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Analysis of Independence of Available Infrastructure on Geographical Location of Public Secondary Schools in Ondo State, Nigeria

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Abstract
This paper has attempted to study the availability of infrastructural facilities in public secondary schools in Ondo State, Nigeria. Six local government areas (LGAs) were randomly selected with due consideration to the geo-political set-up of the State. Quantitative methods of analysis that were used include both descriptive and inferential statistics. The descriptive statistical techniques were tabular presentation and bar chart while the inferential statistical technique applied is chi-square analysis. The inferential statistics revealed that enrollment of students in secondary schools depends on gender and on Local Government Area. Also, the level of equipping of laboratories, availability of information technology facilities, portable water supply and supply of electricity depend on Local Government Area while availability of library in secondary schools is independent of Local Government Area. Conclusively, much still need to be done in the area of infrastructural development in public primary and secondary schools in Ondo State towards the achievement of the vision 20: 2020 goal of Nigeria as one of the 20 most developed economy of the world in terms of education.
Keywords: education, infrastructure, information technology, chi-square, enrollment.
JEL Classification: Q1 and C1

1 INTRODUCTION

The importance of education to human beings cannot be over-emphasized. Education is a human right that should be accorded to all human beings solely by reason of being human. There are a lot of international human rights instruments that refered to education as a fundamental human right. These include the Universal Declaration of Human Rights (1948), the International Covenant on Economic, Social and Cultural Rights (1966) and the African Charter on Human and People's Rights (1981).

The relationship between education and development is well established such that education is a key index of development. It has been documented that schooling improves productivity, health and reduces negative features of life such as child labour as well as bringing about empowerment. This is why there has been a lot of emphasis particularly in recent times for all citizens of the world to have access to basic education (Fafunwa, 1974).

The school learning infrastructure refers to the site, building, furniture and equipment that contribute to a positive learning environment and quality education for all students. The quality of learning facilities available within an educational institution has positive relationship with the quality of teaching and learning activities which in turn leads to the attainment of goals set. The quality of the school buildings and furniture will determine how long such will last while comfortable classrooms and adequate provision of instructional resources facilitate teachers' instructional task performance and students' learning outcomes.

Learning environment and teaching/learning facilities no doubt significantly affect the performance level of students in public examinations. This research work was therefore directed towards assessing the available facilities in selected public secondary schools in Ondo State with a view to adequately furnish government with the state of infrastructural facilities in the schools to facilitate planning and monitoring in the education sector.

Ogundare (1999) and Olagboye (2004), viewed utilization of school infrastructure and learning environment as the extent of usage of school buildings, laboratories, library, assembly-ground, flower garden, school garden, volleyball field, chairs, desks, chalkboard, and so on. However, too much pressure on their use could result in over utilization, a situation that could lead to rapid deterioration and breakdown. For instance, when a classroom built to accommodate 40 students is constantly being used for 60 students then the returns

from these facilities may not be maximized in terms of teaching and learning. Comfortable learning facilities will not only boost the morale of teachers and students but will also ensure the realization of the set educational objectives in secondary schools.

The abysmal performance of students in examinations had been largely attributed to inadequate learning facilities. This situation has been a source of concern to the school administrators, government and other stakeholders. According to Fafunwa (2010), there is a big gap in quality, resulting from large number of students in crowded classrooms, using inadequate and obsolete equipment and with disillusioned teachers. These combined deficiencies perhaps constituted a major gap in the quality of learning infrastructure, thus, many challenges bear on teaching and learning that prevent the education system from getting the best out of its efforts to achieve the required level of attainment in teaching and learning activities in secondary schools.

This paper was considered necessary given the effect which physical environment, teaching/learning facilities and manpower have on the quality of education impacted and the health of the students and the need for government and all stakeholders in the education sector to have adequate information on its schools.

It is believed that creating child/learning friendly environment will go a long way at achieving all round development of the child. The survey, which provides basic numerical data on educational facilities in schools covered, will be useful for planning in the education sector.

