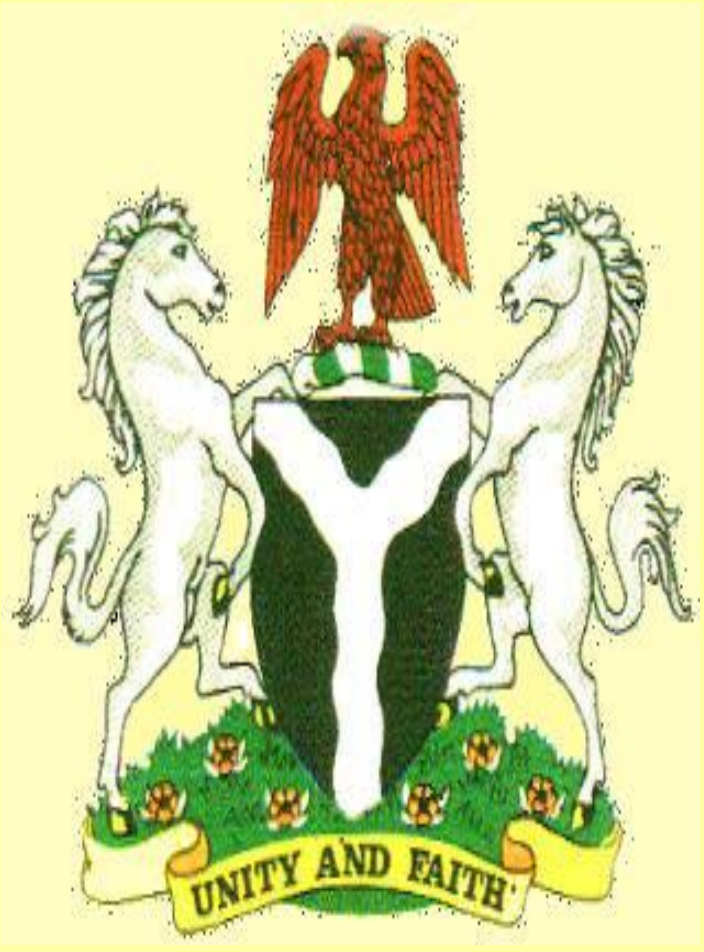


Should Nigeria introduce Free Tuition or Increase School Expenditures in Primary Schools to improve Human Capital?



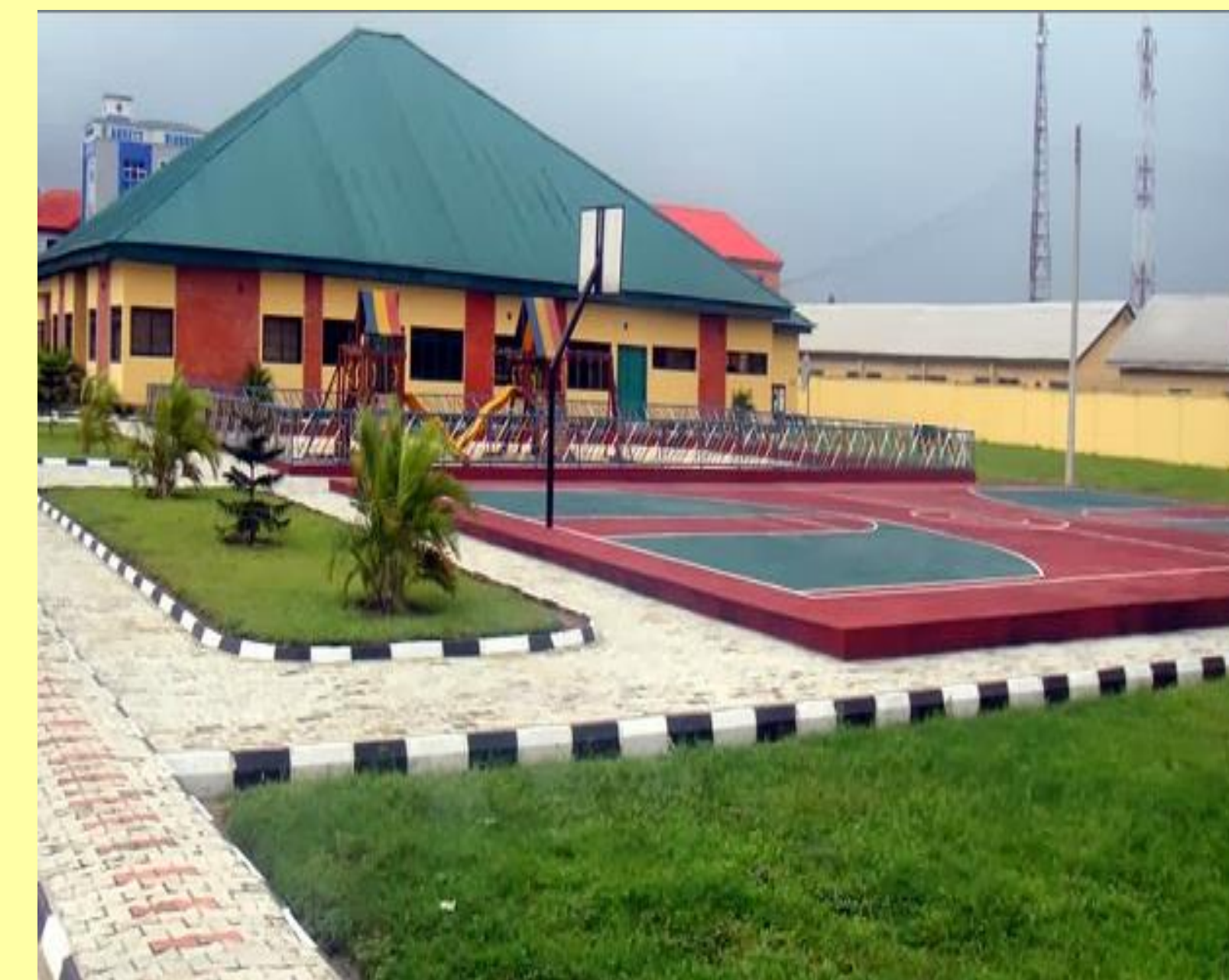
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1. Introduction

