



Item Analysis of National Examination Council Senior School Certificate Examination Economics Objective Tests

Leonard Chinaedum ANIGBO, Ph. D
Science & Computer Education Department
Enugu State University of Science & Technology,
Enugu State, Nigeria
+234-806-354-3596
drleanigbo@gmail.com, leoanigbo@esut.edu.ng

ABSTRACT

The study was conducted to investigate the psychometric properties of National Examinations Council (NECO)'s multiple choice Economics test items for 2009-2011 academic sessions. Three research questions guided the study. The survey research design was adopted. The population for the study was nine thousand seven hundred and five students that sat for economics using for the three year under study. Internal consistency of the instrument was established using Kuder-Richardson formula 20 (KR 20) which gave reliability index of .79. Item difficulty, item discrimination and distracter indices were computed to answer the research questions. The findings showed that the items achieved acceptable psychometric indices. The researcher recommended among others that Federal Ministry of Education and National Education Research Development Council (NERDC) should ensure that items analysis are carried out for all test packages used in all public examinations in Nigeria.

Keywords: Item Difficulty, Examinations, psychometric indices, testing

INTRODUCTION

Effective teaching and learning cannot be said to have taken place without appropriate and adequate testing. The test development process (Payne 1968, Thorndike 1982; Adomitic 1974; Ali, Ezeadi and Ogbazi 1982; Oladunu, Ajaji and Ogunbayo 1996 and Anigbo, 2006) include content analysis, review of instructional objectives, development of test blueprint/table of specification, item writing, face validation, item review, trial testing, item analysis, item selection, test assembly, final testing and lastly norming of the test. This process is necessary especially for examinations that affect a large population like the Schools Certificate Examinations. For any item to be worthy of being administered to the respondents, it ought to undergo item analysis which involves the statistical analysis of individual items that are in the test. Three indices are usually sought in the psychometric analysis of items. These include: the difficulty index, discrimination index, and distracter index (Nworgu; 1992). For any item to be worthy of inclusion in the test package, it must have satisfactory psychometric indices. In other words, such an item must be of average difficulty, and must discriminate between the bright and the dull students. Each option in an item must also be able to distract effectively.

In Nigeria, National Examinations Council (NECO) administers tests in all subjects taught in the secondary schools from year to year, including Economics, for the Senior Secondary Certificate Examinations (SSCE). It also conducts the National Common Entrance Examinations for admission into the Unity School (Ogbonna, 2015). There are two kinds of items generated by NECO in Economics for SSCE. They are: the essay test and the multiple choice items. The essay is divided into 2 (two) sections tagged Sections A & B. The candidate is expected to answer one (1) question from section A and Four (4) from section B. The multiple choice test package contains 60 items or questions. Each item consists of a stem and five response options lettered A, B, C, D & E. This research deals with the multiple choice items used by NECO for the SSCE in Economics. No one is sure that NECO multiple choice items in Economics SSCE are of average difficulty or whether the items discriminate effectively. Such public examination generated items like that of NECO ought to undergo item analysis satisfying the three indices of item analysis.

Item analysis involves the analysis of individual items in the test. After the item have been subjected to statistical analysis, those that passed the analysis are selected for the final form of the test while those that failed are either discarded or modified and tried out again. It investigates the performance of items considered individually either in relation to some external criterion or in relation to the remaining items on the test. These analyses evaluate the quality of items and of the test as a whole. For actual statistical analysis of the items the procedure is to compare the responses of the students in the upper one third and the lower one third continuums on the basis of total test scores. The responses that have been made to each test item by testees in the two reference groups are tabulated. The Item Difficulty (p), Item Discrimination (d) and the Distracter Patterns are the measures sought.

