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# TEACHERS' PERCEPTION OF THE QUANTITATIVE ASPECTS OF SENIOR SECONDARY SCHOOL ECONOMICS SYLLABUS

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**Abstract**

*Students' poor performance in secondary school economics has been attributed to the introduction of mathematical economics. In view of this prevailing problem, this study investigated teachers' perception of the quantitative aspects of senior secondary school economics syllabus. The influence of some teacher factors (gender, qualification, years of teaching experience and area of specialisation) on the perception of the quantitative aspects of economics were examined. The study is a non-experimental research. The population consisted of economics teachers in the South-West region of Nigeria. The subjects of the study comprised 172 economics teachers randomly selected from 70 sampled schools in Oyo and Ondo States. A Teachers' Perception of Quantitative Aspects of Economics Questionniare (TPOQAEQ) was used to collect data. The reliability of the instrument using Cronbach Alpha formula yielded a coefficient of 0.73. The data collected were subjected to both descriptive and inferential statistics which included t-test and ANOVA. The study revealed that teachers seem to have fairly high positive perception of the quantitative aspects of economics syllabus. Also, the study showed a significant difference in teachers' perception of quantitative aspects of economics in terms of qualification and years of teaching experience while gender and area of specialisation were not significant. Suggestions were made for improving teaching and learning of the quantitative aspects of economics at the secondary school level in the region.*

## Introduction

Economics is one of the social science subjects, that studies and explains human behaviour in terms of economic activities in the society. It is the function of economics to study how people organise production, consumption and exchange activities.

Among all subjects in the general business course, economics may be seen as the most important. This view stems from a conscientious consideration of its educational value. In the first place, it has a great deal to contribute to a general education and can be justified as a subject suitable for all and sundry since it bears on the life of everyone. Second, it provides a body of general knowledge to which other subjects are capable of being related. The study of economics could assist the individual to organise efforts towards the development of an understanding of the working of the Nigerian economic system, as well as those skills and abilities necessary to function effectively in the system (Olaoye, 2005). Tudor (1950) argues that, we cannot produce good workers, responsible citizens and balanced human beings if we fail to give our children, at least, some knowledge of the working of general economic facts and principles.

The introduction of economics into the school system has not come without stiff opposition from economics scholars who felt that the subject was too difficult to be learnt at the secondary school level. Reports from Obemeata (1985) and Adu (2004) reveal that the arguments advanced are not about the desirability or otherwise of economics as a secondary school subject, but, about its teachability to secondary school students. The contention is that economics involves deductions and abstract reasoning which do not usually develop before the age of sixteen, a developmental age typical of senior secondary school two. It has been suggested that economics teaching should not be encouraged before that age, and when it has to be taught before that age, it should be largely descriptive.

This was the terrain when economics was introduced into the Nigerian curriculum in the sixties, During this period, the major areas of concentration were basically the principles of economics and its relevance to West African economy. This made the subject very easy to read and understand by secondary school students. The study conducted by Obemeata (1985) which further threw more light into the nature of economics, examined the reasons for secondary school students' choice of economics, his findings were that economics is an interesting school subject, which had a brief school certificate examination syllabus that teachers found easy to teach within the given time frame. Furthermore, the study also found that the syllabus contents were essentially descriptive and did not involve abstract or deductive reasoning.

Right from the late eighties to date, the scope of economics as a discipline has gone beyond the principles of economics and its relevance to society. The introduction of the 6-3-3-4 system of education in Nigeria has resulted in a drastic enlargement of the content of economics syllabus at the secondary school level. Apart from the descriptive aspects, which the old syllabus consisted, topics which involve deductive reasoning and numerical ability have been included. Some of these topics are basic tools for economic analysis, theory of costs and revenue, theory of consumer behaviour, demand and supply, elasticity of demand and supply, and national income. All these topics require the application of mathematical knowledge for proper comprehension.

