Productivity of health workers: the case of Tanzania

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What is productivity analysis?

- Measurement of outputs relative to inputs

$$\frac{Outputs}{Inputs}$$

- Outputs: Number of patients
- Inputs: Finances (or health workers, equipment etc.)

Why productivity analysis?

- Identify and learn from most productive units

- Allocate resources efficiently and equitably
  - Ex: Personell from low to high productive units
    - Higher output?
    - More equal workload

Methods for benchmarking productivity

- Total Factor Productivity analysis (TFP)
  - Compare each facility to the best performing facility

- Data Envelopment Analysis (DEA)
  - Compare to high performing – but "similar" – facilities
    - Similar size, similar input mix

- Stochastic Frontier Analysis (SFA)
  - Take into account possible measurement errors in your peers' productivity levels

MAP project, Tanzania (2006-10):
Health worker Motivation, Availability and Performance
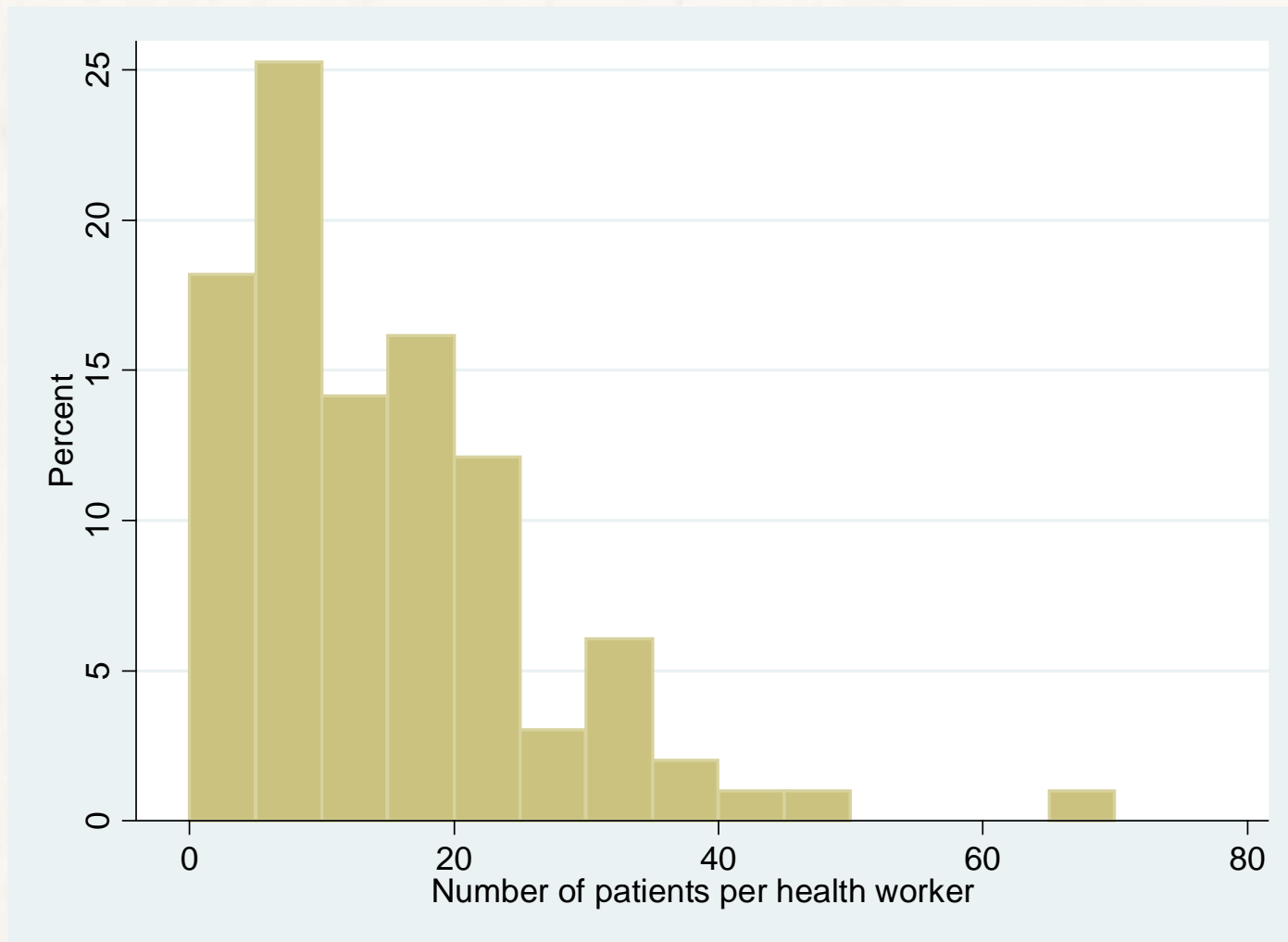