The Item Difficulty, also called Item Facility, (p) is the percentage of students that correctly answered the item (Crocker & Algina, 1986). The difficulty index ranges from 0.00 - 1.00. The higher the difficulty index, the easier the item is understood to be. On the other hand, Item Discrimination measures how an item discriminates between the higher and lower achievers. A good item, then, is the one that favors the higher achievers while not favoring the lower achievers. In computing the discrimination index, d, first score each student's test and rank order the test scores. Next, the 27% of the students at the top and the 27% at the bottom are separated for the analysis. 27% is used because it has shown that this value will maximize differences in normal distributions while providing enough cases for analysis. There need to be as many students as possible in each group to promote stability, at the same time it is desirable to have the two groups be as different as possible to make the discriminations clearer. According to Kelly (as cited in Popham, 1981) the use of 27% maximizes these two characteristics. The discrimination index, d, is the number of people in the upper group who answered the item correctly minus the number of people in the lower group who answered the item correctly, divided by the number in each of the groups (which, of cause, are equal). When more students in the lower group than in the upper group select the right answer to an item, the item actually has negative validity. Assuming that the criterion itself has validity, the item is not only useless but is actually serving to decrease the validity of the test. (p. 87). An ideal item should have a "d" of +1.0 but realistically it could range from +0.30 to +1.0.

Distracters, also called foils, are the incorrect options in a multiple choice item. The quality of the distracters influences student performance on an exam item. Although the correct answer must be truly correct, it is just as important that the distracters be incorrect. Distracters should appeal to low scorers who have not mastered the material whereas high scorers should infrequently select the distracters. Distracter analysis seeks to find out how many students who chose the various options and specifically whether the options appeal more to the dull students than the bright students. A discrimination index or discrimination coefficient should be obtained for each option in order to determine each distracter's usefulness (Millman & Greene, 1993). Mathematically, the Distracter Index is gotten by subtracting the number from the upper group who chose the option from the number from the lower group that chose the option and dividing by the number in the upper and lower groups. Options with positive distracter indices are usually deemed more effective.

While NECO administers SSCE Economics test from year to year, there is paucity of research into the psychometric properties of her tests. Item analysis is done with individual items. If the psychometric properties of the items of NECO Economics multiple choice test items in SSCE are poor, it is likely to negatively affect the students' achievement in economics. This may be one of the reasons why some students achieve poorly in Economics SSCE. It therefore became necessary to find out the psychometric properties of Economics multiple choice test items. For this investigation, the researcher used the 2009-2011 NECO exam questions.

Three research questions guided the study:

1. What are the item difficulty indices of each item in NECO Senior School Certificate Examination multiple choice Economics 2009, 2010 and 2011?
2. What are the item discrimination indices of each item in NECO Senior School Certificate Examination multiple choice Economics for 2009, 2010, 2011?
3. What are item distracter indices of each item in NECO Senior School Certificate Examination multiple choice Economics for 2009, 2010, 2011?

METHODOLOGY

The survey research design was adopted. According to Ali, Ezeadi, & Ogbazi, (1982)), a survey research design can be defined as a descriptive study which seeks to document and describe what exists, or the present status of existence or absence of what is being investigated. Nworgu (2003) also defined it as one in which a group of people or items considered to be representative of the group are studied and the result generalized on the entire group. The population consists of all the 9,705 NECO candidates that sat for SSCE in 2008, 2009 and 2010 in all the 27 public Senior Secondary Schools in Enugu Education Zone. Data obtained from NECO showed that the population for 2009, 2010 and 2011 were 3016, 3169 and 3520 respectively. Out of this, 384 SS3 candidates who sat for NECO examinations in Economics were sampled for the study. The instruments for data collection are the three NECO multiple choice test packages for Economics for 2009, 2010 and 2011. Each of these packages was generated by NECO and contains 60 multiple choice items. The research questions were answered using frequencies and percentages.

RESULTS

Research Question 1

What are the item difficulty indices of each item for 2009, 2010 and 2011 NECO SSCE multiple choice items?

Table 3: Item difficulty indices (p-value) of each item in the NECO Economics Multiple Choice test items for 2009, 2010 and 2011.