1.1 RESEARCH QUESTIONS

The following questions were addressed in the study:

1. Does enrollment of students in secondary schools depend on gender?
2. Does enrollment of students in secondary schools depend on Local Government Area?
3. Do levels of equipping the laboratories in schools depend on the Local Government Area?
4. Does availability of library depend on the Local Government Area?
5. Do sources of electricity depend on the Local Government Area?
6. Does availability of Information Technology facilities depend on the Local Government Area?
7. Does availability of portable water supply in schools depend on the Local Government Area?

1.1.1 OBJECTIVES OF THE STUDY

1. To appraise infrastructural facilities in public secondary schools in terms of availability and quantity.
2. To establish baseline data on infrastructural facilities in public secondary schools in the local government areas covered.
3. To compute simple relevant indices in the education sector e.g. students/teacher ratio, students /classroom ratio.
4. To provide needed information to government for formulating plans/programmes on education and evaluation of progress in the implementation of such plans.
5. To provide information for development partners who will be interested in complementing government efforts in the education sector.

2 METHODS AND MATERIALS

Required data were obtained from the 2006 report of the survey carried out by the Research and Statistics Department, Ministry of Finance and Planning, Akure, Ondo State on all public secondary schools in the State. Six Local Government Areas (LGAs) were randomly selected with due consideration to the geo-political set-up of the State. Two LGAs were selected from each of the three senatorial districts. The selected LGAs are: Akoko North East and Owo (North Senatorial District), Akure South and Ondo East (Central Senatorial District), Okitipupa and Ilaje (South Senatorial District). All the public secondary schools in the six local government areas were covered. The study variables include:

a. Location of schools
b. Enrollment of students in the public schools
c. Gender of students.
d. Source of electricity in schools
e. Status of laboratories in schools
f. Availability of information technology in schools
g. Source of water supply in schools.
h. Number of classrooms in the schools
i. Availability of library
j. Number of secondary schools in each LGA
k. Number of teachers in each school

2.1 HYPOTHESES

Hypothesis 1a

H_0: Enrollment of students in secondary schools is independent of gender
H_1: Enrollment of students in secondary schools depends on gender

Hypothesis 1b

H_0: Enrollment of students in secondary schools is independent of Local Government Area
H_1: Enrollment of students in secondary schools depends on Local Government Area

Hypothesis 2

H_0: Level of equipping of laboratories in secondary schools is independent of Local Government Area
H_1: Level of equipping of laboratories depends on Local Government Area

Hypothesis 3

H_0: Availability of library in secondary schools is independent of Local Government Area
H_1: Availability of library depends on Local Government Area

Hypothesis 4

H_0: Source of electricity in secondary schools is independent of Local Government Area
H_1: Source of electricity depends on Local Government Area

Hypothesis 5

H_0: Availability of information technology facilities in secondary schools is independent of Local Government Area
H_1: Availability of information technology facilities depends on Local Government Area

Hypothesis 6

H_0: Source of portable water supply in secondary schools is independent of Local Government Area
H_1: Source of portable water supply depends on Local Government Area

The data gathered from the survey were coded as appropriate and analyzed using the Statistical Package for Social Science (SPSS) Version 17. Quantitative methods of analysis that were used include both descriptive and inferential statistics. The descriptive statistical techniques were tabular presentation and bar chart. The inferential statistical techniques include analysis of variance (ANOVA) and chi-square analysis.

Table 1: Enrolment and number of teachers in selected Local Government Areas 2005

S/N	L.G.A	No of schools	No of class rooms	Total students enrolment 2004 / 2005			students classroom ratio	Total no of teachers 2004/ 2005			Students Teachers Ratio
				M	F	T		M	F	T	
1	Akoko North East	16	297	6004	5563	11567	39:1	349	224	573	20:1
2	Akure South	27	703	27625	25940	53565	76:1	468	1127	1595	34:1
3	Ilaje	19	265	6267	4395	10662	40:1	224	57	281	38:1
4	Okitipupa	22	418	9221	8371	17592	42:1	469	254	723	24:1
5	Ondo East	11	124	2563	2355	4918	40:1	138	148	286	17:1
6	Owo	17	389	8608	6977	15585	40:1	400	372	772	20:1
	Total	112	2196	60288	53601	113889	52:1	2048	2182	4230	27:1

