4th CSEA Economic Policy and Fiscal Strategy Seminar
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A Cost-Effectiveness Analysis of School Feeding and Education Assistance Programs in Nigeria

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OUTLINE

- Key Message
- Summary and Conclusion
- Introduction & Programs Background
- Methodology
- Results
- Recommendations
Knowledge about the concept and application of cost-effectiveness analysis can help policymakers make informed choices about programs that can improve the lives of the citizens.
SUMMARY AND CONCLUSION

- This cost-effectiveness analysis focuses on two education interventions in Nigeria:
  - Education Assistance (EA)
  - Home Grown School Feeding and Health (HGSF & H)

**Main findings**

- The EA programme has a lower cost per beneficiary and higher effectiveness value
- The EA programme is more cost-effective (6 times) than the HGSF&H
INTRODUCTION

- Increasing access to basic education is a priority for policy makers.
- Low school enrollment is a big problem in Nigeria, especially in the North, and stands in the way of the Education for All (EfA) program and education MDG.
- Enrollment can be increased using several interventions, but for this analysis, we focus on: EA and HGSF&H.
BACKGROUND OF HGSF&H PROGRAM

- The objective was to increase enrollment and performance of pupils in rural communities

- It was introduced in some Nigerian States including FCT in 2005, and recorded significant success in terms of increased school enrollment

- The program was suspended in FCT in 2008 due to funding constraints
Launched by the Federal Capital Territory Administration in 2007, with the objective of improving enrollment and quality of education at all levels.

The scholarship included provision of school materials for students across the six area councils of FCT.
METHODOLOGY

- Cost Analysis
- Effectiveness Measures
- Cost Effectiveness Ratio (CER)
- Sensitivity Analysis
- Data Sources
COST - Items

- HGSF&H Program
  - Personnel – Desk Officers and Cooks
  - Facilities – School Kitchen
  - Materials – Cooking Utensils
  - Workshop Mobilization and Advocacy.

- EA Program
  - Personnel – Supervisors
  - Materials – School Uniforms, Sandals, School Bags, Textbooks and Instructional Materials
EFFECTIVENESS MEASURES

- The effectiveness measure is the probable impact of the interventions.

- The probable impact is derived by multiplying the probability of correct implementation (PCI) with the estimated achievements in test scores (ATS) for each intervention.
COST EFFECTIVENESS RATIO

- CER is derived by dividing the incremental cost of each program by the probable impact (effectiveness)

- The program with the lower CER is considered to be more cost-effective
SENsitivitY ANALYSIS

- The assumptions demands that sensitivity analysis be conducted.
- One-way and multi-way sensitivity analyses to determine the robustness of the estimates and parameters.
DATA SOURCES

- National Bureau of Statistics, FCT UBE, FCT Scholarship Board, Universal Basic Education Commission, Federal Ministry of Education
### Estimates of incremental cost (in NGN) of HGSF&H and EA programmes

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Total number of pupils</th>
<th>Intervention cost</th>
<th>Unit cost</th>
<th>Average cost of primary education</th>
<th>Unit cost of primary education with intervention</th>
<th>Incremental cost</th>
<th>Incremental cost (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Grown School Feeding and Health</td>
<td>81,547</td>
<td>665,639,68</td>
<td>8,627.65</td>
<td>22,215.54</td>
<td>29,518.49</td>
<td>7,302.95</td>
<td>32.87</td>
</tr>
<tr>
<td>Education Assistance</td>
<td>6,063</td>
<td>30,315,000</td>
<td>5,000</td>
<td>22,215.54</td>
<td>24,563.69</td>
<td>2,348.15</td>
<td>10.57</td>
</tr>
</tbody>
</table>
INCREMENTAL COST

- The introduction of HGSF&H resulted in an incremental cost of about 32.87% of the average cost of primary education (before the interventions)
- The incremental cost for HGSF&H is higher than the incremental cost for the EA program – 10.57%
- These cost figures do not necessarily suggest how cost effective the EA program is relative to the HGSF&H programme
### Estimates of the CERs of HSGF&H and EA programs

<table>
<thead>
<tr>
<th>Intervention</th>
<th>X - Estimated increase in achievement (%)</th>
<th>Y - Probability of adequate implementation (%)</th>
<th>XY - Probable impact (%)</th>
<th>Z - Incremental cost (%)</th>
<th>Z/XY - CERs (%)</th>
<th>(NGN)(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Grown School Feeding &amp; Health</td>
<td>16.7</td>
<td>18.1</td>
<td>3.02</td>
<td>32.87</td>
<td>10.88</td>
<td>2,417.09</td>
</tr>
<tr>
<td>Education Assistance</td>
<td>14.4</td>
<td>41.0</td>
<td>5.9</td>
<td>10.57</td>
<td>1.79</td>
<td>397.66</td>
</tr>
</tbody>
</table>

\[
CER = \frac{Z}{XY} = \frac{\cos t}{\text{effectiveness}}
\]

\(^a\): 2,417.09 = 10.88% \times 22,215.54 and 397.66 = 1.79% \times 22,215.54
Estimates of the CERs of HSGF&H and EA programs

- CER of EA program is NGN397.66 per student repetition averted
  - Relatively lower than the NGN2,417.09 estimated for the HSGF&H program

- The EA program is more cost-effective than the HGSF&H program.
## One-Way Sensitivity Analysis

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<tr>
<th>PARAMETERS</th>
<th>BASE CASE CERS</th>
<th>± 30% Changes in Parameters</th>
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<tbody>
<tr>
<td></td>
<td>EA</td>
<td>HGSF</td>
</tr>
<tr>
<td>PC</td>
<td>1.79</td>
<td>10.88</td>
</tr>
<tr>
<td>COI</td>
<td>1.79</td>
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# Multi-Way Sensitivity Analysis

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<tr>
<td>COI, PC &amp; PI</td>
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Thank You!