Year	2009			2010			2011		
Items	No of Stdts who atmpd an item	No of Stdts with correct answer	P-Value	No of Stdts who atmpd an item	No of Stdts with correct answer	P-Value	No of Stdts who atmpd an item	No of Stdts with correct answer	P-Value
1	110	98	0.8652	128	115	0.8673	127	90	0.6186
2	109	97	0.8636	128	97	0.6837	127	88	0.5979
3	110	86	0.7303	125	96	0.6947	126	85	0.5729
4	110	83	0.6966	124	101	0.7553	124	87	0.6064
5	110	76	0.618	125	95	0.6842	124	68	0.1915
6	110	78	0.6404	124	90	0.6383	125	80	0.5313
7	110	82	0.6854	126	98	0.7083	126	82	0.5464
8	110	84	0.7079	125	84	0.5684	124	85	0.5895
9	110	82	0.6854	125	102	0.7579	124	92	0.6632
10	109	78	0.6477	125	104	0.7789	124	95	0.7097
11	109	90	0.7841	124	101	0.7553	124	86	0.6
12	109	76	0.625	123	103	0.7849	124	80	0.6196
13	110	82	0.6854	124	88	0.617	119	89	0.6667
14	107	78	0.6628	124	101	0.7553	120	95	0.7253
15	109	80	0.6705	123	106	0.8172	120	92	0.6923
16	109	84	0.7159	123	83	0.5699	120	82	0.5824
17	109	71	0.5682	124	99	0.734	120	73	0.4835
18	110	95	0.8315	123	88	0.6237	120	94	0.7143
19	110	73	0.5843	123	94	0.6882	119	95	0.7416
20	109	76	0.625	123	99	0.7419	119	89	0.6667
21	108	71	0.5747	122	85	0.5914	118	88	0.6629
22	109	80	0.6705	122	82	0.5652	119	87	0.6444
23	110	80	0.6629	120	98	0.7556	119	95	0.7333
24	108	72	0.5862	122	93	0.6848	119	96	0.7444
25	110	85	0.7191	122	90	0.6522	121	76	0.5109
26	110	77	0.6292	122	101	0.7717	119	89	0.6667
27	110	100	0.8876	122	102	0.7826	119	82	0.5889
28	110	89	0.764	115	79	0.5765	117	97	0.7727
29	110	79	0.6517	120	71	0.4556	118	87	0.6517
30	110	89	0.764	120	83	0.5889	118	97	0.764

31	110	82	0.6854	118	73	0.4886	118	87	0.6517
32	108	90	0.7931	119	81	0.573	116	90	0.7011
33	106	78	0.6706	118	79	0.5568	118	69	0.4494
34	107	72	0.593	119	106	0.8539	118	83	0.6067
35	109	86	0.7386	119	89	0.6629	118	79	0.5618
36	109	84	0.7159	118	79	0.5568	118	83	0.6067
37	105	88	0.7976	120	98	0.5444	118	85	0.6292
38	106	81	0.7059	120	98	0.7556	118	87	0.6517
39	107	93	0.8372	121	86	0.6154	118	92	0.7079
40	108	95	0.8506	120	84	0.6	118	86	0.6404
41	108	73	0.5977	119	89	0.6629	118	79	0.5618
42	101	70	0.5698	119	88	0.6517	118	89	0.6742
43	104	81	0.7229	117	79	0.5632	118	97	0.764
44	108	62	0.4713	119	104	0.8315	118	91	0.6966
45	105	71	0.5952	117	69	0.4483	118	74	0.5056
46	104	89	0.8193	117	83	0.6092	118	90	0.6854
47	102	73	0.642	116	60	0.3488	118	69	0.4494
48	101	84	0.7875	116	69	0.4535	118	99	0.7865
49	104	94	0.8795	115	91	0.7176	118	80	0.573
50	104	76	0.6627	116	98	0.7907	118	74	0.5056
51	102	80	0.7284	115	74	0.5176	118	76	0.5281
52	105	83	0.7381	114	80	0.5952	118	73	0.4944
53	103	46	0.439	114	70	0.4762	118	87	0.6517
54	104	76	0.6627	116	94	0.7442	118	85	0.6292
55	104	68	0.5663	115	78	0.5647	118	85	0.6292
56	103	72	0.622	115	95	0.7647	118	99	0.7865
57	104	69	0.5783	119	101	0.7722	118	79	0.5618
58	103	73	0.6341	116	90	0.6977	118	75	0.5169
59	106	73	0.6118	116	92	0.7209	118	81	0.5843
60	105	87	0.7857	116	99	0.8023	118	92	0.7079