The table 1 above shows the students-teacher ratio and students-classroom ratio

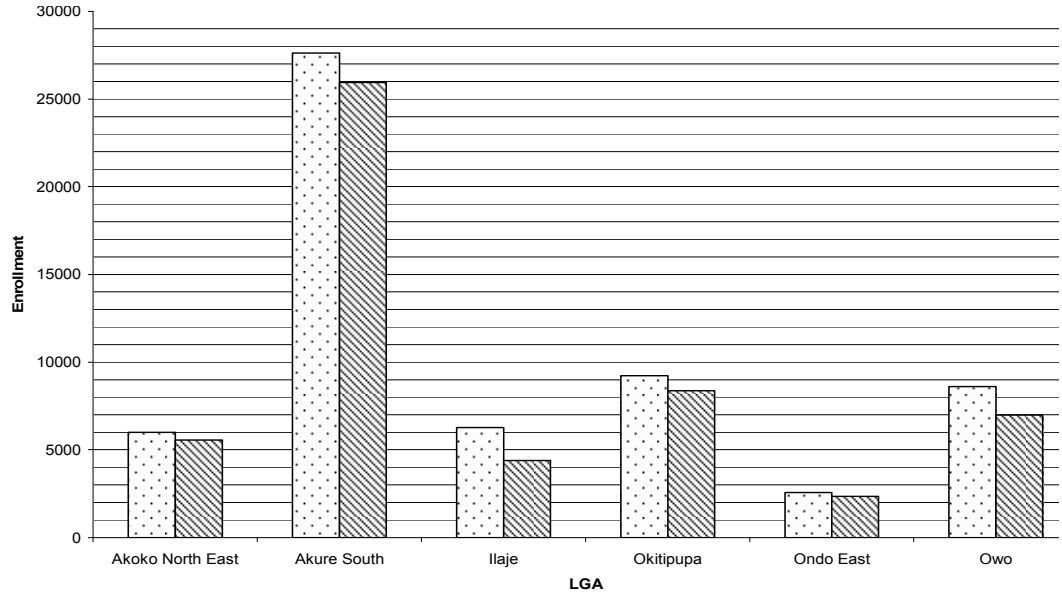

Fig 1: Bar Chart on male and female enrollment in public secondary schools in Ondo State in 2005