Mathematical economics is the employment of mathematics in economics. Moffatt

(2007) explains that mathematical economics is the sub-field of economics that explores the mathematical aspects of economic systems. Modern mainstream economics research typically makes extensive use of mathematical modelling. Mathematical economics can thus be regarded as the theoretical counterpart of econometrics which attempts to analyse the real world of economic activity using statistical techniques. Also, economics uses tool from almost every branch of mathematics. Knowledge in mathematics, thus, plays a very important role in the teaching and learning of economics. This has made Moffatt (2007) to contend that 'having a good understanding of mathematics is crucial to success in economies'. This role has been significant for almost a century and has increased in importance, particularly in recent years.

The decline in the level of performance in the senior secondary certificate examination may be attributed to a shift in emphasis in the Senior School Certificate Examination (SSCE) economics syllabus. The current syllabus used in schools seems to be broader, covering all aspects of economics, and requires more analytical processes. Thus, the emphasis has shifted from being only descriptive to being both descriptive and mathematical in content. In addition, the external examination questions based on it are intended to test the capacity to follow and sustain an economic argument and to make logical inferences from given information, as well as a capacity to comprehend and explain the economic effects of important economic situations and policies.

It has been observed that teaching the mathematical aspects of economics is one of the problems facing the teaching of economics in secondary schools. Mathematics as a tool for comprehending important concepts in economics is equally faced with many problems. One of such problems identified by scholars in the field is the poor performance of students in mathematics which has been attributed in part to its teaching. For instance, Bello (2000) is of the opinion that the cause of poor performance in mathematics is as a result of lack of qualified teachers to handle the subject. This factor would seem to be true for the teaching of economics since the poor understanding of mathematics concepts can be carried over to the teaching of economics. Most of the teachers, who teach economics in some secondary schools in the country, as observed by Komolafe (1996) and Olaoye (2005), are not qualified to teach it as they lack understanding of some basic economics concepts. In addition, the poor performance in economics can also be attributed to the adoption of inappropriate teaching strategies, and many of the teachers do not relate the topics taught to real life situation. This tends to make economics more abstract to the students.

Educationists have agreed that the teacher is the one who translates policy into action at the classroom level. It is he, who injects reality into educational decisions, and concretises the curriculum. The teacher's behaviour can systematically modify students' behaviour. In spite of this established fact, Komolafe (1996) observes that, there has been no concerted effort at teacher preparation for improved teaching of economics as an important elective discipline at the inception of the execution of the 6-

3-3-4 system of education. This scenario calls for the need to assess teachers own perception of their adequacy in executing instructional competencies of their chosen field of expertise

Perception has physical, psychological and physiological meanings. Giving the cognitive meaning of perception. Eggen and Kauchak (2001) sees perception as the process by which people attach meaning to experience. They explain that after people attend to certain stimuli in their sensory memories, processing continues with perception. Perception may be energised by present and past experience, individual attitude at a particular moment, the physical state of the sense organ, the interest of the person, the level of attention and the interpretation given to the perception (Adediwura & Bada, 2007). Past experience influences perception in a number of ways. People respond to events by relating them to previous experiences of a similar nature. O'Malley and McGraw (2007) are of the opinion that a person's perception may be more important than reality since decisions, many times, are based on perception, they posit that perception may be influenced by one's knowledge, expectations, needs, unconscious ideas, values and conflicts. There is, therefore, the need to examine how teacher factors underpin their perception in the study.

Eggen and Kauchak (2001) report that there is a high correlation between what teachers know and what they teach. They explain that nobody can teach what he does not understand. Also, Seiter (1989) finds that there is a strong positive relationship between teachers' knowledge of economics and level of economics literacy achieved by then students. He stresses further that the quality of instruction depends upon the knowledge of teachers; and that teacher with ample knowledge of economics are able to plan effectively for the introduction and organisation of basic concepts. Another study that result of the study of the influence of demographic characteristics on secondary school teachers' job attitudes by has researched on other teacher factors such as Adegoroye (2000) reveals that gender had significant influence on the teachers' attitude to job. It is also found that teachers' experience and teaching qualification significantly influence their attitude to job which may eventually affect their teaching quality. It thus implies that teacher variables such as sex, qualification, years of teaching experience and area of specialisation may underpin their perception of the quantitative aspects of economics syllabus. This forms the rationale for undertaking this study.