For the three years under study, no item achieved a difficulty index below 0.3. On the other hand, 22 items in 2009; 21 in 2010 and 11 achieved above 0.7. For the three years under study, 54 (30%) out of the 180 items have difficulty indices above 0.7.

Research Question 2

What is the discrimination index of each item in NECO 2009, 2010 and 2011 multiple choice items?

Table 4: Item discrimination indices (q-value) of each item in the NECO multiple choice Economics achievement test for 2009, 2010 and 2011.

Year	2009			2010			2011		
Items	No of Stdts who atmpd an item	No of Stdts with correct answer	q-Value	No of Stdts who atmpd an item	No of Stdts with correct answer	q-Value	No of Stdts who atmpd an item	No of Stdts with correct answer	q-Value
1	110	98	0.1348	128	115	0.1327	127	90	0.3814
2	109	97	0.1364	128	97	0.3163	127	88	0.4021
3	110	86	0.2697	125	96	0.3053	126	85	0.4271
4	110	83	0.3034	124	101	0.2447	124	87	0.3936
5	110	76	0.382	125	95	0.3158	124	68	0.8085
6	110	78	0.3596	124	90	0.3617	125	80	0.4688
7	110	82	0.3146	126	98	0.2917	126	82	0.4536
8	110	84	0.2921	125	84	0.4316	124	85	0.4105
9	110	82	0.3146	125	102	0.2421	124	92	0.3368
10	109	78	0.3523	125	104	0.2211	124	95	0.2903

