



CORRELATIONAL ANALYSIS OF PUBLIC EXAMINATIONS IN NIGERIA

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Abstract:

The purpose of the study was to find the similarities and differences in public examinations. The study specifically examined the similarities and differences in terms of candidates' performance rate, malpractice rate, examination credibility scores, impact on the society, as well as acceptance by the society in WAEC and NECO. The study adopted descriptive research of the survey type. A questionnaire designed by the researchers titled: Questionnaire on Students' Preference for WAEC or NECO, was used to gather data from 100 respondents (i.e. newly admitted undergraduate students who have just recently written WAEC and/or NECO examinations), in order to elicit sample of response on the two examination bodies, through simple random sampling technique. Data was also obtained through the annual performance analysis reports given by the Chief Examiners of WAEC and NECO on the pages of several newspapers through the internet. WAEC performance analysis was additionally obtained from National Bureau of Statistics (NBS) through its official website on the internet. The research question raised was answered using percentage, means as well as ratio while the research hypotheses were tested using Spearman Rank order method. Based on the findings of the study, it was concluded that WAEC is more recognized by the society, especially foreign institutions, than NECO, and the pass rate in WAEC is higher than that of NECO. It was also concluded that WAEC provides more feedback to stakeholders (students, parents and teachers) in the form of examiners reports and performance analysis than NECO. As a result, students' enrollment for WAEC was higher than for NECO. It was also concluded that both WAEC and NECO have similar construct as well as criterion-related validity, but the cases of examination malpractices is more rampant in WAEC than in NECO. Based on the conclusion, it was recommended that NECO should make examination materials such as syllabus, series of past questions, performance analysis as well as examiners' reports available to students preparing for external examinations. NECO should also try and schedule its examination to hold earlier than WAEC to see if its performance rate would improve. Both examination bodies should increase efforts to curb examination malpractices to heighten their integrity and credibility in the society which they serve

Index Terms - WAEC, NECO, Public examination, Exam Malpractice

INTRODUCTION

Education is crucial to the development of any society. One way of measuring the quality of education is through public examinations. In Nigeria, public examinations have been used to measure the performance of students over the years, and they are used to evaluate the performance of students at different levels of their education (Ejimofofor & Oranu, 2021). Public examinations are characterized by being set or controlled by agent or agencies external to the schools from which students come. These examinations refer are usually organized and conducted by governmental agencies. These exams serve as a means of measuring the knowledge, skills, and abilities of students. Public examination is an appropriate measure of teacher and school accountability. It exacts pressure on various stakeholders such as students, teachers, parents, schools, government, and even examination agencies.

Public examinations are standardized and recognized examinations put in place to sustain education standard of a society (Bamidele & Adewale, 2013). By standard is to say that such public examination has undergone and passed validity as well as reliability tests, so as to justify the trust that the society has in it. Standards in public examinations can be divided into two, which are content standard and achievement standard. Content standards refer to the specific knowledge, concepts, and skills that students are expected to master in a particular subject area or course. It describes the curriculum or syllabus that students should learn and the topics or themes they should be familiar with while achievement standards, on the other hand, refer to the expected level of proficiency or competency that students should demonstrate in a particular subject area or course. In other words, achievement standards indicate what students should be able to do with the knowledge, concepts, and skills outlined in the content standards. Content standards provide the basis for creating the assessment instruments, while achievement standards are used to evaluate students' performance based on predetermined levels of proficiency or competency.

In Nigeria, public examinations are conducted by different examination bodies such as the West African Examinations Council (WAEC), the National Examinations Council (NECO), and the Joint Admissions and Matriculation Board (JAMB) (Okoye, 2018). Students take these exams at various stages of their education, starting from primary school through tertiary institutions. The West African Examinations Council (WAEC) and the National Examinations Council (NECO) are two prominent examination boards known in Nigeria, for administering end-of-academic-programme examination at secondary school level, with the purpose of issuing certificates to the graduating students. This study focuses attention on relationship and differences between WAEC and NECO Senior Secondary School examinations.

The West African Senior Secondary Certificate Examinations (WASSCE) is a secondary school examination conducted by the West African Examinations Council. It is taken by graduating students across West African countries, including Nigeria in the secondary school final year and is used to determine their readiness for tertiary education (Jekayinfa & Olugbuyiro, 2018). The National Examination Council (NECO) is a parallel examination Board which was inaugurated as autonomous examination Board to break the monopoly of WAEC exam (Tella, Ayeni, & Popoola, 2018).

