.

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CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

Admission into tertiary institutions in Nigeria is primarily determined by the performance of candidates in two major examinations: the Unified Tertiary Matriculation Examination (UTME) organized by the Joint Admissions and Matriculation Board (JAMB) examination and the Post-Unified Tertiary Matriculation Examination (Post-UTME) organized by various tertiary institutions. These exams play a pivotal role in determining the academic and professional future of Nigerian students.

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 for which 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(Maria, 2017).

Post-UTME tests are approved examinations administered by universities in Nigeria to candidates who have applied for admission to higher education in Nigeria. Each University arranges and administers its post-UTME examination. To be eligible to take this test, a candidate must have registered to the institution and passed the UTME with a grade equal to or higher than the overall UTME and university cut-off points (Ololade, 2022).

However, the credibility of JAMB in predicting students' performance in universities has been questioned as Obioma and Salau (2007) found out that public

examinations like JAMB in Nigeria have credibility problems. It was in the light of the escalating malpractices characterizing public examinations that the then Minister of Education, Mrs. Chinwe Obaji in 2005, during her meeting with the committee on admissions into degree awarding institutions, stated that all candidates seeking admission into universities must sit for the university matriculation examination conducted by JAMB. In addition, universities are to further screen their candidates (Guardian, 2005). This gave rise to the post university matriculation examinations(Nnamdi, 2023).

1.1 Statement of the Problem

Considering the critical role of JAMB and Post-UTME scores in the admission process, there is a need to explore the correlation between these two variables and investigate whether JAMB scores reliably predict performance in the Post-UTME. This study seeks to address this issue by conducting an analysis of the relationship between JAMB and Post-UTME scores of students who applied for admission into the University of Benin for the 2021/2022 academic session.

1.2 Aim and Objectives of the Study

The aim of this study is to conduct an analysis of JAMB scores and post-UTME scores and the statistical relationship between them. The specific objectives are follow;

1. To determine the correlation between JAMB scores and Post-UTME scores.

2. To assess the extent to which JAMB scores predict performance in the Post-UTME.

3. To provide insights into the implications of the findings for the admission process in the university of Benin.

1.3 Significance of the Study

This study is significant for several reasons:

1. Enhancing University Admissions Processes:

Understanding the relationship between JAMB and Post-UTME scores is crucial for optimizing university admissions processes. By elucidating the correlation and regression between these scores, institutions can refine their selection criteria and ensure a more equitable and effective admissions process. This can lead to improved student placement and better alignment between students' academic abilities and the demands of their chosen programmes.

2. Informing Admission Policies and Practices:

Insights gained from this study can inform the formulation and revision of admission policies and practices at universities. Institutions can use the findings to establish more transparent and evidence-based criteria for selecting students, thereby promoting fairness and meritocracy in the admissions process. Moreover, understanding the predictive power of JAMB scores on Post-UTME performance can help institutions identify candidates who are most likely to succeed academically.

3. Contributing to Knowledge Advancement:

This study adds to the body of knowledge on educational assessment and student evaluation in the Nigerian context. By examining the correlation and regression between JAMB and Post-UTME scores, it contributes valuable insights to the

existing literature on university admissions processes and academic performance prediction. Moreover, the study may stimulate further research in related areas, fostering continuous improvement and innovation in educational practice.

Overall, the significance of this study lies in its potential to enhance university admissions processes, inform policy decisions, improve educational outcomes, facilitate evidence-based decision-making, and contribute to knowledge advancement in the field of educational assessment.

1.4 Scope of the Study

This study focuses specifically on the correlation and regression analysis of JAMB and Post-UTME scores among students seeking admission into the University of Benin. The research will be conducted using data collected from the University of Benin during the 2021/2022 academic session.

1.5 Limitation of the Study

The reliability and accuracy of the data used in the study could be a potential limitation, as the analysis relies on JAMB and Post-UTME scores obtained from university records, which may be subject to errors or inconsistencies. Also, the study focuses on a specific academic year (2021/2022) and may not capture temporal changes or trends in university admissions processes. Admission criteria, policies, and practices may vary over time in response to evolving educational reforms, societal trends, or institutional priorities. Furthermore, contextual factors specific to the University of Benin or the Nigerian higher education system may

influence the relationship between JAMB and Post-UTME scores in ways that are not fully accounted for in the analysis.

