

SCHOOL PRODUCTION VARIABLES AND INTERNAL EFFICIENCY OF PUBLIC AND PRIVATE JUNIOR SECONDARY SCHOOLS IN OYO STATE

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ABSTRACT

This study investigated the school production variables and internal efficiency of private and public secondary schools in Oyo State from 2011/2012 to 2014/2015 academic session. The objective of the study was to identify the relationship between internal efficiency of Junior Secondary Schools in Oyo State and school production variables like the learning environment, student-teacher ratio (STR), teachers' motivation, and school organizational climate. The ex-post factor research design was used for the study. The sample size consisted of 30 public and 20 private schools in the state selected through purposive and proportional stratified random sampling techniques. The research instrument used to collect data was a validated inventory titled "Data on School Records and Students". True cohort method was used to determine the wastage ratio and consequently the coefficient of efficiency of 30 public and 20 private secondary schools in Oyo State. T-test and Multiple Regression Statistic were used to test the hypotheses at 0.05 level of significance. It was discovered that private junior secondary schools have higher wastage rates than public secondary schools in Oyo State. Specifically, the findings revealed a higher percentage of dropouts in private junior secondary schools during the period of study. The coefficient of efficiency for public schools was therefore 91% while it was 76% in the private secondary schools in Oyo State. This shows that both public and private secondary schools in Oyo State were fairly internally efficient. However, public schools were more internally efficient than private schools. In view of the findings, it was recommended that private schools in Oyo State should develop mechanisms to address issues causing wastages and adhere strictly to an open school organizational climate which is characterized by teacher relations that are professional, collegial, friendly, and committed to the education of students. In addition, proprietors/proprietresses are to be supportive and professional and do not restrict or direct teachers with authoritative orders. In addition, parents should stop having negative perception about the system of operation in public secondary schools in Oyo State.

Keywords: Internal efficiency; Relationship; Student-Teacher Ratio; Cohort; Wastage Ratio; Coefficient of Efficiency.

Introduction

Nations all over the world have developed and are still developing strategies, philosophies, policies, programmes and projects to ensure optimal efficiency in their educational system. Policies are formulated and huge resources are committed towards the execution of the policies in a bid to achieving their 'efficiency mission' (Padmanghan, 2012). Internal efficiency refers to the number of students who pass from one grade to the other and complete that cycle within the stipulated period of time. It shows the relationship between input and output at a given educational level. Gupta (2001) noted that the question of internal efficiency is ultimately linked to the issue of resources allocation and utilization. According to Ajayi (2009), efficiency in education is a relationship between output and input in an educational system. This is corroborated by Akangbou (1985) and Ojedele (1998) who see educational efficiency as that situation where the school administrations are able to satisfy the need of human elements in the system.

The indicators of internal efficiency used by Abdulkareem (1989); Durosaro (1991); Owolabi and Fabunmi (1999); and Afolabi (2006) are wastage rate and graduation rate. Wastage rate is caused by unsuccessful school leavers, who left school system before the completion of the course. Wastage may occur between grade level, among those students who repeated the grade and those who dropped out of the system. Wastage rate could be crude-cohort wastage rate or refined-cohort wastage rate. Crude-cohort wastage rate is the percentage of repeaters and drop-outs from the first year to the final year of academic sessions of a given cohort of students, while refined cohort wastage rate is the percentage of those who passed out or the graduates to the enrolment of the cohort. This is based on the basic fact that not all the students that reached the final year took the final year examination or passed.

Researchers (Abdulkareem, 1989; Durosaro, 1991; Owolabi and Fabunmi, 1999 and Afolabi, 2006) have revealed that inefficiency have been a bane of Nigerian education over the years. This cannot be disconnected from poor financial resources allocation, mismanagement of available funds, corruptions, maladministration, indiscriminate establishment of institutions, which were later found to be more than the available resources can sustain (Ajayi, 2008). It

appears that variables such as good learning environment, moderate student-teacher ratio, good teachers' motivation, conducive school organizational climate, quality and qualified teachers which are crucial to internal efficiency seems not to be sufficiently on ground in many Nigeria secondary schools.

Bisi, Kofoworola and Adegunle (2010) noted that government had reviewed the 6-3-3-4 system and concluded that it has failed to meet the aspiration of its promoters as well as inability to adequately respond to many challenges facing education in Nigeria. Olubor (in Ayodele and Adeleke, 2015) opined that education as a dynamic system requires certain inputs from time to time to carry out the curricular activities designed for the achievement of the system's goals. The inputs included teachers, both in quality and quantity, students, finance, materials and equipment. Unfortunately, not all students that enrolled for the Junior Secondary Education enjoyed the benefit of completing their JSS3 education. Many complete at very high cost in terms of financial and time implications when one weighs the time spent for this level of education by each student in terms of student-years (Ayodele and Adeleke, 2015). Wastage in education manifests when resources given to education are not utilized to produce the output at the required time and education system of the school can be regarded as inefficient.