Public examinations in Nigeria are essential for several reasons. First, they help to ensure that students are equipped with the necessary skills and knowledge required for their chosen fields. Secondly, public examinations in Nigeria provide a level-

playing field for all students to access quality education and aspire to their dreams (Adeya & Musa, 2018). These exams also help to maintain a high standard of education in the country. Public examinations form a basis for certification, motivation and even selection of students for some specific tasks.

The relationship between WAEC and NECO in terms of students' performance is a subject of considerable research interest in Nigeria. Several studies have investigated this relationship, using different methodologies and approaches. One such study is "Performance Appraisal of NECO and WAEC SSCE: An Empirical Evidences from Mathematics and Physics" which was conducted by Salako, Adegoke and Ogundipe (2017). The study compared the relationship between secondary school students' performances in both WAEC and NECO examinations in Osun State. The researchers made use of t-test to determine the level of significant difference as well as Pearson Product Moment Method (PPMM) to determine the correlation coefficients between students' performance in WAEC and NECO. The study showed that students passed well in NECO than in WAEC in either subject (Mathematics and Physics). WAEC and NECO successes in both subjects, are not correlated, and that difference of means between the two groups are statistically significant.

On the other hand, comparison of the Performance of Secondary School Students in WAEC and NECO Examinations in Nigeria," by Ajayi and Awogbemi, (2012), compared the performance of students in WAEC and NECO examinations, and examined the similarities and differences between the two examinations. The study used secondary data from the National Examinations Council and the West African Examinations Council. The sample size was 4000 students who sat for both examinations in Nigeria. The study used Pearson Product Moment Method correlation analysis and found that there was a strong positive correlation between the performance of students in WAEC and NECO examinations. Similarly, Ajayi and Awogbemi, (2012) who compared students' result in WAEC and NECO in Osun State found out that there is a statistically significant relationship between the two examinations. Consistent with these findings is Bamidele and Adewale's (2013) opinion that both WAEC and NECO are two comparable examination bodies whose examinations are equivalent. In the same vein, Ajayi and Awogbemi (2012) who conducted correlational analysis of students' performance in WAEC and NECO in Osun state, found out that there is a significant positive correlation in the mathematics performance of students in WAEC and NECO.

A meta-analysis published in the Journal of Education and Research in Nigeria by Udofia, Kenneth & Udoh (2017) also examined the relationship and the differences between WAEC and NECO examinations in terms of several sub-variables such as students' performance, distribution of examination items across learning domains, the themes as well as topics in their syllabi. Thus, the objective and essay question papers set by WAEC and NECO in 2011 and 2012 were obtained. A sample of 2000 was selected for the study using a purposive sampling technique. The exam questions for both WAEC and NECO examinations were analysed using chi-square and t-test analyses at 0.05 level of significance. The results showed that WAEC and NECO were similar taking the distribution of questions across the level of the cognitive domain, the themes and the topics in the syllabi into consideration. Similarly, it has been observed that the objective test items of the two examination bodies are equal in number, as well as in the number of options assigned to each test item (Anagbogu, Ihejimaizu & Uba, 2014).

However, the findings from Thomas, Uchegbue, Ugbe and Bekorfema's (2016), study titled 'Comparative Item Analysis of Students' WAEC and NECO Mathematics Objectives Test Item Scores', was a different outcome. The study compared psychometric properties of students' scores in WAEC and NECO Mathematics objectives test item. A total sample of 250 SS3 students was selected using stratified random sampling technique, from 10 senior secondary schools for the study. Data collected was analysed using the independent t-test statistics. The result of the data analysed showed that item difficulty index and discrimination index of WAEC significantly differ from that of NECO in terms of items.

Omirin and Ayesimoju (2021) also conducted a meta-analysis, which investigated the factors responsible for variation in the findings of studies conducted on the psychometric properties of WAEC and NECO examinations in the last 20 years. The study examined some of the study characteristics such as sample size, year of examination question as it influences the effect size generated for each study. 45 relevant studies were used as sample for the study out of which useful 65 hypotheses were extracted for the meta-analysis. Findings from the study revealed heterogeneity and difference in the effect size of the studies while it was ascertained that the year of examination questions used by different studies was said to significantly influence the effect size of the studies.