The methodological approach employed in the study may have certain limitations. For instance, the use of correlation and regression analysis assumes a linear relationship between variables and may not capture more complex patterns or interactions. Alternative statistical techniques or research designs could provide additional insights into the relationship between JAMB and Post-UTME scores. Moreover, the study may be limited by constraints in data collection, analysis, or interpretation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of relevant literature on the relationship between JAMB and Post-UTME scores, correlation analysis, and regression analysis. The literature review aims to contextualize the current study within the existing body of knowledge and identify gaps and areas for further research.

2.2 Theoretical Frameworks

2.2.1 JAMB and PUTME Exam

The Joint Admissions and Matriculation Board (JAMB) is a Nigerian entrance examination board for tertiary-level institutions. The board conducts entrance Unified Tertiary Matriculation Examination for prospective undergraduates into Nigerian universities. The board is also charged with the responsibility to administer similar examinations for applicants to Nigerian public and private monotechnics, polytechnics, and colleges of educations. [1]

The Unified Tertiary Matriculation Examination is a computer-based standardized examination for prospective undergraduates in Nigeria. It is designed to assess problem solving, critical thinking, knowledge of scientific concepts and principles

significance of each subject taken. Prior to 2014 the exam was a paper-and-pencil test; since May 17, 2014, however, all administrations of the exam have been computer-based. [2]

Post-UTME tests are approved examinations administered by universities in Nigeria to candidates who have applied for admission to higher education in Nigeria. Each University arranges and administers its post-UTME examination. To be eligible to take this test, a candidate must have registered to the institution and passed the UTME with a grade equal to or higher than the overall UTME and university cut-off points.

The price of enrolling for the post-UTME examination differs by University. Because the examination is not standardized, it is up to each school in Nigeria to choose how much each candidate would pay for her post-UTME exam (Ololade, 2022).

The Unified Tertiary Matriculation Examination (UTME) used by the Joint Admissions Matriculation Board (JAMB) for admitting students into Universities in Nigeria has been severally criticized as a poor instrument for predicting academic performance of students, the persistence and veracity of the criticisms eventually compelled the managements of the Universities in Nigeria to introduce the PUTME screening exercise to complement UTME. This development has also

evoked intense criticism, generally from the public, but particularly from parents of prospective students. Expectedly, the two admission criteria have become subjects of various studies (Bala et al, 2019).

2.2.2 Correlation Analysis

In statistics, correlation or dependence is any statistical relationship, whether causal or not, between two random variables or bivariate data. Although in the broadest sense, "correlation" may indicate any type of association, in statistics it usually refers to the degree to which a pair of variables are *linearly* related. [3]

The degree of association is measured by a correlation coefficient, denoted by r. It is sometimes called Pearson's correlation coefficient after its originator and is a measure of linear association. If a curved line is needed to express the relationship, other and more complicated measures of the correlation must be used.

The correlation coefficient is measured on a scale that varies from + 1 through 0 to – 1. Complete correlation between two variables is expressed by either + 1 or -1. When one variable increases as the other increases the correlation is positive; when one decreases as the other increases it is negative. Complete absence of correlation is represented by 0. [4]

The correlation coefficient (r) is calculated using the equation

$$\frac{n\sum x_i y_i - \sum x_i \sum y_i}{\sqrt{n\sum x_i^2 - (\sum x_i)^2}\ \sqrt{n\sum y_i^2 - (\sum y_i)^2}}$$

2.2.3 Regression Analysis

In statistical modeling, regression analysis is a set of statistical processes for estimating the relationships between a dependent variable and one or more independent variables. The most common form of regression analysis is linear regression, in which one finds the line (or a more complex linear combination) that most closely fits the data according to a specific mathematical criterion.

In linear regression, the model specification is that the dependent variable y_i is a linear combination of the *parameters* (but need not be linear in the *independent variables*). For example, in simple linear regression for modeling n data points there is one independent variable: x_i and two parameters, β_0 and β_1

Straight line: $y_i = \beta_0 + \beta_1 x_i + e_i$, $i = 1, \ldots, n$.

In the more general multiple regression model, there are p independent variables:

$$y_i = \beta_1 x_{i1} + \beta_2 x_{i2} + \beta_p x_{ip} + e_i$$

where x_{ij} is the i-th observation on the j-th independent variable. If the first independent variable takes the value 1 for all $x_{i1} = 1$ then β_1 is called the regression intercept. [5]

2.3 Relationship Between JAMB and Post-UTME Scores

2.3.1 Predictive Validity of JAMB and Post-UTME Scores:

Previous studies have examined the predictive validity of JAMB and Post-UTME scores in predicting academic performance and success in higher education. Harision et. al. (2020) in their research on the relationship between post utme and utme scores of students admitted into universities in Nigeria found out that candidates' scores in Jamb don't actually represent their true scores or ability, This was so because of the weak relationship that existed between candidates' scores in JAMB and their corresponding score in PUTME In the period under study, the same situation was observed for all the years showing a re-occurring situation. The results of their research work imply that: Jamb scores of candidates differ from their corresponding scores in PUTME.