**Statement of the Problem**

Student's poor performance in secondary school economics has been attributed to the introduction of mathematical economics. In view of this prevailing problem, this study investigated the perception of teachers on the quantitative aspects of senior secondary economics syllabus, against the backdrop that these aspects are difficult for some teachers to teach.

**Research Questions**

Based on the stated problem, the study sought answers to the following questions:

(1) How do teachers perceive the quantitative aspects of senior secondary school economics syllabus?

(2) Is there any significant difference in the teachers' perception of the quantitative aspects of economics syllabus in terms of gender, qualification, experience and area of specialisation?

**Research Methodology**

**Research Type:** The study is a non-experimental research. It focused on the data collected with a view to describing in a systematic way, the characteristics as well as the features and facts found in the target population, as it has no intent to manipulate the variables.

**Population and Sample:** The population of the study consisted of all economics teachers in 2007/2008 academic session in the South-West region of Nigeria namely: Oyo, Ogun, Osun, Ondo, Ekiti and Lagos States. A multistage sampling procedure was used to select the subjects. Two states, Ondo and Oyo were randomly selected from the South West geopolitical zone, and were divided into five educational zones respectively. Based on the number of schools in each educational zone, thirty (30) schools were randomly selected from Ondo State and forty (40) from Oyo State. Higher weighting is given to schools selected from Oyo State because she has higher number of schools than Ondo State. Also, the state capital, Ibadan has been the historic and political capital of the old Western region of Nigeria, which makes up the present southwest geopolitical zone of Nigeria. Finally, all the economics teachers in the selected schools participated in the study, thus giving a total number of one hundred and seventy-two (172) teachers sampled.

**Instrumentation:** The main instrument used in this study was a questionnaire: Teachers' Perception of Quantitative Aspects of Economics Questionnaire (TPOQAEQ). The instrument consists of two sections. Section A comprises teachers' background information such as their gender, qualification, years of teaching experience and areas of specialisation. Section B, contains items on their perception on the quantitative aspects of economics syllabus. The reliability of the instrument using Cronbach Alpha formula yields reliability co-efficient of 0.73 which is considered reliable and appropriate for the study.

**Data Collection and Analysis:** The instrument was administered by the researchers to the teachers in the sampled schools. This enhanced the researchers' opportunity of solving any problem arising from data collection. The data obtained were subjected to various statistical analyses in order to answer the research questions raised. These included descriptive statistics such as frequency counts and percentages and inferential statistics such as t-test and analysis of variance (ANOVA)

**Results**

Table 1 presents the results of teachers' perception of the quantitative aspects of economics syllabus. A high percentage (over 70%) of the teachers believe that inclusion of mathematical aspects of economics prepares the students for sound economics knowledge base (item 7), that the quantitative aspects of economics are relevant to economics education in modern times (item 4), and that mathematical knowledge is a necessary condition for learning economics (item 8). One hundred and thirty-five teachers (78.5%) feel that only the teachers that specialised in economics should be allowed to teach the subject (item 17). A modest percentage of teachers 102 (59.3%), agree that the quantitative aspects of economics are very easy to teach (item 1). Only sixty-seven teachers (39.0%) agree that the quantitative aspects are not well treated in the available economics textbooks (Item 3) while one hundred and fifteen teachers (66.9%) agree that some economics textbooks do not treat the aspects at all (item 14).

