Strategies for Measuring Progress on Agricultural Child Labor: Measurement and Methodological Issues

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Introduction

- What do we mean by measuring progress?
  - Monitoring national or sector rates of child labor
  - Qualitative studies to understand potential determinants of child labor in particular industries or sectors
  - Impact of 'child labor reducing' interventions
    - Targeting vulnerable children or worst forms of child labor
    - Education based programs
    - Secondary effects of agricultural investments (firms or smallholders)
  - Policy or macroeconomic effects on child labor

- Across objectives, measurement and methodology can facilitate better and more comparable knowledge.

Widespread variation exists in measurement of child labor

Children's Involvement in Economic Activity, Ages 10-14

Country	Survey	Children in Economic Activity (%)
Ghana	SIMPOC, 2000	34.2
	CWIQ, 2003	7.7
Kenya	MICS2, 2000	44.0
	SIMPOC, 1998/99	8.0
Lesotho	MICS2, 2000	34.4
	CWIQ, 2002	3.5
Senegal	DHS, 2005	35.2
	SIMPOC, 2005	22.3

Guarcello et al. 2010 investigate differences across 87 datasets for 35 countries.

Relevant Literature

- Possible reasons for the difference in measured labor force participation across surveys:
  - Sampling (intended or implemented)
  - Timing of measurement (e.g. seasonality)
  - Survey instrument
    - Recall period
    - Wording of questions (Campanelli et al,1989)
    - Sequence of questions (Martin and Polivka, 1995)
    - Detail of questionnaire (Kalton et al, 1982)
  - Respondent type:
    - Proxy respondents (Anker, 1983)
    - Children as respondents (Borgers et al. 2000)

Tanzania:
2x2 experimental design

Treatment 2:	*Treatment 1: Questionnaire design*	
Respondent type	Detailed (with screeningquestions)	Short
Self-reporting	Detailed, Self-Reporting	Short, Self-reporting
Proxy	Detailed, Proxy	Short, Proxy

- Sample size 1344 households from SHWALITA
- 7 districts throughout Tanzania
- Satisfactory degree of “randomness” across groups
- Not originally designed as a child labor experiment, but we analyze subset of child labor responses (25% of original sample of 10-15 year old children).

LFP and hours worked by children

	A.			B.		
	Short	Detailed	Diff	Proxy	Self-rep	Diff
Labor force participation (%)						
Boys	55.4	70.9	-15.4***	61.7	64.0	-2.3
	(0.50)	(0.46)	(0.06)	(0.49)	(0.48)	(0.06)
Girls	44.2	58.9	-14.7***	50.0	53.5	-3.5
	(0.50)	(0.49)	(0.06)	(0.50)	(0.50)	(0.06)
Weekly hours last week (unconditional)						
Boys	12.0	11.2	0.8	11.5	11.7	-0.2
	(15.5)	(12.4)	(1.7)	(13.2)	(15.0)	(1.7)
Girls	9.0	9.7	-0.7	9.0	9.9	-0.9
	(13.7)	(11.6)	(1.5)	(12.7)	(12.7)	(1.5)

No differences in children's hours of domestic activities such as firewood and water collection.

Differences in Sectoral Distribution by Gender for Children

	Boys			Girls		
A. Short or Detailed	Short	Detailed	Diff	Short	Detailed	Diff
Agriculture	52.5	68.5	-16.0***	42.9	58.2	-15.4***
Other sectors	2.9	2.4	0.5	1.3	0.7	0.6
Domestic Duties	30.2	9.4	20.8***	43.5	8.2	35.3***
No work	14.4	19.7	-5.3	12.3	32.9	-20.6***
Number of individuals	139	127			154	146
B. Proxy or Self-rep	Proxy	Self-rep	Diff	Proxy	Self-rep	Diff
Agriculture	60.3	60.0	0.3	49.5	51.8	-2.3
Other sectors	1.4	4	-2.6*	0.5	0.8	-0.3
Domestic Duties	21.3	19.2	2.1	23.7	20.2	3.5
No work	17.0	16.8	0.2	23.1	20.2	2.9
Number of individuals	141	125			186	114

Notes: Other sectors are specifically listed on the questionnaire and include mining/quarrying, manufacturing/ processing, gas/water/electricity, construction, transport, trading, personal services, education/health, public administration, and other industries. *** indicates statistical significant mean differences at 1%, ** at 5%, * at 1%.

Conclusions: Measurement

- Short questionnaire designs has similar, negative effect on both boys and girls LFP, lowers reports of girls working hours, increases reports of domestic duties and fewer reports of agriculture.
- Screening questions are quite important in correct classification of children's activities.
- Gender effects smaller than expected for girls? Proxy effects smaller than expected?
- Is the reduced precision in statistics worth the reduced cost of implementation in national surveys?
- Some measurement recommendations may differ in worst forms case studies where there is higher child labor stigma.

Methodology—
How do we measure impact?

- Measuring impact of interventions requires us to design studies that allow us to answer the question, "What would have this child's outcome have been without the intervention?"
  - Counterfactual analysis

- Ensuring equal probability of access or assignment of programs (randomized control trials) to children is one statistical method to ensure we get unbiased estimates of program effects relative to a control group.
  - If program is effective we can scale it up to the control.