- 9 rural districts
- 126 health facilities
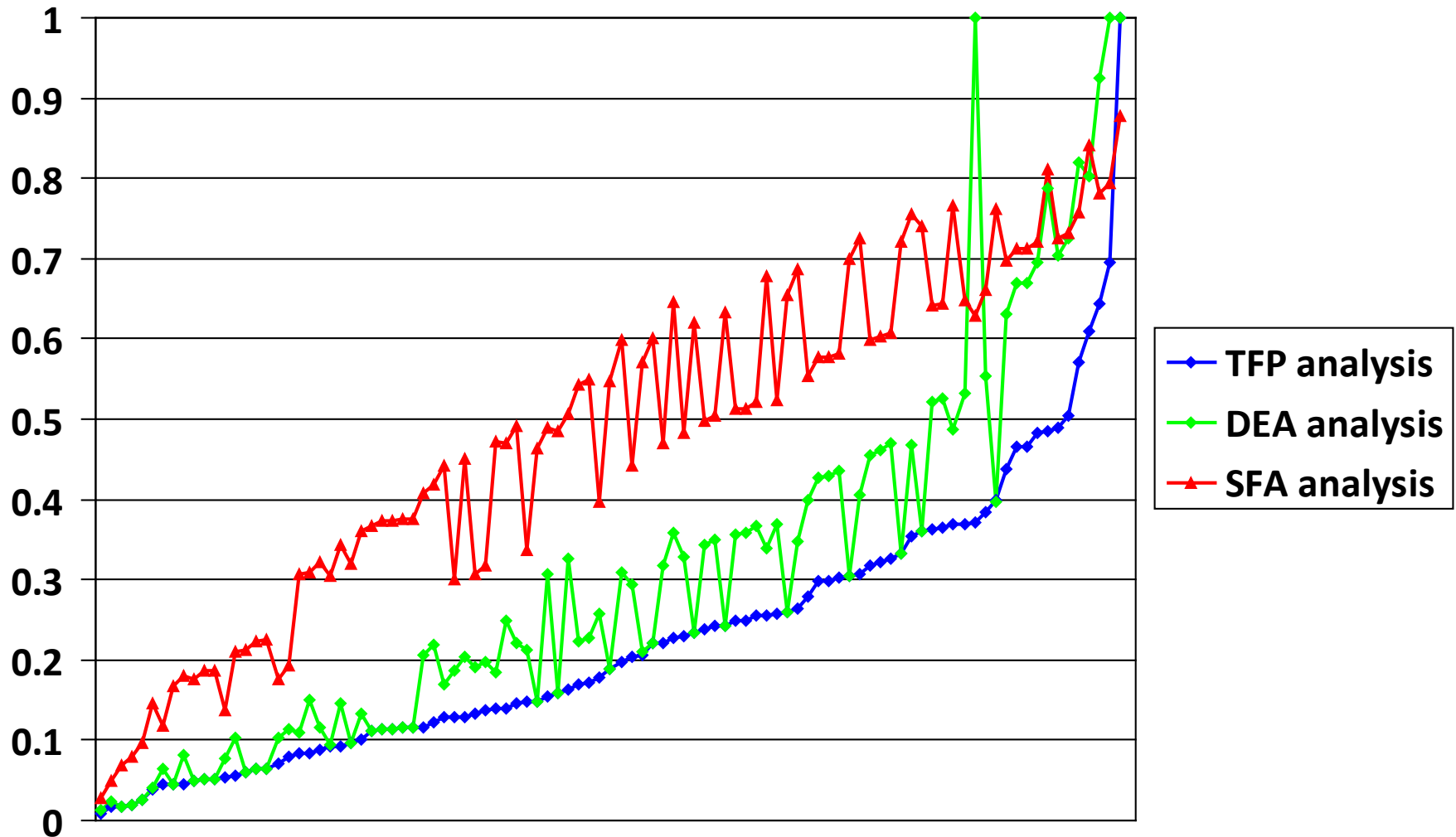 - 99 with data on number of patients over time