**Table 1: Teachers' Perception of the Quantitative Aspects of Economics Syllabus.**

| Item No. | Statements | Agreement | | Disagreement | |
|---|---|---|---|---|---|
| | | Frequency | % | Frequency | % |
| 1. | The quantitative aspects of economics are very easy to teach. | 102 | 59.3 | 70 | 40.7 |
| 2. | The quantitative aspects of economics are very easy to comprehend by the students. | 66 | 38.4 | 106 | 61.6 |
| 3. | I do not like to teach the quantitative aspects of Economics. | 20 | 11.6 | 152 | 88.4 |
| 4. | The mathematical aspects of economics are not relevant to economic education in modern times. | 11 | 6.4 | 161 | 93.6 |
| 5. | The quantitative aspects of economics should be excluded from the economics syllabus at the secondary school. | 34 | 18.6 | 140 | 81.4 |
| 6. | The quantitative aspects of economics are useful in solving everyday problems. | 91 | 52.9 | 81 | 47.1 |
| 7. | The inclusion of mathematical aspects of economics prepares the students for a sound economics knowledge base. | 144 | 83.7 | 28 | 16.3 |
| 8. | Mathematics knowledge is a necessary condition for learning economics. | 149 | 86.6 | 23 | 13.4 |
| 9. | The inclusion of mathematical aspects makes the syllabus too wide for the students to cope with. | 79 | 45.9 | 93 | 54.1 |
| 10. | The quantitative aspects of economics syllabus contribute to poor performance of students in economics at the secondary school level. | 69 | 40.1 | 103 | 59.9 |
| 11. | The material needed to teach the quantitative aspects of economics are not sufficient. | 97 | 56.4 | 75 | 43.6 |
| 12. | The time allocated for economics on the school timetable is inadequate. | 93 | 54.1 | 79 | 45".9 |

| | | | | |
|---|---|---|---|---|
| 13. The quantitative aspects are not well treated in the economics textbooks available in the market. | 67 | 39.0 | 105 | 61.0 |
| 14. Some economic textbooks do not treat the mathematical aspects at all. | 115 | 66.9 | 57 | 33.1 |
| 15. Students find it difficult to read and understand the quantitative aspects of economics. | 115 | 66.5 | 57 | 33.1 |
| 16. To teach the mathematical aspects of economics, one needs to prepare very well. | 160 | 93.0 | 12 | 7.0 |
| 17. Only teachers that specialised in economics (economics majors) should be allowed to teach the subject in secondary schools. | 135 | 78.5 | 37 | 21.5 |
| 18. Seminars and workshops should be organised regularly for the teachers of economics to keep them abreast of new methods of effectively teaching economics. | 151 | 87.8 | 21 | 12.2 |

Further results reveal that one hundred and six (61.6%) of the teachers do not agree with the notion that the quantitative aspects of economics are very easy to comprehend by students (item 2). About one hundred and forty (81.4%) of the teachers do not support the exclusion of the quantitative aspects of economics from the syllabus (item 5), while a modest percentage (54.1%) disagrees with the view that the inclusion of mathematical aspects makes the syllabus too wide for the students to cope with (Item 9).

With respect to the research question that sought for significant difference in the teachers' perception of the quantitative aspects of economics syllabus in terms of gender, qualification, experience and area of specialisation, the results are presented in Tables 2.1 to 2.6. Table 2.1 reveals that there is no significant difference in teachers' perception of the quantitative aspects of economics syllabus in terms of gender ($t=0.498$; $df = 170$ and $P > 0.05$). Table 2.2(b) shows that there is significant difference in the teachers' perception based on qualification ($F^{igg} = 13.08$; $P<0.05$). Table 2.3 also shows that there is significant difference between the teachers' perception of the quantitative aspects of economics syllabus in terms of the teachers who hold NCE and B.Ed/B.Sc (Ed), NCE and B.Sc., NCE and HND degrees at 0.05 level of significance, while there was no significant difference among teachers who hold B.Ed/B.Sc (Ed), B.Sc. and HND degrees.

**Table 2.1: Teachers' Perception of the Quantitative Aspects of Economics Syllabus by Gender**

| Gender | N | Mean | Standard Deviation | Standard Error | t-value | df | Sig. | Remark |
|---|---|---|---|---|---|---|---|---|
| Male | 102, | 52.25 | 5.43 | 0.54 | 0.498 | 170 | 0.619 | NS |
| Female | 70 | 51.84 | 4.85 | 0.58 | | | | |

NS = Not Significant

**Table 2.2: Teachers' Perception of the Quantitative Aspects of Economics Syllabus by Qualification**

**(a) Descriptive Statistics**

| Qualification | N | Mean | Standard Deviation | Standard Error |
|---|---|---|---|---|
| NCE | 40 | 48.40 | 6.25 | 0.99 |
| B.Ed/B.Sc. (Ed) | 87 | 52.87 | 4.15 | 0.44 |
| B.Sc. | 33 | 52.76 | 3.69 | 0.64 |
| HND | 12 | 56.75 | 5.24 | 1.51 |