11	109	90	0.2159	124	101	0.2447	124	86	0.4108
12	109	76	0.375	123	103	0.2151	121	86	0.3804
13	110	82	0.3146	124	88	0.383	119	89	0.3333
14	107	78	0.3372	124	101	0.2447	120	95	0.2747
15	109	80	0.3295	123	106	0.1828	120	92	0.3077
16	109	84	0.2841	123	83	0.4301	120	82	0.4176
17	109	71	0.4318	124	99	0.266	120	73	0.5165
18	110	95	0.1685	123	88	0.3763	120	94	0.2857
19	110	73	0.4157	123	94	0.3118	118	95	0.2584
20	109	76	0.375	123	99	0.2581	119	89	0.3333
21	108	71	0.4253	123	85	0.4086	118	88	0.3371
22	109	80	0.3295	122	82	0.4348	119	87	0.3556
23	110	80	0.3371	120	98	0.2444	119	95	0.2667
24	108	72	0.4138	122	93	0.3152	119	96	0.2556
25	110	85	0.2809	122	90	0.3478	121	76	0.4891
26	110	77	0.3708	122	101	0.2283	119	89	0.3333
27	110	100	0.1124	122	102	0.2174	119	82	0.4111
28	110	89	0.236	115	79	0.4235	117	97	0.2273
29	110	79	0.3483	120	71	0.5444	118	87	0.3483
30	110	89	0.236	120	83	0.4111	118	97	0.236
31	110	82	0.3146	128	115	0.1327	118	87	0.3483
32	108	90	0.2069	128	97	0.3163	116	90	0.2989
33	106	78	0.3294	125	96	0.3053	118	69	0.5506
34	107	72	0.407	124	101	0.2447	118	83	0.3933
35	109	86	0.2614	125	95	0.3158	118	79	0.4382
36	109	84	0.2841	124	90	0.3617	118	83	0.3933
37	105	88	0.2024	126	98	0.2917	118	85	0.3708
38	106	81	0.2941	125	84	0.4316	118	87	0.3483
39	107	93	0.1628	125	102	0.2421	118	92	0.2921
40	108	95	0.1494	125	104	0.2211	118	86	0.3596
41	108	73	0.4023	124	101	0.2447	118	79	0.4382
42	107	70	0.4302	123	103	0.2151	118	89	0.3258
43	104	81	0.2771	124	88	0.383	118	97	0.236
44	108	62	0.5287	124	101	0.2447	118	91	0.3034
45	105	71	0.4048	123	106	0.1828	118	74	0.4944
46	104	89	0.1807	123	83	0.4301	118	90	0.3146
47	102	73	0.358	124	99	0.266	118	69	0.5506
48	101	84	0.2125	123	88	0.3763	118	99	0.2135
49	104	94	0.1205	123	94	0.3118	118	80	0.427
50	104	76	0.3373	123	99	0.2581	118	74	0.4944
51	102	80	0.2716	123	85	0.4086	118	76	0.4719
52	105	83	0.2619	122	82	0.4348	118	73	0.5056
53	103	46	0.561	120	98	0.2444	118	87	0.3483
54	104	76	0.3373	122	93	0.3152	118	85	0.3708
55	104	68	0.4337	122	90	0.3478	118	85	0.3708
56	103	72	0.378	122	101	0.2283	118	99	0.2135
57	104	69	0.4217	122	102	0.2174	118	79	0.4382
58	103	73	0.3659	115	79	0.4235	118	75	0.4831
59	106	73	0.3882	120	71	0.5444	118	81	0.4157
60	105	87	0.2143	120	83	0.4111	118	92	0.2921

Generally the items achieved between 0.1124 and 0.8085 discrimination indices. The ideal index is between +0.3 and +1.0. For 2009, 24 items achieved below 0.3, for 2010, 27 items achieved below 0.3 and in 2011, 12 items achieved below 0.3 giving a total of 63 items for the three years under study.

Research Question 3

What is the item distracter index of each item in NECO SSCE multiple choice item of 2009, 2010 and 2011?

Table 5: Item distracter indices of each item in the NECO multiple choice economics test items for 2009, 2010 and 2011.