Public schools are owned, controlled, supervised, managed and financed by the government. The government spend large amount of money on education including direct and indirect costs. On the other hand, private schools are schools owned, controlled, supervised, managed and financed by individual proprietors or proprietresses for the purpose of making profits, nonetheless licensed by the government. Private schools are expected to be more efficient because they have the privilege of selecting pupils for admission and admit only the brilliant pupils. Furthermore, private school students pay exorbitant fees, and their parents/guardians pay more attention to their education. They sometimes arrange extra classes for their children/wards compared to students of public schools. Ayeni (2005) affirmed that private institutions evolve for reasons of provision of services and the maximization of profit.

According to Ayodele and Adeleke, (2015) the internal efficiency of any school depends upon the way it is managed, planned and administered. They further observed that wastage may have been attributed to inadequacies in school production variables. The variables include the learning environment, student-teacher ratio, teachers' motivation, school organizational climate, teachers' quality and quantity. These are relevant factors that the academic performance of a student depends upon as long as he/she is in the school. It is no longer news that public schools particularly junior secondary schools, lack basic school facilities such as adequate chairs/desks, toilets, teaching aids, classrooms, and so on. The school learning environment is disgusting and hostile resulting into high cases of school dropouts (Ajayi, 2008, Owolabi and Fabunmi, 1999 and Afolabi, 2006). Another factor that could influence efficiency includes high enrolment and increased class size (Ayodele and Adeleke, 2015). Unquestionably, these factors have diminishing effects on internal efficiency.

It remains a fact that inadequacies in school production variables facilitate internal efficiency. At this juncture, the pertinent question to ask is: do these school production variables still influence internal efficiency of public and private junior secondary schools in Oyo State?

1.2 Statement of the Problem

Internal efficiency is the internal operation of an institution relating to avoidance of wastages through judicious use of resources that are available to the school system at a given time. However, it has been established that not all students enrolled for the junior secondary education at a particular level/cycle enjoy the benefit of completing their educational programme. Some students will fail, some will even drop out of the system completely, the few who could be privileged to complete the cycle will have to use the number of student year which is higher than the minimum prescribed for the level of such education. This is nothing but wastage and inefficiency in the system. Wastage has been attributed to the poor learning environment, abysmal student-teacher ratio; poor teachers' motivation, harsh school organizational climate, low teachers' quality and quantity, among others. Researchers have observed that cases of repetition and dropout in public secondary schools appeared to be more rampant than the case of private secondary schools and this might not have been unconnected with certain school

production variables which include the learning environment, student-teacher ratio, teachers' motivation, school organizational climate, teachers' quality and quantity.

Purpose of Study

The purpose of this study is to examine the school production variables and internal efficiency of public and private junior secondary schools in Oyo State, Nigeria. The study ascertained whether there is any relationship between the school production variables (such as the learning environment, student-teacher ratio, teachers' motivation, school organizational climate, teachers' quality and quantity) and the internal efficiency. The study will also investigate which is more internally efficient between a public and a private junior secondary school system in Oyo State.

Research Questions

The following research questions have been raised to guide the study:

- What is the wastage rate in public and private junior secondary schools in Oyo State looks like?
- To what extent are public and private junior secondary schools internally efficient?

Research Hypotheses

The following hypotheses have been formulated for the study:

- There is no significant difference between the internal efficiency of private and public secondary schools in Oyo State
- School production variables such as the learning environment, student-teacher ratio (STR), teachers' motivation, and school organizational climate do not make any significant contribution to the internal efficiency of public and private junior secondary schools in Oyo State.

Research Method

The research design adopted for this study was descriptive adoption of the *ex-post factor* type. The study population consist one hundred and sixty seven (167) public junior secondary schools and one hundred and fourteen (114) private junior secondary schools in Oyo State. Thirty (30) public and twenty (20) private Junior Secondary school teachers were respectively sampled using purposive and proportional stratified random sampling techniques. A validated inventory titled "data on school records and students" and questionnaire were used to collect data for the study. The data collected were analyzed using descriptive statistics of frequency count and percentages. T-test and multiple regressions were used to test the hypotheses at 0.05 level of significance.

Results

3.1 Research Question 1:

What is the wastage rate in public and private junior secondary schools in Oyo State looks like?