What do we learn from impact evaluations?

- We may want to learn more than just whether an intervention works or not, but also:
  - *why it works*
    - What constraints does the intervention relax to reduce child labor?
      - Income, school proximity or quality, knowledge, other labor constraints…
  - *whether it is the most effective intervention*.
    - Test alternative program designs or intensity of treatment.

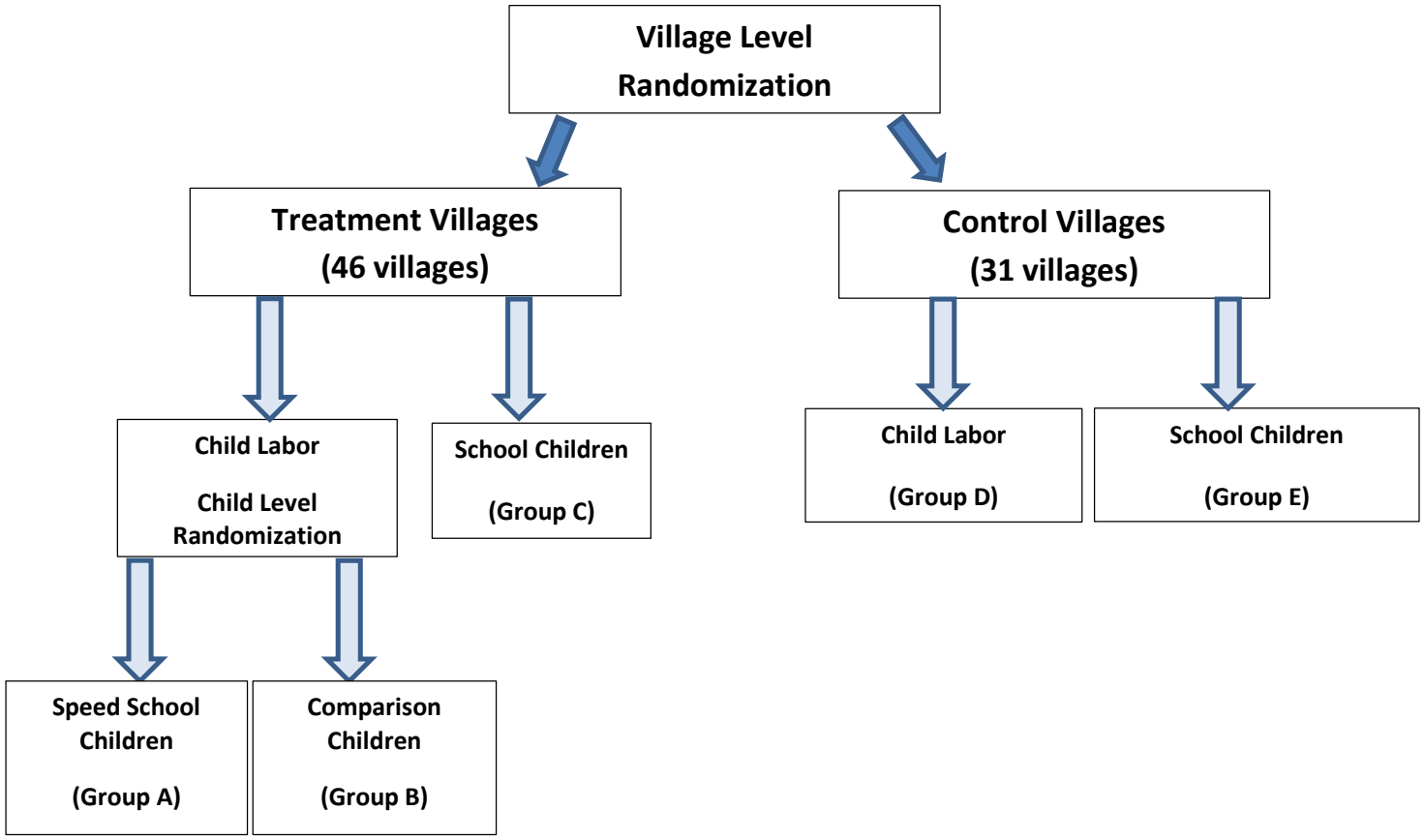
A quick example from a remedial education program in Mali

- Remedial education programs such as the Strømme Foundation's 'Speed School' program may be an important policy option in reintegrating children who are out of school and working on the farm.
  - 50% of rural children were not enrolled in previous academic year.

- What is the impact on the child's time in agriculture and educational achievement of the program itself?
  - Are there spillover effects within families or within communities on enrollment?

- What is the catch-up effect of Speed School children relative to formal system children?
  - Does achievement after reintegration depend on child cognitive and non-cognitive ability?
  - What is the rate of dropout and return to child labor after reintegration?

An RCT design for a child labor and education impact evaluation



Conclusions: Methodology

- Impact evaluation of child labor programs must be carefully identified with counterfactual analysis.
  - Endowment effects, omitted variable bias
- Measurement, methodology, and timing of survey instruments matter a lot to disentangling the mechanisms through which we expect programs to reduce child labor.
- Impact evaluations can be designed across different types of programs in either firm or small holder settings.