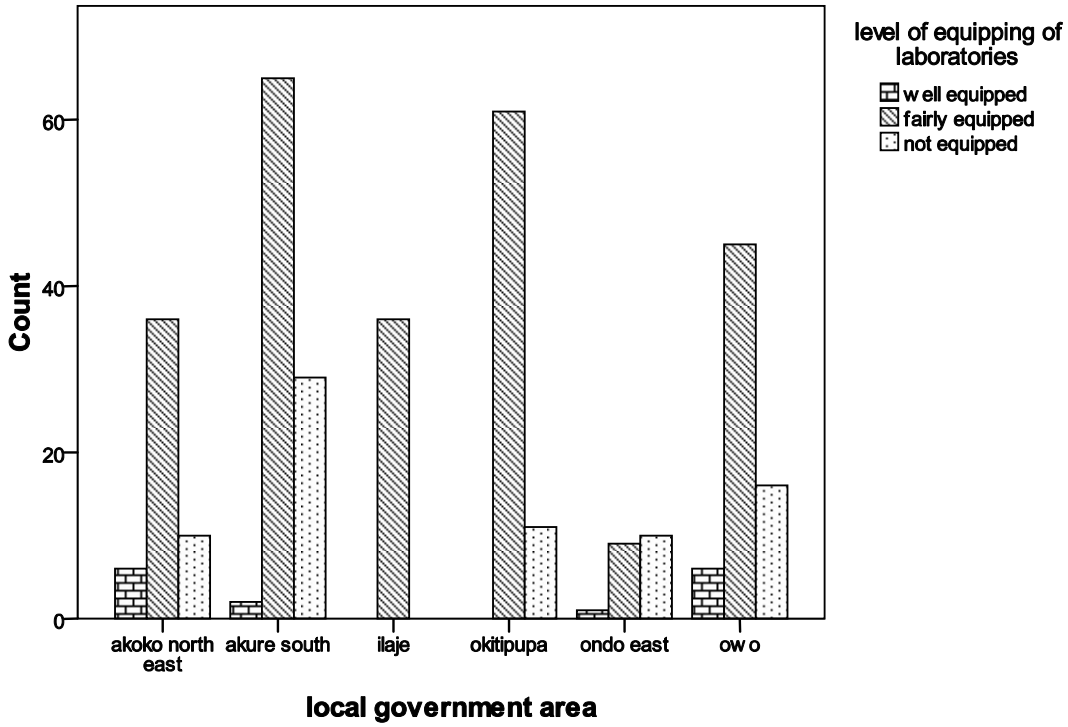

Fig 2: Bar Chart on level of equipping of laboratories in public secondary schools in Ondo State in 2005

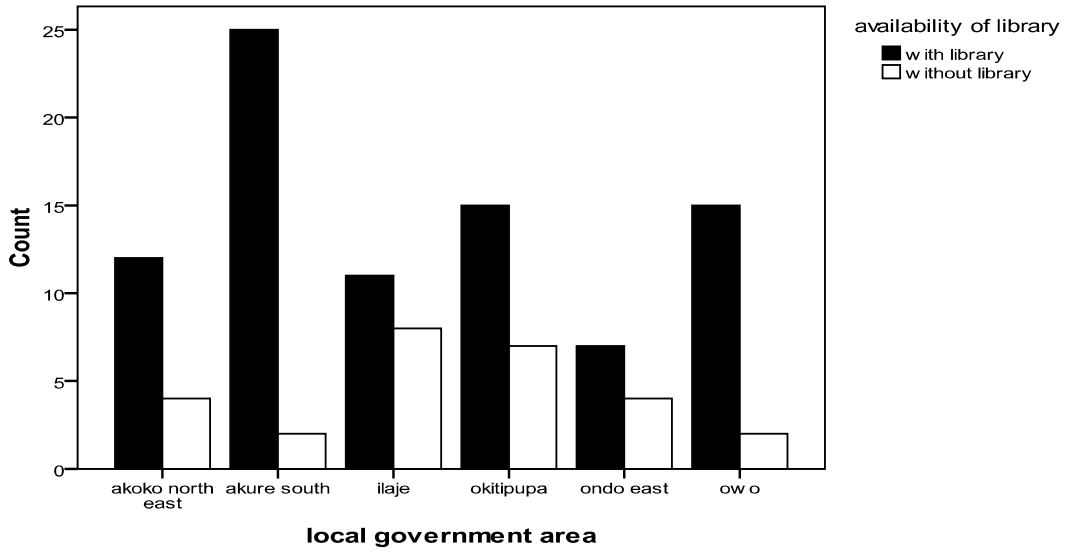

Fig 3: Bar Chart on level of availability of library in public secondary schools in Ondo State in 2005