Year Items s/n	2009					2010					2011				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
1.	01818	0.0000	-----	0.0303	0.0303	---	0.0606	0.0606	0.0303	0.0909	-----	-	0.0909	0.0909	0.1515
2.	0.0303	0.0303	-----	0.0303	0.0303	0.0000	0.3636	0.0606	---	0.0909	0.1212	-	0.0606	0.0000	---
3.	0.0000	-----	0.1212	0.0909	0.0000	0.0606	0.1818	0.0909	-----	0.0909	0.0303	-----	0.0303	0.0000	0.0909
4.	0.0606	-----	0.0606	0.0606	0.0000	0.1818	----	0.1212	0.1515	0.1212	0.0909	0.0606	-	-----	-
5.	0.0909	0.0909	-0.1212	0.1212	-----	-----	0.1515	0.1515	0.1515	0.0909	0.1818	-----	-	0.0000	0.1818
6.	0.0000	0.0909	0.1515	----	0.1212	0.0606	0.1515	0.1818	0.0303	----	0.1212	0.1818	0.0000	-----	-
7.	-----	0.0606	0.1212	0.0000	-	-----	0.0909	0.1212	0.0303	0.0303	0.1212	0.0000	0.1818	-----	0.0606
8.	0.0303	0.0606	-----	-	0.0303	0.0000	0.1212	-----	0.3030	0.0606	-	0.1818	0.0000	0.1515	0.0000
9.	0.1212	0.0303	-0.0606	0.0909	----	-	----	0.1212	0.1515	0.0909	0.1212	0.0909	0.0000	0.0000	----
10.	0.0000	-	0.1818	-----	0.1515	0.0909	-----	0.1818	0.1212	0.1212	0.1212	0.1818	0.0000	0.1212	----
11.	0.0909	0.0303	0.1212	0.0303	----	0.1515	0.0909	-----	0.1515	0.1515	-	0.0606	0.0606	0.0303	-
12.	0.0606	0.0000	0.2424	-----	0.0303	0.0606	-----	0.1212	0.2121	0.0909	0.0606	0.0909	-----	-	0.0606
13.	0.0909	----	0.0303	0.0606	0.0000	-----	0.0606	0.1515	0.0303	0.1212	0.0909	0.0606	0.0606	0.0606	-----
14.	0.0909	0.0606	0.0000	0.0000	----	0.0909	0.1212	0.1515	0.0303	-----	0.0909	0.1515	0.0606	-----	0.2424
15.	0.0909	0.0303	-0.0303	-----	0.1515	0.0606	0.0606	0.0909	0.0303	-----	-----	0.1818	0.0606	0.1212	0.0909
16.	-----	0.1515	0.0606	0.0909	0.0000	0.1212	---	-	0.0000	0.1212	0.1212	0.0303	0.1212	----	0.0606
17.	0.1818	0.0606	0.0909	0.0606	-----	-----	0.2121	0.3333	0.0303	0.0909	0.0606	0.1818	0.0909	-----	0.1212
18.	0.0606	0.0606	-----	0.0303	0.0909	-----	0.1212	0.0909	0.0909	0.1212	0.1212	0.0000	-----	0.0606	0.1212
19.	----	0.0909	0.1818	0.0606	0.0000	0	0.0606	-----	0.0909	-	0.1212	0.0909	-----	0.1212	0.0909
20.	0.1212	0.0606	----	0.0606	-	0.1515	0.1515	-----	0.1212	0.1212	0.0909	-----	0.0909	0.1212	0.0909
21.	0.0606	0.0606	0.2121	----	0.0000	-	0.0000	0.1212	----	0.1818	0.0909	0.0909	0.1212	-----	-0.1515
22.	0.0909	0.0303	0.0909	0.1818	-----	0.0606	-----	0.3333	0.2121	0.0606	0.1212	0.0303	0.0909	0.1515	----
23.	0.0606	0.0303	0.0909	-----	0.2121	-----	0.1212	0.1212	0.0909	0.0909	0.1212	0.1212	0.1212	0.2121	----
24.	0.0303	0.0909	0.1212	0.1212	-----	0.0303	0.1515	0.0606	-----	0.1515	0.0909	0.0909	-----	-	0.1212
25.	0.0606	0.1515	-----	0.0606	0.0606	0.1212	----	0.2424	0.1212	0.1515	0.1212	0.0303	0.1515	0.0000	----
26.	0.0303	0.1212	0.0606	-----	0.0909	0.0909	0.1818	0.1515	0.1818	----	0.1212	-----	0.0606	0.1515	0.0303
27.	0.1212	-----	0.0303	0.0303	0.0303	0.1212	0.0909	0.1818	0.0606	-----	0.1212	0.0606	-----	0.0909	0.0606
28.	-----	0.0303	0.0909	0.0303	0.0000	0.1212	0.0909	0.0606	---	0.0606	0.1818	-----	0.2121	0.0606	0.0606
29.	0.2727	-----	0.0303	0.0000	0.0606	0.0303	0.1212	0.2121	----	0.1212	0.1515	0.0909	0.0606	0.0909	----
30.	----	0.0303	0.0303	0.1818	0.0606	-----	0.0909	0.1818	0.0909	0.3030	0.1515	0.1212	-----	0.0606	0.1212
31.	0.3030	0.0606	0.1212	-----	0.1515	0.0909	0.1212	0.1515	-----	0.1212	0.0606	-----	0.0909	0.1212	0.1515
32.	-	-	-0.0606	----	0.0000	0.0909	0.1212	0.2727	----	0.0909	0.1212	0.1212	-----	0.0606	0.0909
33.	-	-	-0.0000	-	----	0.1212	---	0.0606	0.0606	0.0000	0.1818	0.1212	0.0303	-----	0.0909
34.	0.0606	0.0909	-----	0.0606	-	-----	0	0.1212	0.1515	0.0909	-----	0.1515	0.1515	0.0606	0.0606
35.	0.0303	-----	-0.1515	0.0303	-	0.0303	0.1818	-----	0.1818	0.1212	0.1515	0.0909	0.0909	-----	0.0606
36.	0.0606	0.0606	0.0606	-----	0.0606	-	0.2121	0.1818	0.1818	0.1212	0.1515	0.0909	0.0909	-----	0.0606
37.	0.2121	0.0606	----	-	0.0303	0.1818	---	0.1515	0.0909	0.1515	0.1515	0.1515	0.0909	0.0606	-----
38.	0.0909	0.0606	-----	0.0606	0.0000	0.1818	0.0606	0.1818	0.1515	-----	0.1212	0.1515	0.0606	----	0.1212
39.	0.1515	0.0606	0.0303	-----	0.0909	---	0.1212	0.1212	0.0606	0.0606	0.1515	0.0909	0.1212	0.1212	----
40.	-----	0.1212	0.0303	0.0909	0.0909	0.1818	0.1818	----	0.1212	0.2121	0.0606	0.0606	0.0909	-----	0.0606
41.	0.1212	-----	0.0000	0.1515	0.0303	0.0909	----	0.1515	0.0909	0.1818	0.0606	0.0606	0.0303	0.0303	----
42.	0.1212	0.0000	0.0606	-----	0.1212	0.1515	-----	0.2727	0.1212	0.1818	0.0909	0.0303	-----	0.0606	0.0909
43.	0.0909	0.1212	0.0303	-----	0.0000	----	0.0909	0.2727	0.1515	0.2121	0.2424	0.0606	0.1212	0.0606	-----
44.	0.0909	0.1515	-----	0.2121	0.1515	0.0000	0.0000	-----	0.0303	0.0606	0.0606	-----	0.0909	0.0909	0.0606
45.	0.0303	-	-0.1212	0.1212	-----	0.0909	0.0303	---	0.0909	0.0909	0.1515	0.1212	0.1212	0.0303	----
46.	0.0303	-----	0.0909	0.0909	0.0606	0.0909	----	0.0606	-	0.0909	0.0606	----	0.0000	0.1212	0.0909
47.	0.0606	0.0909	-----	0.1212	0.0909	0.1212	-----	0.1212	0.1212	0.1818	-	0.1515	0.0606	0.1212	0.1212