Simple productivity analysis

- Input:
  - Number of health workers in the OPD

- Output:
  - Number of patients treated in the OPD

⇒ Productivity:
  - Patients pr health worker

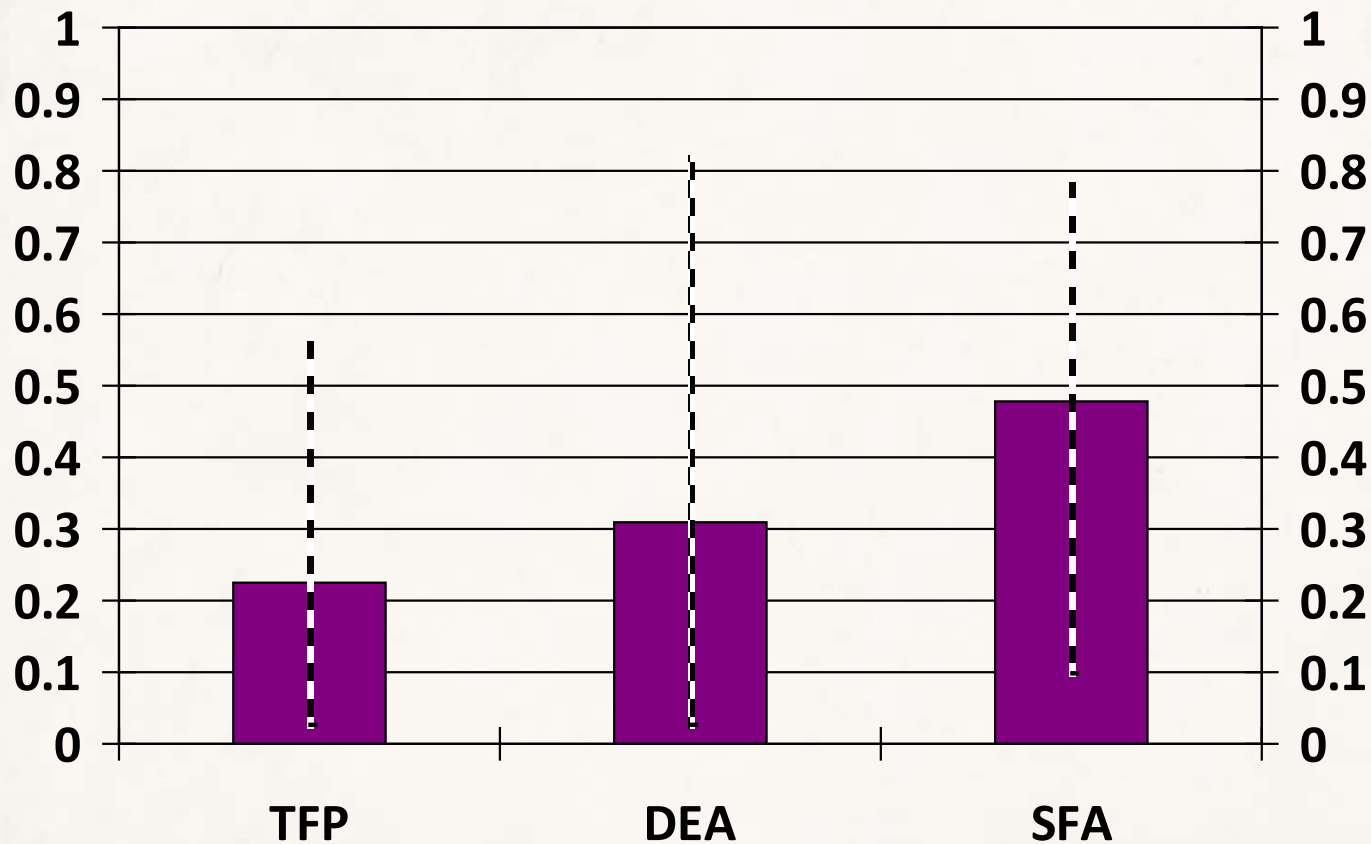# Patients per health worker (per day)

Productivity levels – by health facility

Average productivity (and variation)

Variation: 5 - 95 percentile

Conclusions

- Low average productivity
  - A few facilities do much better than most of the others

- Large variation in productivity

What to do?

- Learn from high performers

- Allocate additional health workers to high productive units

- Fewer health workers at low productive units?
  - Not necessarily. Could imply close-down. Equity?

Recommendations

- Don't do productivity analysis without good data!!

- Include all outputs
  - Delivery, vaccinations, OPD, etc.

- Use the DEA approach
  - More sensible than TFP analysis
    - Accounts for differences in the size of health facilities
  - Easier and more intuitive than SFA analysis
    - Easily deals with multiple inputs/outputs
    - Software freely available (e.g., DEAP)