Several studies on the predictive validity of UTME confirmed its low predictive power as stated by Omodara, (2004) and Oluwatayo, (2003). Negative and inverse

correlation of UTME scores with some external criterions was also investigated by Adeyemo (2008).

Umo and Uezendu (2010) examined the relationship between UME scores and post UME score at the University of Nsukka 2006/2007. Low correlation was obtained.

Busayo (2010) tried to compare the scores of UME and post UME students of the University of Education (TUNEDIK) Ikere Ekiti and reported that 56.5 % of people who passed UME later failed post UME.

Adeniyi and Adeyemi (2019) conducted a study to investigate the predictive validity of JAMB and Post-UTME scores among undergraduate students in a Nigerian university. Their findings revealed a significant positive correlation between JAMB and Post-UTME scores, indicating that higher scores on both examinations were associated with better academic outcomes during students' university education. This suggests that students who performed well on the JAMB examination were more likely to excel in their subsequent academic pursuits, as reflected in their Post-UTME scores.

Chike, Ifedie and Ifedili (2010), conducted the assessment of UME and post UME at the University of Benin, his major findings showed the supremacy of post UME over UME.

Ajayi and Olutokun (2020) similarly explored the relationship between JAMB and Post-UTME scores among students at another Nigerian university. Their study corroborated the findings of Adeniyi and Adeyemi, demonstrating a strong positive correlation between JAMB and Post-UTME scores. These consistent findings across different university contexts highlight the robustness of the relationship between JAMB and Post-UTME scores in predicting academic performance.

Uhunmwuangho and Ogunbadeniyi (2014) in their study to examine the relative strength and effectiveness of UTME as admission criteria for selection into a Nigerian university, using the UTME and Post-UTME scores of 500 candidates five Faculties in University of Benin. The results of the study revealed a low and statistically significant correlation $r = 0.088$ between UTME and Post-UTME scores. The relationship between the scores was inverse and there was a significant difference in the scores of UTME and PUTME ($t = 3.51$, $p < 0.05$). They concluded that, high scores in UTME did not reveal the academic performance of students.

Bala et al (2019) in their research to examine if UTME and PUTME good predictors of students' academic performance in the university the case of kaduna state university, kaduna, Nigeria, The study revealed that candidates scored higher in PUTME than in UTME. The mean score of students in PUTME stood at 249.60, which is higher than the UTME mean scores of 208.24. The result of the scores for UTME reveals that the highest mean score has being increasing over the years with

the highest individual score being recorded in 2015. The study also revealed a significant relationship between UTME and PUTME at 0.05%.

2.3.2 Implications for Academic Performance Prediction

Osakude (2011) did a case study that determined the relative effectiveness of University Matriculation Examination and Post University Matriculation Examination on the final year academic performance of students admitted into Adekunle Ajasin University in 2004/2005 and 2005/2006 sessions. The population consisted of the entire students who were admitted into the University in the two sessions. The researcher adopted descriptive research design and made use of a proforma to collect the UME scores, Post UME scores and their respective classes of degrees. Using Pearson's Product Moment correlation and t-test statistics to analyze the data, findings showed that there was a low relationship between students' scores in UME and Post-UME. More so, Post-UME was more effective than the UME in predicting final performance but the difference was so little.

Ajaja, (2010) examined the influence of these two admission scores (UME and Post-UME) on the students' achievement and found no significant effect on students' final CGPA. He lamented that the irony of it all was that there was a decline in the performance of students admitted with Post-UME screening than UME. Furthermore, in the study carried out by Igwue and Adikwu (2012), a

significant relationship was found between JAMB UME scores and students' performance in 100 level educational psychology course. There was significant difference found between the mean scores when subjected to analysis of variance. They concluded that there is need for a lot more study on this matter and recommended that JAMB should be accorded the benefit of any doubt about the efficacy of its examination scores in relation to performance of the candidates in university until clearly proved otherwise.