47.	0.0909	0.0606	0.0909	0.1212	-----	0.0303	0.0909	0.1818	-----	0.0909	0.1212	0.0303	0.0909	--	0.1212
48.	-	-----	0.0909	0.0909	0.0606	0.0000	----	0.1515	0.0909	0.2727	----	0.1212	0.1212	0.1212	0.0909
49.	-----	0.2121	0.2424	0.0303	0.1212	----	0.1212	0.1818	0.1515	0.1212	0.1515	0.1515	0.0909	-----	0.1515
50.	0.0303	0.0909	-----	0.0303	0.1212	----	0.1212	0.1212	0.1212	0.1212	0.0909	0.1818	----	0.1212	0.1212
51.	0.0303	0.0606	0.4545	0.2424	0.0909	0.2727	---	0.0909	0.0000	0.1212	-----	0.0606	0.0606	0.0606	0.0000
52.	0.1212	0.0909	----	0.2424	0.1212	0.0606	0.0606	0.1818	----	0.1818	0.0909	0.0303	0.1515	0.1212	-----
53.	----	0.0000	0.0909	0.0303	0.1212	0.0000	----	0.1515	0.0303	0.2424	-----	0.1212	0.0303	0.1212	0.0909
54.	0.0606	-----	0.0606	0.1212	0.0606	----	0.1212	0.0606	0.0303	0.0909	0.1212	0.1818	0.1818	-----	0.1515
55.	----	0.1515	0.1515	0.0909	0.1212	0.1515	0.0606	0.1515	----	0.1212	-----	0.2424	0.0909	0.0303	0.1212
56.	0.0000	----	0.0909	0.0000	0.0606	----	0.1515	0.1212	0.0303	0.0909	-----	0.1212	0.0909	0.0909	0.0303
57.	----	0.2424	0.0606	0.0000	0.0303	0.0909	0.1515	-----	0.0909	0.1515	0.1515	0.0303	-----	0.1818	0.1212
58.	0.0909	----	0.0000	0.1212	0.0909	0.1212	0.1515	-0.454	----	0.1212	0.0303	----	0.0303	0.0606	0.0909
59.	0.0909	0.0606	0.2727	----	0.0909	0.1212	0.0606	0.1212	----	0.1515					
60.	0.0303	0.0303	-----	0.1212	0.0606	-----	0.1212	0.0606	0.0909	0.0909					