Thanks for your questions and comments!

APPENDICES

Northern Mali: Within Questionnaire Module Comparison

- "Standard" hours module (participation by activity, then hours conditional on participation)
  - Activities: Farming, herding, working in the family business, time in school, chores, childcare
  - Parents are respondents
- Subjective children's module
  - Child is the respondent
  - Hours are scaled

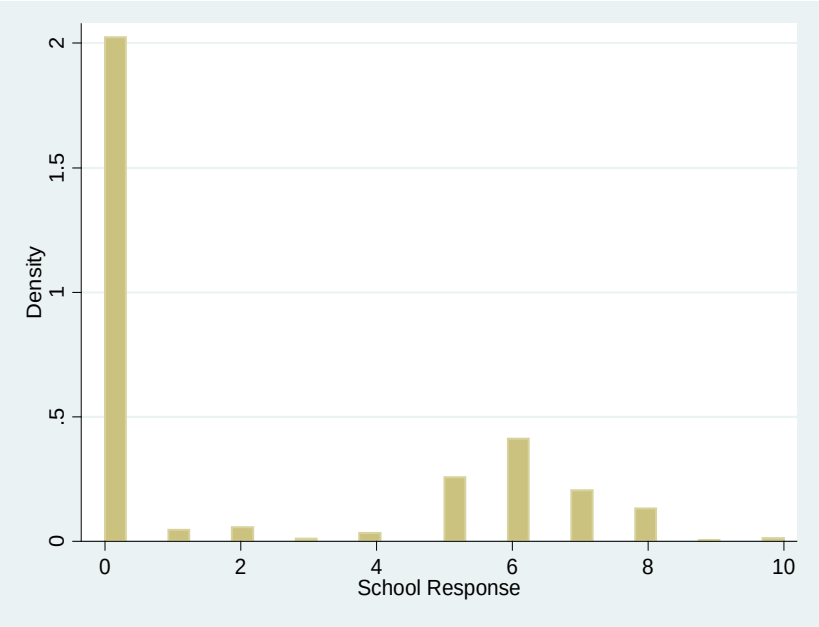
Comparison between hours responses and subjective responses

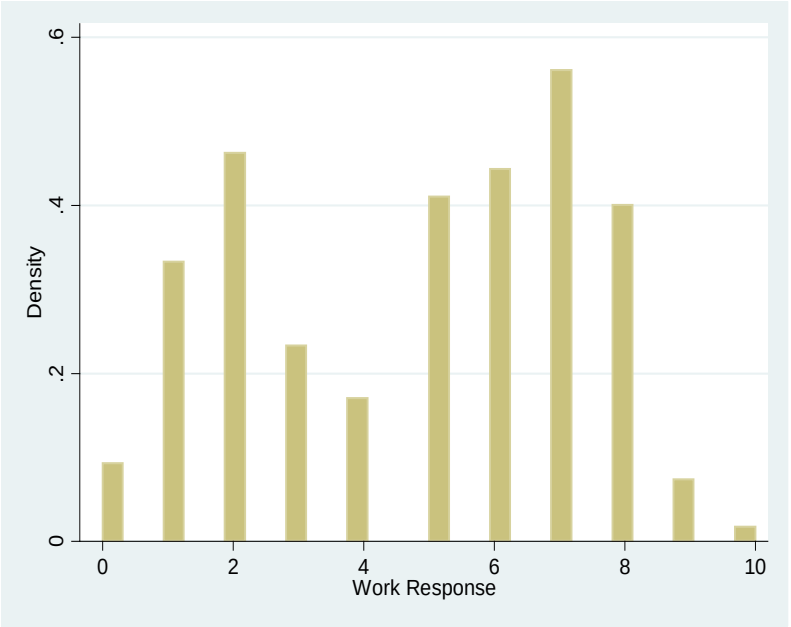
Table 1. Children's Time Allocation:
Unconditional Hours by Activity and Cards Reported from Subjective Responses

Hours	**Mean**	**Standard Deviation**
School	11.30	15.24
Farm	8.74	11.94
Family business	7.62	8.90
Chores	13.99	13.57
Childcare	4.38	7.75
Market work	16.36	15.14
Domestic work	18.37	16.60
Total work	34.73	23.82
Subjective Measures (Count of Cards)		
School	2.41	3.03
Work	4.71	2.53

Note: Probability weighted means. N = 1,445 children.

Subjective responses





Results: Percentage of children's time by module

	Hours Module	Subjective Module
Work	31	47
School	10	24
Leisure	59	29

- Subjective module induces higher reports of time in work and school, then the hours module.
- Significant outlier issues are resolved by using the subjective module.

Conclusions: Mali

- Adult + hours module tends to over-report leisure and under-report time in work and school, relative to the subjective module + child respondent.

- Subjective modules correct many outlier problems in reporting. Point estimates of the determinants of child labor differ depending on the questionnaire design and respondent.

- Additional verification with randomized experiments and within survey question comparisons are necessary to improve child labor statistics for policy and research.