

## Will formula based funding and decentralized management improve school level resources?

Nisha Arunatilake and Priyanka Jayawardena  
Institute of Policy Studies of Sri Lanka  
14<sup>th</sup> November, 2008

### Background and motivation

- International experience suggests that
  - need-based resource allocation through formula funding
  - And, decentralized management of these funds
  - has great potential for improving resource availability and management of schools.
- However, the success of these schemes depend on
  - the level and depth of decentralization,
  - availability of information for implementation and monitoring these schemes,
  - availability of basic resources,
  - strength of school-support systems,
  - and the ability of the central government to motivate local level players to achieve identified education goals.



### EQI Scheme

- **Education Quality Inputs (EQI) Scheme**
  - Improve school performance
  - Through...
    - Formula based funding
    - and, decentralized management
- **EQI scheme**
  - Implemented since 2000
  - 2% of the total recurrent and 20% of the total capital budget is distributed among schools (RS. 579 million in 2004; 81% utilized)
  - Grants allocated according to a
    - norm-based-resource allocation formula
      - (based on: grade cycles, student numbers, and school needs)
    - adjustments for economies and diseconomies of scale based on a allocation scheme.
  - Funds are managed by schools and used for EQI



### Study Objectives

- The study specifically examines:
  - 1) **How is allocation of funds different under EQI compared to the need-based funding?**  
(method: descriptive)
  - 2) **IS EQI fund allocation more equitable, from the individual perspective?**  
(method: benefit-cost analysis)
  - 3) **What affects utilization rate of EQI funds?**  
(method: partial equilibrium analysis)



## How is allocation of funds different under EQI compared to the need-based funding?

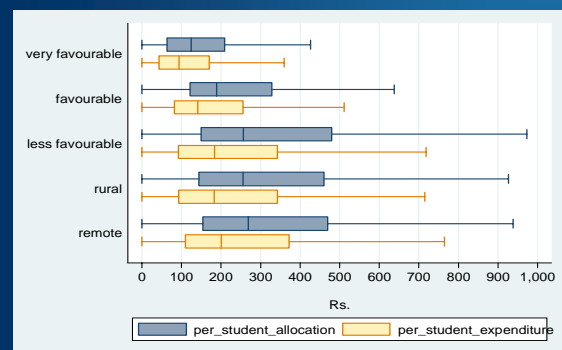
### Allocation of funds under EQI

- Need-based allocation of funds – issues
  - Effectiveness depend on the ability of education officials (e.g., school heads) to identify needs
    - May lead to historical budgeting
  - Identification of needs according to guidelines (lack of flexibility)
  - Budget limitations leads to prioritizing
    - More influential/ enterprising school head receive more funds
  - ... these lead to inequitable distribution of funds
- Under EQI, similar schools are treated equally
- And, student characteristics, school cycles and school site differences are taken into account when allocating funds

### Allocative efficiency of EQI funds

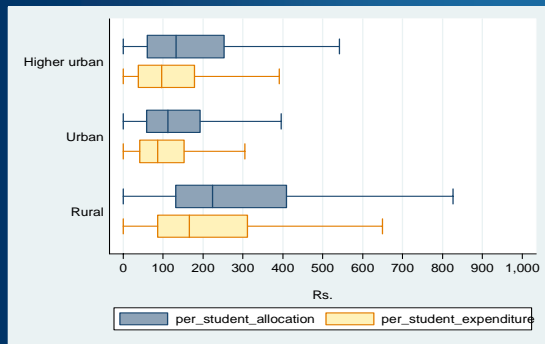
- Larger amounts of per student funds for
  - Disadvantaged schools
  - Rural schools
  - Smaller schools

### Per Student EQI Allocation and Expenditure - by Type of School



Source: Own calculations, using school census data

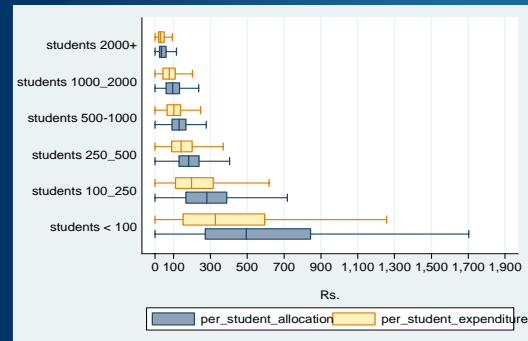
### Per Student EQI Allocation and Expenditure by Location of School



Source: Own calculations, using school census data



### Per Student EQI Allocation and Expenditure by Size of School



Source: Own calculations, using school census data



### Allocative efficiency of EQI funds

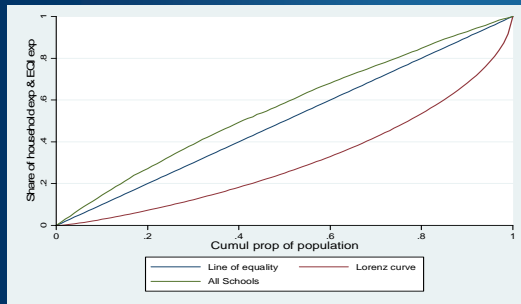
- This indicates that overall funds are distributed according to the goal of
  - uplifting disadvantaged schools
  - taking into account economies of scale (i.e., the fact that smaller schools need more per student administrative funds).
- But, the formula used to allocate funds is not easily understood
  - which makes analyzing the allocative effectiveness of EQI funds difficult