For a 60 item objective test package with five options there will be $4 \times 60 = 240$ distracters and for 3 years (2009-2011) there were $240 \times 3 = 720$ distracters. From the analysis, for 2009, there were 20 negative and 27 zero indices giving a total of 47 (**19.5%**) ineffective distracters. For 2010, there were 5 negative and 5 zero indices giving a total of 10 (**4.1%**) ineffective distracters and for 2011; there were 13 negative and 12 zero distracters giving a total of 25 (**10.4%**) ineffective distracters. These show that effective distracters were **80.5%**, **95.1%** and **89.6%** for 2009, 2010 and 2011 respectively. For the three years under study, these translate to **88.7%** effective distracters.

DISCUSSION

Most educational tests, according to Anene and Ndubisi (1992), are considered appropriate if the difficulty index range from 0.30 to 0.70. For the three years under study, no item achieved a difficulty index below 0.3. However 54 items (30%), have difficulty indices above 0.7. These show that the tests were rather cheap. The discrimination indices range from 0.1124 to 0.8085. According to Anigbo (2006) the ideal index is between +0.3 and +1.0. For the three years under study, 63 items (35%) achieved discrimination indices below 0.3. Can this weak discrimination performance explain the overall cheapness of the test packages? It may be interesting to explore the correlation between difficulty and discrimination indices. The present study is tending towards a positive correlation.

The performance of the distracters shows 88.7% effectiveness. The distracter index shows how plausible each distracter is. Ideally, each distracter should attract a reasonable proportion of patronage especially from the lower achievers. There can however be instances where some distracters attract only an insignificant proportion of examinees. This reduces the functional number of options. If the item possesses acceptable discrimination and difficulty indices, Anigbo (2006) advises that it will only be necessary to replace the non-functional distracters with better ones.

CONCLUSION

The psychometric properties (difficulty, discrimination indices and the distracter patterns) of NECO Economics Objective test packages for 2009, 2010 and 2011 academic sessions have been examined. From the analysis, it is evident that the items possess acceptable qualities since high percentage of the items achieve indices within the recommended ranges. In agreement with Ogbonna (2015), the National Examinations Council (NECO) should be applauded to great extent for good work done and for maintenance of standards. This will obviously boost the confidence the students have on NECO, since the items have been shown to be of acceptable qualities.

RECOMMENDATIONS

- Federal Ministry of Education and National Education Research Development Council (NERDC) should ensure that items analysis of test items are being carried out in all public examinations in Nigeria.
- State Ministry of Education in Nigeria should as well begin to inculcate the practice of item analysis and validation in their school system.

- Measurement and evaluation experts should be employed in the ministries and schools that will monitor the above practice. The Federal and State Ministries of Education should create divisions responsible for quality assurance of public examination.

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