Table 1: The wastage rate in public and private secondary schools

| Public | | | | Private | | |
|---------|------------------|-----------------|----------------|-------------------|----------------|----------------|
| Session | Repetition rate% | Dropout rates % | Wastage rates% | Repetition rates% | Dropout rates% | Wastage rates% |
| 2011/12 | 4.9 | 2.12 | 6.17 | 5.01 | 3.07 | 12.05 |
| 2012/13 | 3.23 | 3.54 | 4.49 | 4.94 | 8.21 | 9.72 |
| 2013/14 | 3.72 | 2.84 | 5.79 | 5.79 | 6.72 | 11.51 |
| 2014/15 | 2.62 | 6.92 | 9.59 | 4.99 | 9.05 | 20.75 |

Table 1 shows the wastage rates in both public and private Junior Secondary schools in Oyo State. In 2011/12 academic session, the wastage rates were 6.17% and 12.05% in public and private schools respectively. It was 4.49% and 9.72% respectively in Public and Private Schools for the year 2012/2013. In 2013/2014 (the expected year of graduation), the wastage rates were 5.79% and 11.51% in public and private junior secondary schools respectively. Some students could not meet up at the end of the ideal three years cycle between 2011/2012 and 2013/2014 academic sessions. The wastage rates in 2014/2015 were 9.59% and 20.75% in public and private junior secondary schools, respectively.

3.2 Research Question 2:

To what extent are the public and private junior secondary schools internally efficient?

In order to determine the internal efficiency, the wastage ratio was computed. The reciprocal of the wastage ratio was also computed to determine the coefficient of efficiency. Wastage ratio was determined as follows:

$$\text{Wastage Ratio} = \frac{\text{Actual Input} - \text{Output Ratio}}{\text{Ideal Input} - \text{Output Ratio}}$$

Table 2: The internal efficiency of selected private and public secondary schools in Oyo State

| Type of school | Input (student-years) | Output (completers) | Actual (input/output) | Wastage ratio | Coefficient of efficiency |
|----------------|-----------------------|---------------------|-----------------------|---------------|---------------------------|
| Private | 2,298 | 585 | 3.39 | 1.31 | 76% |
| Public | 13,237 | 4002 | 3.31 | 1.10 | 91% |

The flow chart of the true cohort computed, Table 2 revealed that one successive completer in private school used 3.39 student-years to complete while it took 3.31 student years to complete in public junior secondary school education in Oyo State during the period of study. This table further reveals that the coefficient of efficiency of public and private junior secondary schools were 91% and 76% respectively. This implies that public junior secondary schools were more internally efficient than private junior secondary schools during the period of study.

3.3 Testing of Hypotheses

Hypotheses 1: There is no significant difference between the internal efficiency of private and public secondary schools in Oyo State.

Table 3: T-test analysis difference in the internal efficiency between private and public secondary schools in Oyo State

| Type of school | N | Mean | SD | T-cal | Df | T-table | Remark |
|----------------|----|-------|------|-------|-----|---------|--------|
| Private | 20 | 45.41 | .39 | 3.21 | 142 | 1.92 | Sig. |
| Public | 30 | 98.63 | 1.27 | | | | |

Table 4 reveals that t- calculated (3.41) was greater than the critical table value (1.96) at 0.05 level of significance. Hence, the null hypothesis was rejected. There is therefore significant difference in internal efficiency between the private and public junior secondary schools in Oyo State.

Hypotheses 2: School production variables such as the learning environment, student-teacher ratio (STR), teachers' motivation, and school organizational climate do not make any significant contribution to the internal efficiency of public and private junior secondary schools in Oyo State.

Table 4: Relative contribution of each selected school factors to the internal efficiency in private Junior Secondary Schools in Oyo State.

| Selected Production Variables | Code | Contribution of each variable | Standard error | T-cal | P-value | Remark |
|-------------------------------|----------------|-------------------------------|----------------|-------|---------|--------|
| Learning environment | X ₁ | .001294 | .153 | .167 | .003 | Sig |

| | | | | | | |
|-------------------------------|----------------|---------|------|-------|------|---------|
| Student-teacher ratio | X ₂ | .001474 | .133 | .871 | .004 | Sig |
| Teachers motivation | X ₃ | .09222 | .148 | 1.222 | .003 | Sig |
| School organizational climate | X ₄ | .0779 | .348 | .451 | .729 | Not Sig |

Table 4 shows p-value of 0.003, 0.004 and 0.003 for learning environment, student-teacher ratio (STR) and teachers' motivation, respectively which less than t-calculated at 0.005 alpha level which indicates that they are significant to internal efficiency. Only schoolorganizational climate shows a p-value of 0.729 that was greater than t-calculated. This implies that schoolorganizational climate made no significant contribution to the internal efficiency of private Junior Secondary Schools in Oyo State at the time of this study

