

## DISCUSSION:

# “Regression-Based Decompositions of Rank-Dependent Indicators of Socioeconomic Inequality of Health” by G. Erreygers and R. Kessels

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- In particular, authors:
  - ① compare six regression-based decompositions of generalized concentration index;
  - ② illustrate differences using data from Ethiopia 2011 DHS<sup>1</sup>;
  - ③ show that there are many ways of decomposing RaDISH, potentially leading to arbitrary results.

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# Socioeconomic Inequality of Health

	Boys			
	Very good	Good	Fair	Bad
Section 1 (poorest)	2.8%	14.6%	31.0%	51.6%
Section 2 (middle)	7.4%	20.1%	53.7%	18.8%
Section 3 (highest)	27.4%	33.8%	27.4%	11.4%
Girls				
Section 1 (poorest)	2.1%	14.6%	31.0%	52.3%
Section 2 (middle)	7.5%	21.2%	50.4%	20.9%
Section 3 (highest)	27.2%	38.0%	23.1%	11.7%

Figure : Poverty and Health in York (1901)<sup>2</sup>

To what extent are inequalities in health systematically related to socioeconomic status?

⇒ Use indices for socioeconomic inequality of health

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<sup>2</sup>Taken from Erreygers (2006) who takes it from Rowntree (1901).

# Rank-Dependent Indices of Socioeconomic Inequality of Health ('RaDISH')

- RaDISH are weighted sums of health levels with the weights determined by socioeconomic ranks;
- Generalized health concentration index:  $GC = \frac{2}{n} \sum_{i=1}^n h_i d_i$  with  $h_i$  the health variable and  $d_i$  related to socioeconomic rank<sup>3</sup>;
- Regression based decompositions allow for understanding determinants underlying socioeconomic inequality of health  
⇒ Which factors explain (i) health, and, (ii) socioeconomic rank;
- Authors investigate underlying factors of socioeconomic inequality of stunting in Ethiopia and find that different decompositions lead to different results.

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<sup>3</sup>'Fractional rank-deviation'



# Four Remarks

- Interesting field of research, interesting paper (several);
- Application taken from Wagstaff et al. (2003) who do not use model selection criteria. Possible to include that for RaDISH decomposition analyses?
- Part of application results might be plagued by endogeneity (explaining 'income-based rank' with 'residence type' and 'safe drinking water');
- How about making an application to China? Income is rising hand in hand with inequalities. Could one add some intertemporal dimension to a Chinese RaDISH analysis?<sup>4</sup>

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<sup>4</sup>Data exist (China Health and Nutrition Survey) and crave advanced technology in decomposition.

# Authors' Important Finding

- One needs to carefully choose/develop appropriate decomposition (TBD);
- Outcome of analyses can be driven by author's choice of decomposition, robustness requires transparency and possibly multiple decomposition results;
- More research is needed, find appropriate decomposition via axiomatic approach.



- Erreygers, G. (2006): 'Beyond the Health Concentration Index: An Atkinson Alternative for the Measurement of the Socioeconomic Inequality of Health'; *Mimeo Antwerp University*.
- Rowntree, B. S. (1901): 'Poverty: A Study in Town Life'; *Macmillian and CO*.
- Wagstaff, A., Van Doorslaer, E. and Watanabe, N. (2003): 'On decomposing the causes of health sector inequalities with an application to malnutrition inequalities in Vietnam'; *Journal of Econometrics*, 112(1), 207-223.