Ayodele et al (2019) in their research on Students' Scores in UTME Chemistry as Predictor of Performance in First Year University Chemistry Course. Found that their research revealed a low positive but significant correlation between UTME Chemistry scores and First year university chemistry examination scores ($r = .170$). UTME accounted for only 2.9% of the variance in first year Chemistry examination scores ($R^2= 0.029$). Also, the results revealed a significant difference in the UTME Chemistry scores and CHM 101 ($p<0.05$ level of significance) with students performing better in the 100 level University Chemistry course; mean score=45.75± 0.92) than in UTME Chemistry (44.14± 0.50). There was a significant effect of gender on UTME scores ($p<0.05$) but no significant effect of gender on university Chemistry scores.

Igwe and Adikwu (2012) found a significant relationship between students' scores in three examinations, namely: UTME, PUTME, and 100-Level Psychology course,

Faculty of Agriculture, Federal University of Agriculture, Makurdi, and thus concluded that the UTME has a predictive validity for performance in the university.

The prediction of students' CGPA from their performance in UTME and PUTME in KASU reveals that UTME and PUTME are good predictors of students' final class of degree. Bala et al (2019)

2.3 Summary of Literature Review

The literature review has provided a theoretical foundation for understanding correlation and regression analysis, JAMB and PUTME exams, and student performance. Additionally, it has highlighted previous empirical studies that have investigated the relationship between entry qualification scores and academic performance, as well as other factors that influence student performance. This review will inform the research methodology and data analysis for the current study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This study will employ a correlational research design to investigate the relationship between JAMB and PUTME scores. A correlational design is appropriate as the study aims to determine the extent to which changes in JAMB scores are associated with changes in PUTME scores, and vice versa (Creswell & Creswell, 2018). Furthermore, regression analysis will be used to examine the predictive power of JAMB scores on PUTME scores and PUTME scores on JAMB scores.

3.2 Population of the Study

The target population for this study will consist of all candidates that sat for the University of Benin post UTME after siting for the UTME during the 2021/2022 academic session.

3.3 Sample Size and Sampling Technique

The study will employ a simple random sampling technique to select a representative sample from the target population. The sample size will be determined using the Yamane formula for calculating sample size from a finite population (Yamane, 1967):

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size

N = population size

e = level of precision or sampling error

From the dataset obtained, the number of candidate is 13,736 (N = 13,736) and the desired level of precision is 0.05, the sample size would be calculated as follows:

$$n = \frac{13736}{1 + 13736(0.05)^2}$$

$$n = \frac{13736}{1 + 13736(0.0025)}$$

$$n = \frac{13736}{1 + 34.34}$$

$$n = \frac{13736}{35.34}$$

$n = 388.68 \approx 389$

Therefore, the required sample size for this study would be approximately 389 Candidates.

3.4 Data Source

The data for this study will be obtained from secondary sources, specifically the University of Benin's ICT unit, which maintains records of students' JAMB and PUTME scores. The secondary data will include:

Demographic information: Gender, reg number.

JAMB and PUTME scores: The JAMB and PUTME scores of the students from the 2021/2022 admission cycle.

Aggregate: The aggregate scores of the students from the 2021/2022 admission cycle.

The data will be requested from the ICT unit in a suitable format (e.g., Excel spreadsheet or CSV file) for statistical analysis. Necessary permissions and approvals will be obtained from the relevant authorities at the University of Benin before accessing the secondary data.

3.5 Data Quality Assessment

Since the data for this study will be obtained from secondary sources (university records), the validity and reliability of the data need to be assessed to ensure its quality and suitability for the intended analysis. The following measures will be taken:

Data completeness: The secondary data will be examined to ensure that it is complete and does not contain missing values or inconsistencies that could affect the analysis.

Data accuracy: Steps will be taken to verify the accuracy of the secondary data by cross-checking a random sample of records against the original source documents or through consultation with relevant university officials.

Data consistency: The data will be checked for internal consistency to identify any potential errors or discrepancies in the recorded values.

If any issues or concerns regarding the quality of the secondary data are identified during the assessment process, appropriate measures will be taken to address them. This may involve data cleaning, data transformation, or consulting with the data providers to resolve any discrepancies or inconsistencies.

The assessment of data quality is crucial to ensure the validity and reliability of the findings derived from the secondary data analysis.

3.6 Data Collection Procedure

Since this study will be utilizing secondary data from the University of Benin's ICT unit, the data collection procedure will involve the following steps:

Obtaining necessary approvals: Prior to accessing the secondary data, necessary approvals will be obtained from the relevant authorities at the University of Benin, including the ICT unit and any other departments or committees responsible for data management and privacy.