**(b) Analysis of Variance**

| | Sum of Square | df | Mean Square | F | Sig. | Remark |
|---|---|---|---|---|---|---|
| Between Groups | 873.34 | 3 | 291.11 | 13.08 | .000 | * |
| Within Groups | 3739.52 | 168 | 22.26 | | | |
| Total | 4612.86 | 171 | | | | |

**Table 2.3: Scheffe Post-Hoc Analysis of Teachers' Perception according to Qualification**

| Qualification | Mean | NCE | B.Ed/B.Sc. (Ed) | B.Sc. | HND |
|---|---|---|---|---|---|
| NCE | 48.40 | | | | |
| B.Ed/B.Sc. (Ed) | 52.87 | * | | | |
| B.Sc. | 52.76 | * | | | |
| HND | 56.75 | * | | | |

* Significant at the P<.05 level.

Tables 2.4(a) and (b) show the descriptive statistics and ANOVA source table of the teachers' perception in term of experience which is significant (F(2,i69) = 8.91; PO.05). Table 2.5 shows that the significant difference in teachers' perception of the quantitative aspects of economics is among the teachers whose years of experience are between 1 -5 years and those with 6 years and above, but significant difference was not observed between teachers whose years of teaching experience are between 6-10 years and 11 years and above.

**Table 2.4: Teachers' Perception of the Quantitative Aspects of Economics Syllabus by Experience**

**(a) Descriptive Statistics**

| Years of Experience | N | Mean | Standard Deviation | Standard Error |
|---|---|---|---|---|
| 1-5 years | 50 | 49.84 | 5.89 | 0.84 |
| 6-10 years | 82 | 52.41 | 4.94 | 0.55 |
| 11 years and above | 40 | 54.2 | 3.55 | 0.56 |

**(b) Analysis of Variance**

| | Sum of Square | df | Mean Square | F | Sig. | Remark |
|---|---|---|---|---|---|---|
| Between Groups | 439.84 | 2 | 219.92 | 8.91 | .000 | * |
| Within Groups | 4173.02 | 169 | 24.69 | | | |
| Total | 4612.86 | 171 | | | | |

**Table 2.5: Scheffe Post-Hoc Analysis of Teachers' Perception according to Years of Teaching Experience**

| Years of Experience | Mean | 1-5 years | 6-10 years | 11 years and above |
|---|---|---|---|---|
| 1-5 years | 49.84 | | | |
| 6-10 years | 52.41 | * | | |
| 11 years and above | 54.2 | * | | |

* Significant at the P<.05 level.

Tables 2.6(a) and (b) reveal that there is no significant difference in the teachers' perception of the quantitative aspects of economics in terms of area of specialisation ($F_{(4}.i67) = 0.46; P > 0.05$).

**Table 2.6: Teachers' Perception of the Quantitative Aspects of Economics Syllabus by Area of specialisation**

**(a) Descriptive Statistics**

| Area of Specialisation | N | Mean | Standard Deviation | Standard Error |
|---|---|---|---|---|
| Economics | 140 | 54.44 | 1.81 | 0.60 |
| Business Administration/ Accounting | 17 | 55.24 | 5.40 | 1.31 |
| Social Studies | 9 | 51.24 | 5.22 | 0.44 |
| Geography | 4 | 51.75 | 4.92 | 2.46 |
| Mathematics | 2 | 51.00 | 1.41 | 1.00 |

**(b) Analysis of Variance**

| | Sum of Square | df | Mean Square | F | Sig. | Remark |
|---|---|---|---|---|---|---|
| Between Groups | 258.54 | 4 | 64.64 | 2.48 | 0.46 | NS |
| Within Groups | 4354.32 | 167 | 26.07 | | | |
| Total | 4612.86 | 171 | | | | |

NS = Not Significant

**Discussion**

The finding of the study is that teachers seem to have a fairly high positive perception of the quantitative aspects of economics syllabus. This finding corroborates the assertion of Abe (1998) that economists must be familiar with

quantitative techniques, especially statistics and mathematics to be better teachers. That as large as 20-41% of the teachers investigated in this study find their preparation as inadequate to teach the mathematical aspects of this subject, make these groups of teachers not qualified to teach economics at this level. For teachers, particularly those who hold the NCE certificate, as encapsulated in the National Policy on Education, to teach at the senior secondary level and not at the junior secondary level is nothing but an aberration.