Table 5: Relative contribution of each selected school factors to the internal efficiency in public Junior Secondary Schools in Oyo State.

| Selected Production Variables | Code | Contribution of each variable | Standard error | T-cal | P-value | Remark |
|-------------------------------|----------------|-------------------------------|----------------|-------|---------|--------|
| Learning environment | X ₁ | .001294 | .153 | .167 | .003 | Sig |
| Student-teacher ratio | X ₂ | .001474 | .133 | .871 | .002 | Sig |
| Teachers motivation | X ₃ | .09222 | .148 | 1.222 | .003 | Sig |
| School organizational climate | X ₄ | -.0779 | -.348 | 3.251 | .002 | Sig |

Table 5 reveals the various contribution of the independent variable to the internal efficiency of public junior secondary schools in Oyo State at 0.05 alpha levels. The p-values 0.003, 0.002, 0.003, 0.002 for learning environment, student-teacher ratio (STR), teachers' motivation, and school organizational climate, respectively were less than T-calculated. This shows that there were significant contributions of the variables to the internal efficiency of public junior secondary schools.

4. Discussions

The findings from this study revealed that private schools have higher wastage rates during the period of study. This finding is in line with the study of Ayodele and Adeleke (2015), which showed that private schools have higher wastage rates throughout the period of study carried out in Ekiti State, Nigeria. This result may be connected to the fact that private schools do not encourage automatic promotion. Also, the rate at which students change schools before writing the final examinations is high in a bid to evade payment of back log of fees. However, findings showed a high percentage of dropouts in private Junior Secondary Schools. This may not be disconnected from the high tuition fees in private schools and economic depression been witnessed in the country which could prompt some poor parents to withdraw their children from such schools. The findings agree with some earlier studies and researches across all educational levels, that of Adesina (cited in Nakpodia, 2010) which recorded 31 to 75% dropout in Lagos State Schools in Nigeria; and Bayo (cited in Nakpodia, 2010) which was 35.4% in defunct Bendel State of Nigeria.

It was shown from the study that each selected school-production variables had significant contribution to the internal efficiency except school organizational climate in private schools. This might be as a result of proprietors/proprietress unsupportive attitude to their teacher educational progress, restrictions and direct teachers authoritatively. These would have affected the quality of teaching and general tone of the school. A student completer in the public secondary school spent 3.31 student-year while it was 3.39 student-year in the private school. The wastage ratio calculated was 1.10 and 1.31 in public and private Junior Secondary Schools respectively. According to Ayodele and Adeleke (2015), a wastage ratio of 1 (which is not achieved in reality) shows a perfect internal efficiency. The nearer the wastage ratio to 1, the more efficient the system and in contrast the farther the less. From observation, wastage ratios of 1.10 and 1.31 which are above unit, shows a fairly internal efficiency for secondary schools in a developing country. The coefficient of efficiency for public school was 91% and 76% for private school, which are above average. By implication, both public and private Junior Secondary Schools in Oyo State were fairly internally efficient throughout the period under study i.e. 2011/2012 to 2013/2014 academic sessions. Public schools were however more internally

efficient than private schools during the period of study due to lesser class repetition and lower dropout rates. This finding corroborates Lubienski, Lubienski, and Crane, (cited in Olasehinde and Olatoye, 2014)) who said after holding demographic factors constant, public schools performed just as well if not better than private schools.

5. Conclusion and Recommendations

The selected school-production variables contributed significantly to the internal efficiency of public and private Junior Secondary Schools in the state. The element of wastage rates which appeared in forms of repetition and dropout in the two types of school were minimal. This shows that Oyo State public and private Junior Secondary Schools were fairly internally efficient during the period of study.

However, public Junior Secondary School was more internally efficient than the private counterpart in Oyo State during the period of study. Considering the implication of these findings for resource utilization, the following recommendations are considered necessary. Private schools in Oyo State should develop mechanisms to address issues causing wastages and adhere strictly to an Open School organizational Climate which is characterized by teacher relations that are professional, collegial, friendly, and committed to the education of students. In addition, proprietors/proprietresses are to be supportive and professional and does not restrict or direct teachers with authoritative orders. There is need to employ more teachers behaviors such as collegial, intimate and disengaged-refers to a lack of meaning and focus in professional activities to increase academic performance and reduce the rate of repetition and dropouts. In addition, parents should stop having negative perception about the system of operation in public secondary schools in Oyo State.

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