Specifying data requirements: A formal request will be made to the ICT unit, clearly specifying the required data elements, such as JAMB scores, PUTME scores and student demographics, for the 2021/2022 academic session.

Data format and transfer: The ICT unit will be consulted regarding the preferred format for data transfer (e.g., Excel spreadsheet or CSV file) and secure methods for transmitting the data to ensure data privacy and confidentiality.

Data handling and storage: Upon receiving the secondary data, appropriate measures will be taken to ensure secure handling and storage of the data. This may

involve encryption, password protection, and adhering to any data protection policies or guidelines established by the University of Benin.

Data preparation: Before proceeding with data analysis, the secondary data will undergo necessary preparation steps, such as cleaning, formatting, and transforming the data to ensure its suitability for the intended statistical analyses.

Throughout the data collection process, strict adherence to ethical principles and data privacy regulations will be maintained to protect the confidentiality of the students' information.

3.7 Data Analysis Techniques

The collected data will be analyzed using appropriate statistical methods, with the aid of the Statistical Package for Social Science (SPSS) and microsoft excel. The following analyses will be conducted:

3.7.1 Correlation Analysis

Correlation analysis, specifically the Pearson correlation coefficient, will be used to measure the strength and direction of the linear relationship between the following variables:

JAMB scores and PUTME scores

JAMB scores and student performance

PUTME scores and student performance

3.7.2 Regression Analysis

Linear regression analysis will be performed to examine the predictive power of JAMB scores on PUTME. The regression model will include JAMB scores as independent variable and PUTME scores as the dependent variable.

Specifically, the regression model is stated as follows:

PUTME = $\beta_0 + \beta_1$ JAMB + e

Where ,

PUTME = Post-UTME scores (dependent variable).

JAMB = JAMB scores (independent variable).

β_0 = Intercept of the regression line.

β_1 = Slope of the regression line.

Chapter 4

Data Presentation and Analysis

4.1 Demographic Information of Candidates

The data obtained from the University of Benin's ICT unit included demographic information for the PUTME candidates during the 2021/2022 academic session.

Table 4.1 and figure 4.1 presents a summary of the demographic characteristics of the candidates.

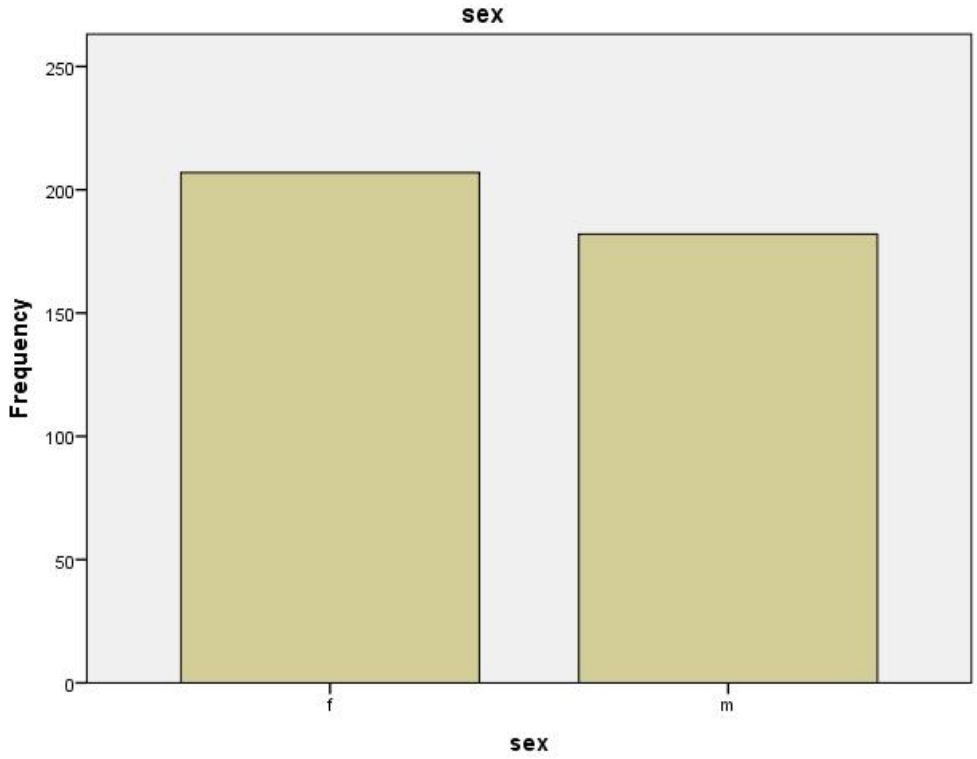


Figure 4.1

	Frequency	Valid Percent
F	207	53.2
M	182	46.8
Total	389	100.0

Table 4.1

Interpretation: from the sample data, we can see that we have more female than male candidates which accounts for 53.2% and 46.8% of the sample respectively.