In 2004, a free tuition policy was introduced in Nigeria, in order to increase the enrolment levels into primary schools and junior secondary schools. The main purpose of this research is to determine if this policy is best to improve human capital in Nigeria. This research is based on the assumption that a country's human capital is dependent on the quality of schools, as well as the enrolment levels. A model is calibrated and simulated to predict the impact of a free tuition policy and a policy of increased school expenditures on school enrolment and quality of schools.



5. Simulation and Calibration

In the simulation, we assume that the utility functions are CES utility functions shown below:

$$U[q, (1-t), yI-(q-b)] = U[h, (1-t), yI+w] \text{ ----- (1)}$$

$$U[q, (1-t), yI-(q-b)] = U[s, (1-t), yh-s] \text{ ----- (2)}$$

Eqn (1) characterizes a household indifferent between public school enrolment or leaving their children out of school, while Eqn (2) characterizes a household indifferent between public and private enrolment. The opportunity cost of education (w) is calibrated, while the human capital without education is normalized to 1. Variables b and q stand for subsidy and school quality, respectively, and s is the private school tuition.

2. Universal Basic Education

The UBE is a free tuition policy program introduced in 1999, and finally signed into law on the 26th of May 2004, by former President Olusegun Obasanjo. UBE provides children with free tuition for the first nine years of their education. The UBE is aimed at eliminating illiteracy, poverty and stimulating and accelerating national development and integration. It is, therefore, adopted as a strategy to achieve all the Millennium development goals related to education.

3. Literature Review

There is a general consensus in economic literature on the increased school enrolment due to free primary tuition (Lucas and Mbiti 2012). In fact, Grogan (2008) observes that in Uganda, free tuition is associated with an increased probability of early enrolment. However, there exists a trade off between school enrolment and school quality. This is because, higher enrolment increases the student-teacher ratio, which has a negative effect on educational attainment (Handa 2002). Since improving school quality, although beneficial, will be detrimental to the poor (Glick 2006), this research considers the option of maintaining free tuition, whilst improving quality of schools.

