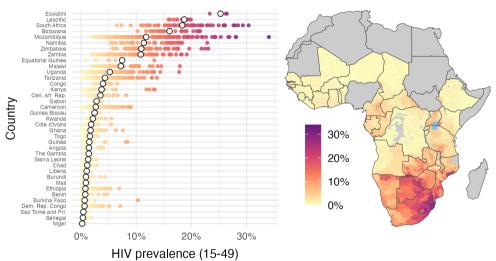
Bayesian spatio-temporal methods for small-area estimation of HIV indicators

Adam Howes

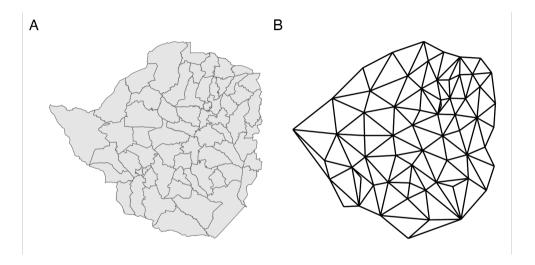
Imperial College London

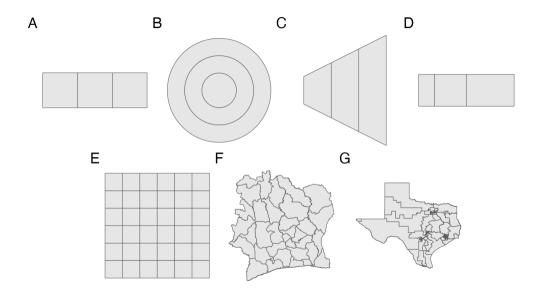
December 2023

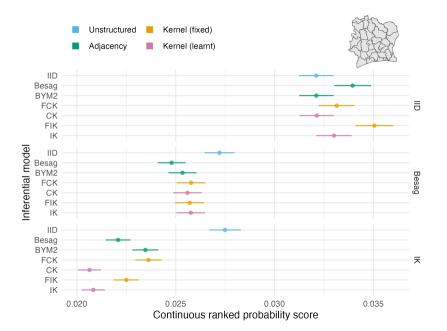


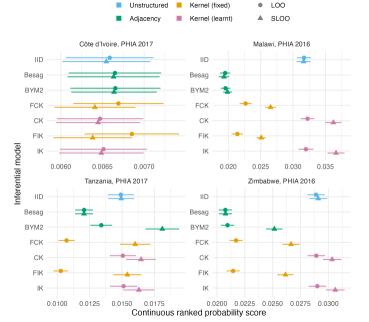
Source: UNAIDS Naomi model estimates, 2023

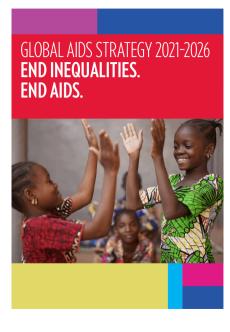
Proportional to number of neighbours Average of neighbours $u_i \mid \mathbf{u}_{-i} \mid \sim \mathcal{N} \left(\frac{1}{n_{\delta i}} \sum_{j:j \sim i}^{\downarrow} u_j, \frac{1}{n_{\delta i} \tau_u} \right)$ ith full conditional

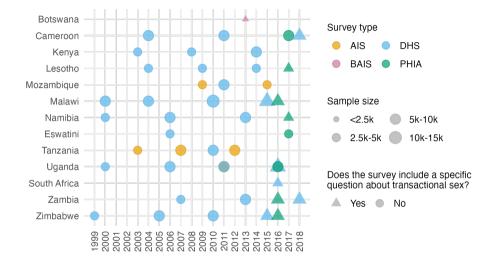


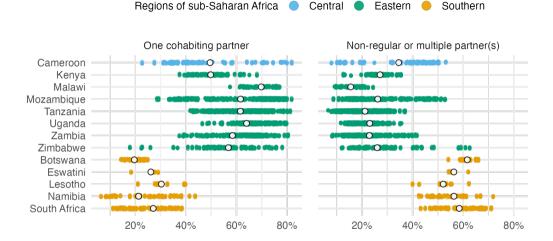




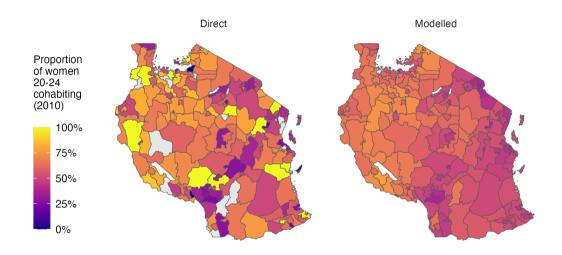


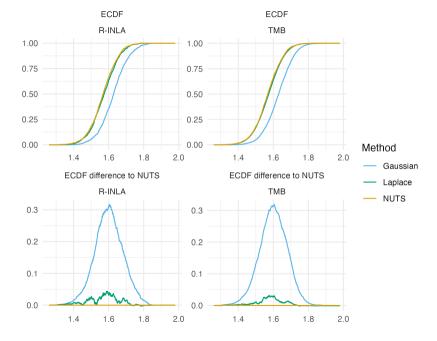


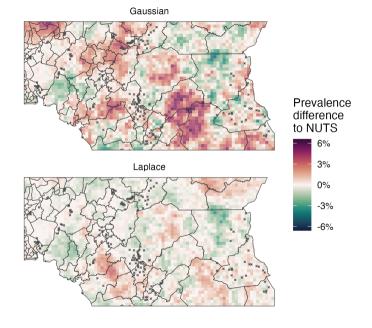


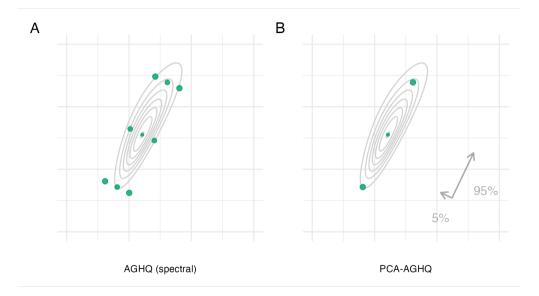


Not sexually active (not shown) + one cohabiting partner + non-regular or multiple partner(s) + FSW (not shown) = 100%









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Collaborator	Affiliation
Jeff Eaton	Harvard, Imperial
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Machine Learning and Global Health Network	Worldwide
StatML CDT	Imperial, Oxford

References I