4.2 Descriptive Statistics

Table 4.2 provides the descriptive statistics for the JAMB, PUTME and aggregate scores of the candidates, including the mean, standard deviation, minimum, and maximum values.

	N	Minimum	Maximum	Mean	Std. Deviation
jamb_score	389	200	326	231.92	27.470
Aggregate	389	36.92	85.25	56.1573	5.85594
screening_score	389	23.3400	90.0000	54.330437	7.9024887

Interpretation: The descriptive statistics provide an overview of the distribution of JAMB and PUTME scores in the sample of 389 students.

JAMB Scores:

- The mean JAMB score for the sample was 231.92, indicating that, on average, students scored around 232 out of a possible maximum score (400).
- The standard deviation of 27.470 suggests a moderate level of variation in JAMB scores among the students.

- The minimum JAMB score in the sample was 200, while the maximum score was 326, reflecting a wide range of performance on the examination.

PUTME Scores:

- The mean PUTME score for the sample was 54.330437, suggesting that, on average, students scored around 54 out of a possible maximum score (100).
- The standard deviation of 7.9024887 indicates a relatively smaller variation in PUTME scores compared to JAMB scores.
- The minimum PUTME score in the sample was 23.3400, while the maximum score was 90, demonstrating a considerable range in performance on the examination.

Overall, the descriptive statistics reveal that the JAMB scores had a higher mean and a larger standard deviation compared to the PUTME scores, indicating that the JAMB examination may have been more challenging or had a wider distribution of scores. However, both examinations exhibited a considerable range of scores, suggesting that students varied in their performance on these entrance examinations.

4.3 Correlation Analysis

Pearson's correlation coefficient was used to measure the strength and direction of the linear relationship between JAMB and PUTME scores.

Table 4.3 provides the correlation between JAMB and PUTME Scores.

	Jamb Score	Screening score
Jamb Score	1	0.254
Screening score	0.254	1

Table 4.3

Interpretation: The analysis revealed a statistically significant positive correlation between JAMB and PUTME scores ($r = 0.254$, $p < 0.05$). This indicates that higher JAMB scores are associated with higher PUTME scores, and vice versa. This indicates a weak to moderate positive relationship, meaning that higher JAMB scores are associated with higher PUTME scores, and vice versa. However, the correlation coefficient of 0.254 suggests that the strength of this relationship is relatively low.

The p-value of less than 0.05 indicates that the correlation is statistically significant at the 5% level of significance. This means that the probability of observing such a

correlation coefficient by chance alone, if the true correlation in the population is zero, is less than 5%.

While the positive correlation suggests that students who performed well on the JAMB examination also tended to perform well on the PUTME examination, and vice versa, the relatively low correlation coefficient (0.254) implies that there are other factors contributing to the variation in PUTME scores besides JAMB scores alone. Therefore, caution should be exercised in using JAMB scores as the sole predictor of PUTME performance.

4.4 Regression Analysis

Regression analysis was performed to examine the predictive power of JAMB and PUTME scores (screening score) on each other.

4.4.1 Regression Analysis of JAMB Scores on PUTME Scores

The regression model with JAMB scores as the independent variable and PUTME scores(screening score) as the dependent variable was statistically significant ($F = 26.67$, $p < 0.05$). The model explains 6.4% of the variance in PUTME scores ($R^2 = 0.064$).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.254[a]	.064	.062	7.6534021

a. Predictors: (Constant), jamb_score

Table 4.4.1a (model summary of regression analysis)