**IS EQI fund allocation more equitable, from the individual perspective?**

### Distribution of EQI Expenditure – All Schools

At the national level, EQI expenditure for all school cycles is progressive

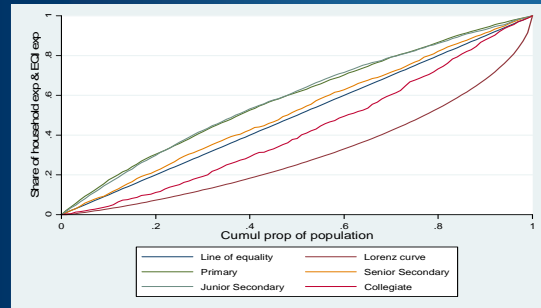


Source: Own calculations, using school census data



### Distribution of EQI Expenditure by Education Cycle

Progressive for primary and junior secondary school cycles and equitable for senior secondary school cycle

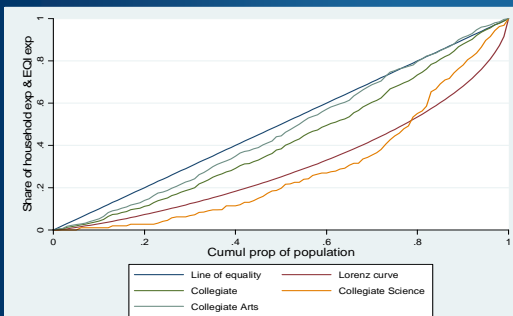


Source: Own calculations, using school census data



### EQI Expenditure at the Collegiate Level by Education Stream

Collegiate school cycle, by arts and science streams : expenditure on the science stream is regressive



Source: Own calculations, using school census data



### Distribution of EQI Expenditure

- EQI expenditure is distributed equitably for the most part, except at the collegiate level.
- The lower progressivity at higher school cycles are partly due to lower enrolments
- Particularly, in the science stream



## What affects utilization rate of EQI funds?

### Factors affecting utilization rate of EQI funds

- **Dependent var**
  - $UR_i = \text{tot\_exp school } i / \text{tot\_alloc school } i$
- **Independent var**
  - $T_i$  - teacher characteristics,
  - $S_i$  - school characteristics,
  - $M_i$  - management capacity of the school,
  - $P_i$  - principal's characteristics
  - $C_i$  - school community characteristics
  - $Z$  - school administration zone,
  - $u_{iz}$  is a random disturbance term
- Estimated using ordered probit model

$$UR_i = \beta_1 T_i + \beta_2 S_i + \beta_3 M_i + \beta_4 P_i + \beta_5 C_i + \beta_6 Z + u_{iz}$$

### Results

- School characteristics
  - **Lower EQI utilization rates if:**
    - high student-teacher ratios,
    - smaller primary schools and
    - less facilitated collegiate level schools
- Principal characteristics
  - **Higher utilization rates if:**
    - qualified principals
    - male principals (primary schools)
- Community characteristics
  - Location and community level characteristics influence EQI utilization rates (large effect)
  - EQI expenditures is lower in all provinces relative Western province
- State-administration
  - EQI utilization rates differ across Provinces and zones
  - Timely allocation of funds and inspections improve fund utilization rates

### Conclusions ...

- This study examine the success of the EQI Scheme that envisage improving school performance through formula based funding and decentralized management of schools
- The study finds that:
  - EQI funds are allocated more equitably
    - Similar schools are treated equally and
    - Smaller schools, rural schools and more disadvantaged schools receive and spend a higher per capita allocation per student
    - However, the funding formula can be made clearer
    - So that easier to assess whether funding goals are met.
  - Fund allocation is progressive (poorer get more funds)
    - Except at higher school cycles, especially in the science stream
- However, around 20 per cent of these funds are left unspent

## Conclusions

- Equitable Allocation alone not sufficient to improve school performance
- Funds need to be properly utilized.
- Same factors that affected in uneven distribution of funds under the other funding models results in uneven utilization of funds under formula based funding.
  - For example, ability of principals
- This shows that fundamental management resources are a necessary condition to improve resources at the school level, under any funding model.

## Recommendations

- Improving school participation at higher grades will improve benefits of EQI
- To minimize under usage of funds
  - EQI procedure need to be reformed to help managers in small rural schools
  - The provincial and zonal level administrative divisions could play a large supportive role to schools
  - But, administrative capacity at these levels should be improved
- State level monitoring and support influences education management at the school level.

**Thank You**

[www.ips.lk](http://www.ips.lk)