The difference in the two exam bodies can also be investigated in term of examination malpractices. Examination malpractice has been described as the massive and unprecedented abuse of rules and regulations pertaining to external examinations, ranging from the setting of such examinations through the taking of the examinations, their marking and grading, to the release of the results and the issuance of certificates (Bahago, Gotip & Bulus, 2023). Research shows that malpractices is gradually on the rise as the year advances. Record of malpractices in NECO between the year 2000 to 2003 was (4. 61, 5.61, 13.28 and 19. 66) % respectively while the record of malpractices in WAEC between 2000 and 2005 was (6.22, 7.04, 6.54, 9.16 and 10.64)% respectively, which gave average of 10. 87% and 16.68% for NECO and WAEC respectively.

NEED OF THE STUDY.

WAEC and NECO are two parallel examination Boards in Nigeria. All things being equal, the two exams are supposed to be equivalent to each other, such that the equivalence increases the chances that every student (who has completed their secondary school academic syllabus) has. However, it is often not clear to students and perhaps, some other stakeholders, as whether NECO exam is truly equivalent to WAEC exam or vice versa. This lack of clarity makes it difficult for students in determining which of the two exams to register for, or whether to register for both. It seems that lack of clarity can also make it difficult for many parents to determine how best to support students in preparing for these exams and for post-secondary educational opportunities. By conducting a correlational analysis of WAEC and NECO exam results, this study aims to shed light on the relationship between these two exams and provide valuable insights for education stakeholders in Ekiti State, Nigeria. The purpose of the study was to find the similarities and differences between WAEC and NECO examinations. The study specifically examined the similarities and differences in terms of candidates' performance rate, examination credibility scores, impact on the society, as well as acceptance by the society.

RESEARCH METHODOLOGY

The study adopted descriptive research of the survey type. A questionnaire designed by the researchers titled: Questionnaire on Students' Preference for WAEC or NECO, was used to elicit sample of response on the two examination bodies. Data were also obtained through the annual performance analysis reports given by the Chief Examiners of WAEC and NECO on the pages of several newspapers through the internet. WAEC performance analysis was additionally obtained from National Bureau of Statistics (NBS) through its official website on the internet. The research question raised was answered using percentage, means as well as ratio while the research hypotheses were tested using Spearman Rank order method.

Population and Sample

The population for this study was made up of all the newly admitted undergraduate students who have just recently written WAEC and/or NECO examinations. Samples of 100 respondents were selected from the Mathematics Department in the Colleges of Education through simple random sampling technique.

Data and Sources of Data

- For this study secondary data has been collected. From the website both **performance rate** and **malpractice rate** were obtained from pages of newspapers online, such as Vanguard, The Nation, The Guardian, premium times, punch, etc. <https://punchng.com/waec-releases-2022-wassce-results-withholds-365564/> , [WAEC releases 2018 May/June result, reveals pass rate - Daily Post Nigeria. Records](#) from National Bureau of Statistics (NBS) from [fc1723f76928&psq=Internal+waec+2022%2c+nigeria+performance+analysis&u=a1aHR0cHM6Ly9uaWdlcmllbnN0YXQuZ292Lm5nL2Rvd25sb2FklzEyNDEyMTM&ntb=](https://www.nbs.gov.ng/publications/2022/05/waec-2022-performance-analysis)
- Societal Recognition (by UK institutions)** [University of Salford](https://www.salford.ac.uk/international/your-country/nigeria) WAEC Yes NECO Yes
[University of Lincoln](https://www.lincoln.ac.uk/internationalcollege/entryrequirements/) WAEC Yes NECO No
[University of Hertfordshire](https://www.herts.ac.uk/international/guidance-for-your-region/africa/nigeria) WAEC Yes NECO Yes
[Queen Margaret University](https://www.qmu.ac.uk/study-here/international-students/information-for-your-country/nigeria/) WAEC Yes NECO No
[London South Bank University](https://www.lsbu.ac.uk/international/your-country/nigeria) WAEC Yes NECO No <https://www.lsbu.ac.uk/international/your-country/nigeria>
- Availability and accessibility of materials (syllabus, past questions, Examiners' review and reports)** Though NECO may have its way of providing its feedback to the public, it is not as accessible as WAEC's Examiners' review and reports. For example, WAEC created a web page/website where examiner's review of past questions and the attendant report were made available online, on every subject.