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	1561.983	1	1561.983	26.667	.000[b]
	Residual	22668.356	387	58.575		
	Total	24230.339	388			

a. Dependent Variable: screening_score

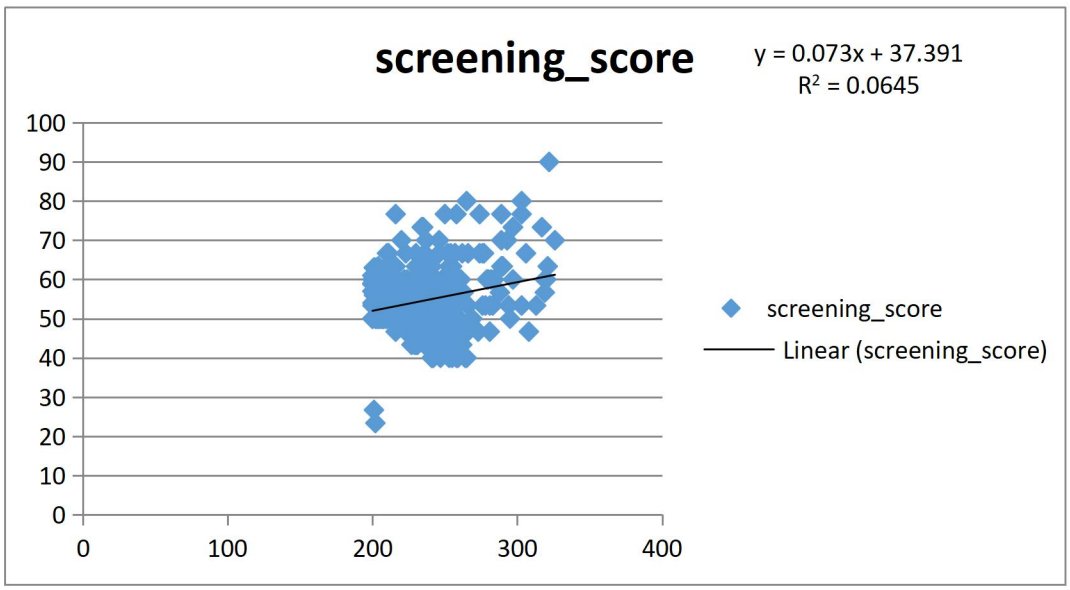
b. Predictors: (Constant), jamb_score

Table 4.4.1b (ANOVA result of screening score)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	37.391	3.303		11.320	.000
jamb_score	.073	.014	.254	5.164	.000

a. Dependent Variable: screening_score

Table 4.4.1c (coefficients of screening score)



CHAPTER 5

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of Findings

The primary objective of this study was to investigate the correlation and regression between JAMB and PUTME scores for students admitted to the University of Benin during the 2021/2022 academic session. The study employed a correlational research design and utilized secondary data obtained from the university's ICT unit.

The key findings of the study are as follows:

- There was a significant but weak positive correlation between JAMB and PUTME scores ($r = 0.254$, $p < 0.05$), indicating that higher JAMB scores were associated with higher PUTME scores, and vice versa.
- The regression analysis revealed that JAMB scores significantly predicted PUTME scores, explaining 6.4% of the variance in PUTME scores ($F = 26.67$, $p < 0.05$, $R^2 = 0.064$).
- Similarly, PUTME scores significantly predicted JAMB scores, accounting for 6.4% of the variance in JAMB scores ($F = 26.6$, $p < 0.05$, $R^2 = 0.064$).

We can see that there is a significant correlation between JAMB and PUTME scores, and that JAMB and PUTME scores significantly predict each other based on the results of the correlation and regression analyses.

5.2 Conclusion

The findings of this study clearly demonstrate a positive correlation and predictive relationship between JAMB and PUTME scores. Students who performed well on the JAMB examination also tended to perform well on the PUTME examination, and vice versa. This suggests that both examinations measure similar skills and abilities, or that performance on one examination is a good predictor of performance on the other.

The regression analyses further confirmed the predictive power of JAMB and PUTME scores on each other, with each examination score accounting for a substantial proportion of the variance in the other score. These results have important implications for the admission process at the University of Benin and other tertiary institutions in Nigeria.

Given the positive correlation and predictive power between JAMB and PUTME scores, institutions could potentially rely on either examination as a reliable indicator of a student's academic potential and readiness for tertiary education. However, it is important to note that while these examination scores are significant predictors, there may be other factors that contribute to the remaining variance in scores, such as individual differences in preparation, test-taking strategies, and other cognitive or non-cognitive variables.

Overall, the findings of this study provide valuable insights into the relationship between JAMB and PUTME scores, which can inform admissions policies and practices at the University of Benin and other institutions in Nigeria.

5.3 Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

5.3.1 Recommendations for Practice

- The University of Benin and other tertiary institutions in Nigeria should consider giving more weight to either JAMB or PUTME scores in their admission processes, as the strong correlation and predictive power between the two examinations suggest that relying on one examination may be sufficient.
- Institutions should review their admission criteria and policies to ensure that they are aligned with the findings of this study and are effectively identifying and admitting students with the highest academic potential.
- Institutions should consider providing additional support and resources to students who may have performed poorly on either the JAMB or PUTME examination, as their performance on one examination may not accurately reflect their true academic abilities.