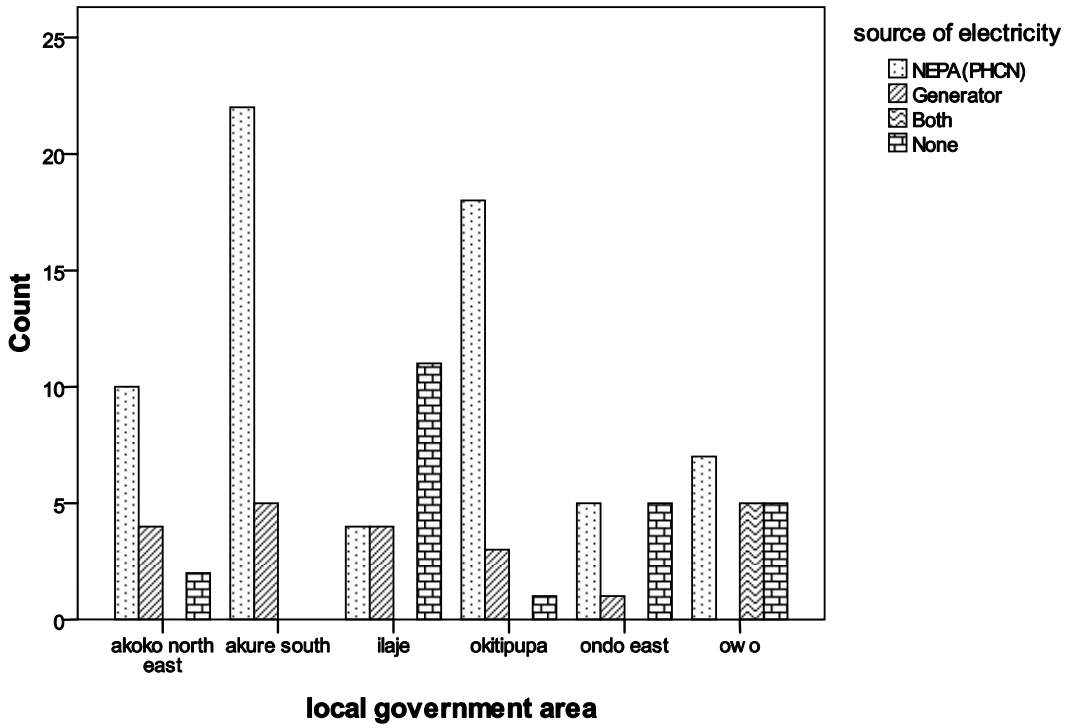

Fig 4: Bar Chart on source of electricity in public secondary schools in Ondo State in 2005

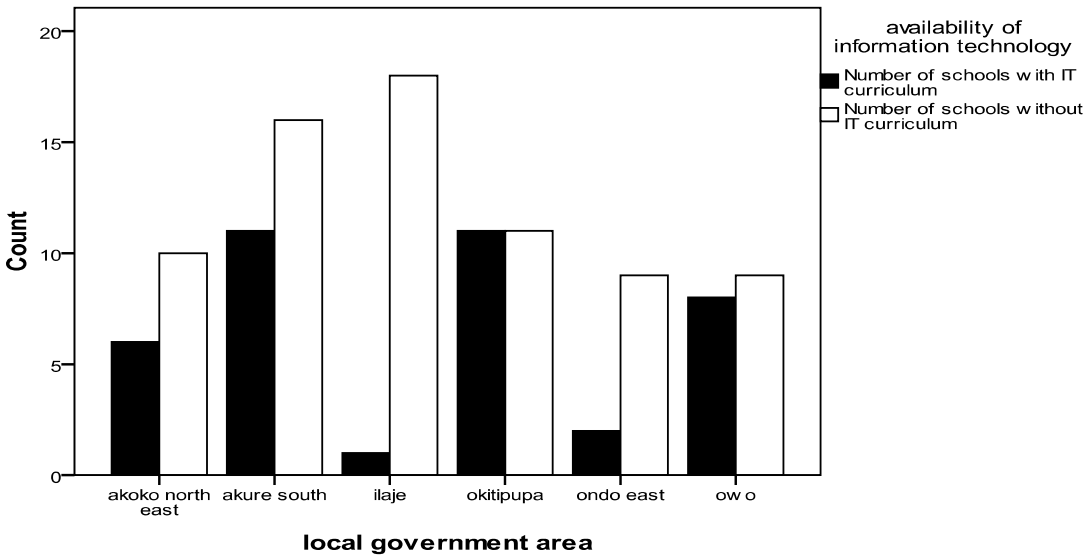

Fig 5: Bar Chart on availability of information technology in public secondary schools in Ondo State in 2005