The finding also indicates that there is a significant difference in teachers' perception of the quantitative aspects of economics in terms of qualification. A Scheffe post hoc analysis revealed that NCE holders differ significantly in their perception of the quantitative aspects of economics syllabus compared with their B.Ed/B.Sc (Ed), B.Sc. and HND counterparts. This implies that qualification has a great influence on the teachers' perception of the quantitative aspects of economics which may eventually affect the effective teaching of these aspects. The finding corroborate the outcome of Greenwood, Hedges and Laine (1996) work which reveals that teacher's level of education prove to have a significant effect on students' learning outcomes. Therefore, economic teachers should work towards self-improvement by attending workshops organised in their area and/or should obtain higher qualifications.

Further outcome of the study indicates that, there is a significant difference in the teachers' perception of the quantitative aspects of economics in terms of years of teaching experience. Teachers with teaching experience of 11 years and above have the highest mean score of 54.2, followed by those with 6-10 years or experience while those with 1-5 years of experience have the least mean score of 49.84. It thus, seems that the lower the years of teaching experience, the poorer their perception of the quantitative aspects of economics. The result confirms that of Chacko (1981) and Adegoroye (2000) who find, respectively, that teaching experience contributes highly to the variance in gains in students' achievement and in attitude to biology; and teachers attitude to job.

The findings with respect to differences in teachers' perception indicate that there is no variation in the teachers' perception of the quantitative aspects of economics syllabus in terms of gender. This is in line with the results of the study carried out by Akinbote and Ogunranti (2004) which reveals that male and female teachers do not differ significantly in their perception of creativity among pre-school children. The result, however, contradicts that of Falaye and Okwilagwe (2008) that reveals that gender significantly discriminate between male and female teachers' attitudes towards social studies teaching. The study findings also show that there is no significant difference in teachers' perception of the quantitative aspects of economics in terms of area of specialisation, even though the teachers who specialised in economics in this study, have a better perception of the quantitative aspects of economics in contrast to their counterparts who specialised in geography, social studies and mathematics, This contradicts the findings of Komolafe (1996) that indicate that students taught by teachers who specialised in economics education perform better than their

counterparts taught by teacers that specialised in geography, political science and sociology.

## Conclusion

The study sought to investigate economics teachers' perception of quantitative aspects of economies. Findings show that about sixty percent of the teachers perceived these aspects to be very easy to teach but not easy to comprehend by the students. The relevance of the quantitative aspects of economics to economics education has also been acknowledged by the teachers. It has been found that there is significant difference in teachers' perception of the quantitative aspects of economics with respect to teacher qualification and years of teaching experience, and not with respect to gender and area of specialisation of these teachers. The findings show that the higher the years of teaching experience, the better the teachers' perception of the quantitative aspects of economics while the perception of teachers who hold NCE certificate is lower, compared with their B.Ed. B.Sc. (Ed.) and HND counterparts. It is important that practising teachers, school administrators and policy makers should take cognisance of the positive factors established in this study while assigning teachers to teach the subject, if they are to enhance effective teaching and learning in secondary school economics in the southwestern Nigeria.

## Recommendations

Based on the findings of the study, the following recommendations are made: (i) Teachers should be encouraged to update their knowledge, especially, on the quantitative economics topics so as to be able to teach authoritatively in class and not tactfully avoid these topics.

(ii) Since it has been found that some of the practising teachers who participated in the study do not seem to be qualified to teach the subject, there is, therefore, need for teachers to acquire pedagogical training to enhance the quality of their teaching and consequently improve the performance of their students. Economics teachers should be given on-the-job training through organised workshops, seminars and symposia to keep them abreast of new developments in economics.

(iii) Employers of labour such as the state ministries of education and other agencies should note the value for training and retraining of teachers and so should release teachers who apply for in-service training in order in improve their competencies on the job.

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