Research Questions:

A question was raised to guide this study:

- What are the comparisons in public exam indices?
- What is the level of exam malpractice in the public exam?

Research Hypotheses

The following null hypotheses were postulated and tested in this study:

1. There is no significant relationship between students' performance rate in WAEC and NECO examinations
2. There is no significant correlation between credibility scores of WAEC and NECO examinations?

RESULTS AND DISCUSSION

Results

Research Question 1: What are the comparisons in public examinations indices?

Tables 1: *Descriptive statistics of WAEC and NECO*

S/N	ITEMS	WAEC	NECO	% Difference
1.	Exam preference by respondents	83	17	66
2.	Choice of Exam taken by respondents	95	55	40
3.	Respondents' satisfaction	59	13	46
4.	Respondents' dissatisfaction	41	06	35
5.	Highness of exam reliability as perceived by respondents	87	13	74
6.	Highness of exam level of difficulty as perceived by respondents	75	28	47
7.	Accessibility of syllabus, past question and performance analysis as perceived by respondents	100	05	95
8.	Highness of exam's grading standard	79	00	79
9.	Relevance of exam as perceived by respondents	83	17	66
10.	Recommendable exam as perceived by respondents	88	12	76

Table 1 revealed that all the respondents disclosed that they have access to WAEC materials such as syllabus, past questions and performance analyses towards preparing for their public exam while only 5% reported accessibility of NECO exam resources such as exam past questions. It was revealed that WAEC had higher scores in all the items than NECO did. It was revealed that WAEC resources such as syllabus and past questions are absolutely accessible by the students while NECO resources were scarcely available to students. Exam preference had a percentage difference of 66%; respondents' satisfaction had a percentage difference of 46%; exam's grading standard had a percentage difference of 79%; Relevance of exam had a percentage difference of 66% while Recommendable exam had a percentage difference of 76%.

Research question 2: What is the level of exam malpractice in the public exam?

Tables 2: Descriptive statistics of WAEC and NECO Malpractice level

Year	% of Malpractice in WAEC	% of Malpractice in NECO	Diff. in % of Malpractice
2019	11.33	3.53	
2020	13.98	2.77	
2021	10.90	1.63	
2022	22.83	0.13	
2023	16.28	0.07	
Average	15.06	1.63	13.43

Table 2 revealed that there are differences in the level of examination malpractice of WAEC and NECO. It was revealed that the percentage of exam malpractice of WAEC is higher than that of NECO each year between 2019 and 2023. It was also revealed that the mean of percentage of exam malpractice of WAEC and NECO had a difference of 13.43%.

Hypothesis 1: There is no significant relationship between students' performance rate in WAEC and NECO examinations

Table 3: Correlation between WAEC and NECO students' performance

WAEC (X)	NECO (Y)	R _x	R _y	d ² = (R _x - R _y) ²	Correlation coefficient, r
64.18	71.50	5	3	4	- 0.100
65.24	73.89	4	1	9	
81.71	71.64	1	2	1	
76.36	60.74	3	5	4	
79.81	61.60	2	4	4	
∑d ²				22	

Table 3 revealed that there is a weak negative correlation in the performance rate of WAEC and NECO, which affirms that there is no significant relationship between students' performance rate in WAEC and NECO examinations. Hence, the null hypothesis is not rejected.

Hypothesis 2: There is no significant correlation between credibility scores of WAEC and NECO examinations

Table 4: Correlation between Credibility scores of WAEC and NECO examination

Indices	WAEC (%)	NECO (%)	Correlation coefficient, r
Malpractice rate	15.06	1.63	0.03
Pass Rate	73.46	68.87	
Societal Recognition (by parents & foreign institutions)	86.00	14.00	
Recommendation (by students, teachers, parents & councilors)	88.00	25.00	
Availability and accessibility of materials (syllabus, past questions)	100.00	5.00	
Examinee's Preference	88.25	24.25	

Table 4 revealed that there is a weak positive correlation between the credibility scores of WAEC and NECO. This implies that the null hypothesis is not rejected. Hence, there is no significant correlation between credibility scores of WAEC and NECO examinations. This implies that WAEC and NECO examinations do not have the same credibility scores in terms of acceptance, recognition and recommendation.