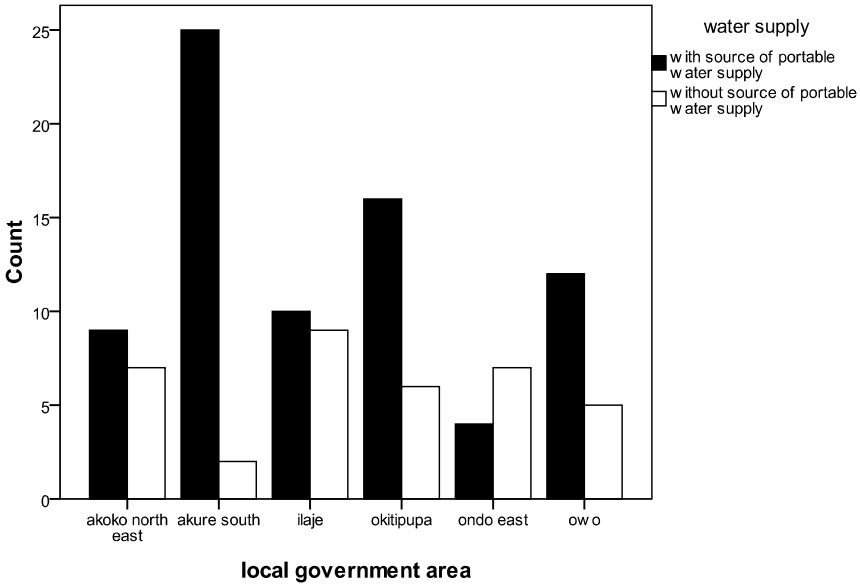

Fig 6: Bar Chart on water supply in public secondary schools in Ondo State in 2005

3 FINDINGS AND DISCUSSION

The data from the survey were tabulated in two major forms. One set of table was the summary on local government basis while the other set was school specific. Altogether, there are 112 secondary schools in the six LGAs covered. The total enrolment in the schools is 113,889; this gives an average of 1,017 students per secondary school. 68% of the public secondary schools have portable water within their premises while 32% are without portable water source. 59% of the public secondary schools in the selected LGAs covered have access to electricity (PHCN), 15% make use of generator sets, 5% makes use of both electricity (PHCN) and generator sets while about 21% have no access to electricity supply. Out of the 285 laboratories enumerated in the schools, about 5% were rated as well equipped, 74% fairly equipped and 21% not equipped. 76% of the public secondary schools have libraries while 24% are without libraries. 35% of the public secondary schools offer information technology as part of its curriculum. The 39 schools offering information technology have a total of 91 computer units.

From the inferential statistics, the following conclusions were arrived at based on their p-values: Enrollment of students in secondary schools depends on gender and on Local Government Area. Also, the level of equipping of laboratories, availability of information technology facilities, source of portable water supply and source of electricity depend on Local Government Area while availability of library in secondary schools is

independent of Local Government Area.

3.1 CONCLUSION AND RECOMMENDATIONS

The study has established the fact that much still need to be done in the area of provision of infrastructure in public secondary schools in Ondo State towards the achievement of the vision 20: 2020 goal of Nigeria as one of the 20 most developed economy of the world in terms of education. The following points will be found useful by stakeholders in the education sector in the State:

1. Increased funding of education: Governments at all levels in the State must devote the recommended 26% of their budgets to education. No nation would make any meaningful socioeconomic stride without well-equipped educational institutions. The United Nations Educational Scientific and Cultural Organization (UNESCO) have noted that revitalizing this important sector is among the ways to improve economic opportunities for the youths.
2. Enhanced compensation and salary package for teachers in public schools in the State.
3. An end to policy somersaults: One of the greatest problems of our education is that every government wants to give an impression that it is doing something. Thus, policies that are not well thought out are introduced and changed arbitrarily and whimsically.
4. The State should invest more on education and skill training as no nation can compete effectively in the emerging global market place with poorly educated and unskilled workers.

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