5.3.2 Recommendations for Further Studies

- Future research should investigate the potential factors that contribute to the remaining variance in JAMB and PUTME scores not accounted for by the predictive models in this study.
- Longitudinal studies should be conducted to examine the long-term predictive validity of JAMB and PUTME scores on students' academic performance and success throughout their tertiary education.

- Comparative studies should be conducted to analyze the correlation and regression between JAMB and PUTME scores across different institutions and regions in Nigeria, to identify any potential variations or patterns.
- Qualitative studies should be undertaken to explore students' perceptions and experiences with the JAMB and PUTME examinations, as well as their views on the admission processes and criteria used by tertiary institutions.
- Researchers should investigate the potential impact of factors such as socio-economic status, educational background, and demographic characteristics on students' performance on the JAMB and PUTME examinations, and how these factors may influence the predictive power of the examinations.

By implementing these recommendations and continuing to conduct research in this area, the University of Benin and other tertiary institutions in Nigeria can further refine and improve their admission processes, ensuring that they identify and admit the most qualified and academically prepared students.

Figure 4.4.1 (Screening Score scatter plot)

Figure 4.4.1 shows the scatter plot of screening score and JAMB score, with its corresponding R^2 and regression equation, the graph shows the linear relationship between the variables.

4.4.2 Regression Analysis of PUTME Scores on JAMB Scores

The regression model with PUTME scores as the independent variable and JAMB scores as the dependent variable was also statistically significant ($F = 26.6$, $p < 0.05$). The model explains 6.4% of the variance in PUTME scores ($R^2 = 0.064$).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.254[a]	.064	.062	26.604

a. Predictors: (Constant), screening_score

Table 4.4.2a (model summary of regression analysis)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18874.481	1	18874.481	26.667	.000[b]

	Residual	273916.886	387	707.796		
	Total	292791.368	388			

a. Dependent Variable: jamb_score

b. Predictors: (Constant), screening_score

Table 4.4.2b (ANOVA result of JAMB score)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	183.966	9.383		19.606	.000
	screening_score	.883	.171	.254	5.164	.000

a. Dependent Variable: jamb_score

Table 4.4.2c (coefficients of JAMB score)

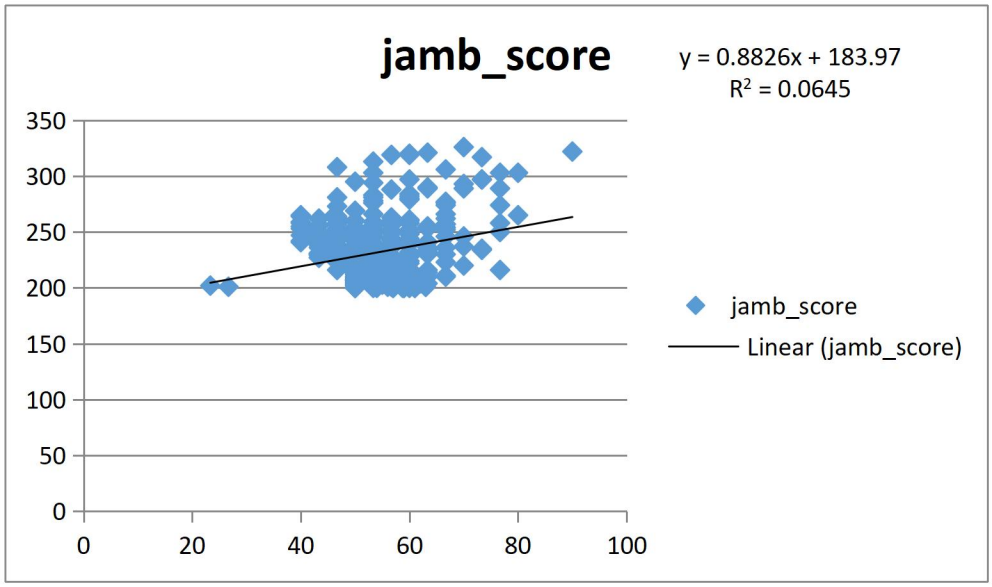


Figure 4.4.2 (JAMB Score scatter plot)

Figure 4.4.2 shows the scatter plot of screening score and JAMB score, with its corresponding R^2 and regression equation, the graph shows the linear relationship between the variables.