DISCUSSION

The study investigated the correlation between WAEC and NECO examinations in Ekiti State. Table 1 revealed that all the respondents disclosed that they have access to WAEC materials such as syllabus, past question and performance analyses towards preparing for their exams while only 5% reported accessibility of NECO exam resources such as exam past questions. Also, to substantiate this finding, the researchers found out that NECO past questions are not easily come by in the bookshops in Ekiti State. This implies that those students who wrote NECO SSCE had probably practiced WAEC series of past questions for their NECO exams. Thus, it could be inferred that the syllabus of these two examination bodies are similar if the students could use WAEC series of past questions to prepare for NECO and still pass.

It was revealed that WAEC had higher scores in all the questionnaire's items than NECO did and the difference in their scores was not less than 35%. More respondents preferred WAEC to NECO (% Diff. =66%). 46% more respondents showed satisfaction with WAEC than with NECO and more respondents than for NECO believed that WAEC has higher grading standard (% Diff.= 79%) while 83% and 86% agreed to WAEC's relevance and recommendation respectively over NECO. This findings contradicts the findings of Bamidele and Adewale (2013), who submitted that the two examination bodies are comparable and equivalent.

Table 1b also revealed that there is a wide difference in the level of examination malpractice of WAEC and NECO. It was revealed that the percentage of exam malpractice of WAEC is higher than that of NECO each year between 2019 and 2023. And it was also revealed that the mean of percentage of exam malpractice of WAEC and NECO had a difference of 13.43%. Dividing the average percentage of malpractice of WAEC by NECO's, gives a simple ratio of 9:1, which implies that for every

single case of malpractice recorded in NECO exam, there is an expectation of nine cases in WAEC. This could possibly be due to peoples' anticipation and desperateness. The pressure from parents on candidates to pass WAEC could cause them to want to pass at all cost, which could result in high record of examination malpractices in WAEC than in NECO.

Table 2 revealed that there is a weak negative correlation in the performance rate of WAEC and NECO. This shows that students' pass rate in WAEC does not predict students' pass rate in NECO. This is in agreement with the submission of Salako, Adegoke and Ogundipe (2017) that WAEC and NECO successes were not correlated, and that difference of means between the two groups were statistically significant. However, the findings of the study disagree with the findings of Ajayi and Awogbemi, (2012), who found that there was a strong positive correlation between the performance of students in WAEC and NECO examinations.

Table 3 revealed that there is a positive but weak correlation between the credibility scores of WAEC and NECO. This implies that WAEC and NECO examinations do not have the same credibility scores in terms of acceptance, recognition and recommendation. This findings is in variance with the findings of Udofia, Kenneth & Udoh (2017) whose results showed that WAEC and NECO were similar taking the distribution of questions across the level of the cognitive domain, the themes and the topics in the syllabi into consideration. But it agrees with Thomas, Uchegbue, Ugbe and Bekorfema's (2016) that item difficulty index and discrimination index of WAEC significantly differ from that of NECO in terms of items.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study, it was concluded that: Students' enrollment for WAEC was higher than for NECO. WAEC is more recognized by higher institutions, especially foreign institutions, than NECO. WAEC provides more feedback to stakeholders (students, parents and teachers) in the form of examiner's report and performance analysis, than NECO does. Examination malpractices is more in WAEC than in NECO. The financial burden of registering rampant for WAEC is greater than that of NECO. Both WAEC and NECO have similar construct as well as criterion-related validity.

It was therefore recommended that:

1. NECO should make examination materials such as syllabus, series of past questions, performance analysis as well as examiner's reports, available to students preparing for external examinations.
2. NECO should try and schedule its exam to hold before WAEC to see if its performance rate will increase. This will equally help NECO to prove the validity, reliability as well as credibility of its exam to the society.
3. Universities as well as other tertiary institutions should endeavour to recognize the results of both WAEC and NECO equally, to prevent the society from discriminating between WAEC and NECO results.
4. WAEC should increase efforts to curb its candidates from involving in examination malpractices, in order for it to maintain or heighten its v credibility.
5. A candidate should prepare adequately and just register for one of the two exams, as they are parallel exams.

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