4. Data

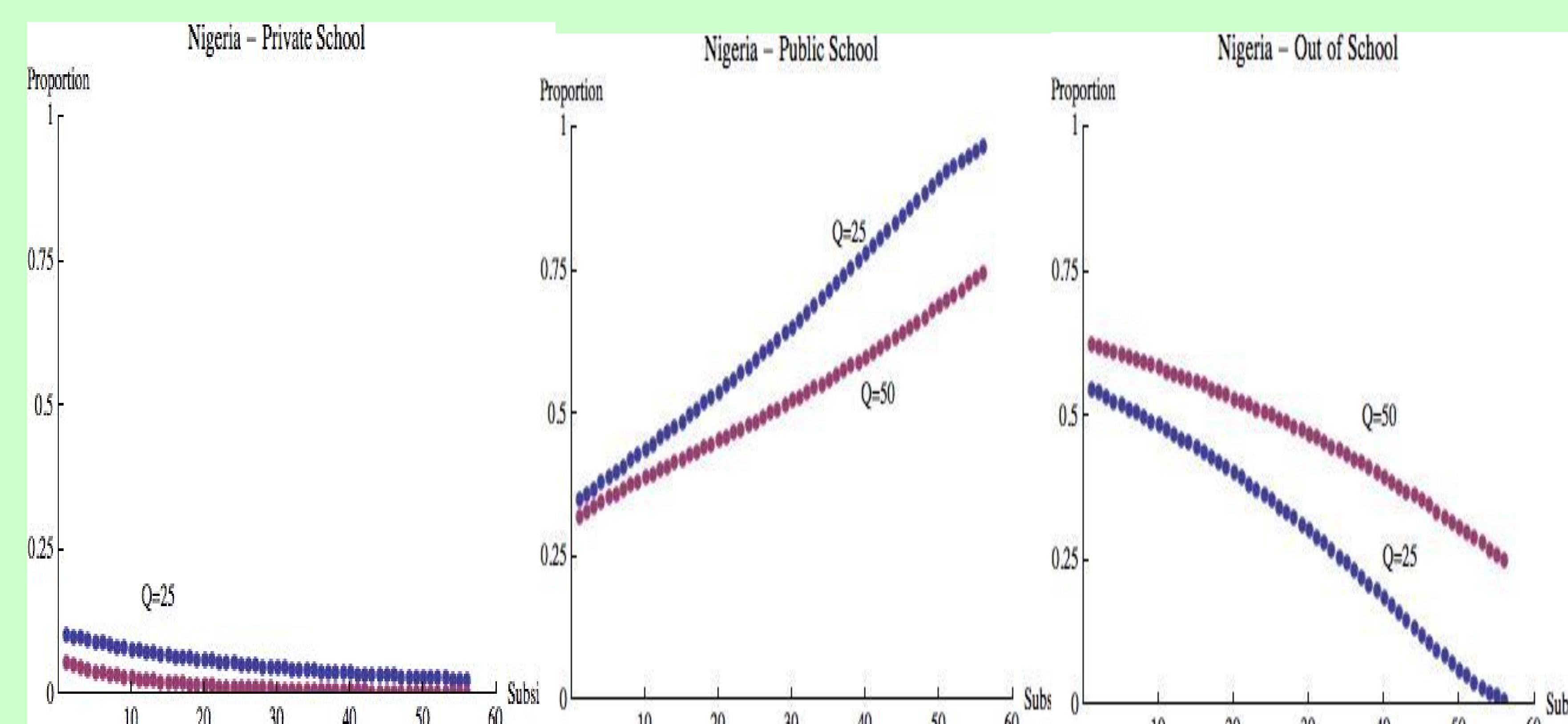
In order to perform the simulations and calibrations of the model, different data had to be obtained on Nigeria's educational system and economy in general for 2010.

This data was obtained from the following sources: UNESCO Institute for Statistics, World Bank Database, Nigeria DHS EdData Survey 2010.

With the above listed data, the following variables were identified: Enrollment levels (public, private, out of school), tuition fees, mean and median income of the population, and mean public school expenditure per student.

6a. Results: Graphs

Relationship between free tuition and primary school enrolment



6b. Results: Discussion

From the simulations, the changes in enrolment proportions in public, private and those out of school can be predicted against changes in the amount of subsidy provided by the government. The red line represents a school with improved quality. The blue line represents a school with no change in quality.

According to the graphs, there exists a positive relationship between proportion of children in public schools and amount of subsidy. In private schools, there exists a negative relationship between the two variables, with proportion of children enrolled asymptotically approaching zero as subsidy rises. For children out of school, there also exists a negative relationship between the two variables.

It is important to note that in public schools with no change in quality, the enrolment proportion rises faster than it does when quality is improved. The same goes for children out of school, who tend to enroll into public schools faster when compared to the situation with improved quality. This shows, therefore, that to improve the quality of schools, vis-à-vis maintaining the same level of enrolment, government has to increase subsidy as well.

The proportion of enrolment in public school will approach 100%, while those in private and out of school will approach zero as the subsidy increases.

7. Conclusion

The calibration result show a positive relationship between free tuition and school enrollment level. Also, increase in school expenditure leads to improvements in school quality. However, total enrolment does not increase as fast. Most of the increases in public enrolment is due to private school households preferring better quality public schools. Households indifferent between staying out of school and going to a public school, only start enrolling when subsidies can cover their opportunity cost. Therefore, in order to improve human capital, the government should, in addition to improving school quality, increase the subsidy amount. However, depending on the government's budget, different combinations of quality and subsidy level can be chosen.

8. References

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