A high-resolution gridded dataset to assess electrification in sub-Saharan Africa

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Table 1: Population density thresholds used for urban areas definition in combination with MODIS land cover data.

Countries	$Inhab. \cdot km^{-2}$ threshold
Angola, Botswana, Gabon	> 175
Namibia, Zambia, Mauritania, Zimbabwe, Mozambique, Somalia, South Africa, Cape Verde, Swaziland	> 650
Lesotho, Comoros, Madagascar, Central African Republic, Mali, Tanzania	> 800
Gambia, Guinea Bissau, Liberia, Burkina Faso, Ivory Coast, Sierra Leone, Ghana, Guinea, Equatorial Guinea	> 1200
Ethiopia, Uganda, Burundi, Rwanda, Benin, Sudan, Eritrea	> 1500
Kenya, Malawi, DR Congo, Togo, Nigeria, Chad, Senegal, Niger, Congo	> 2500

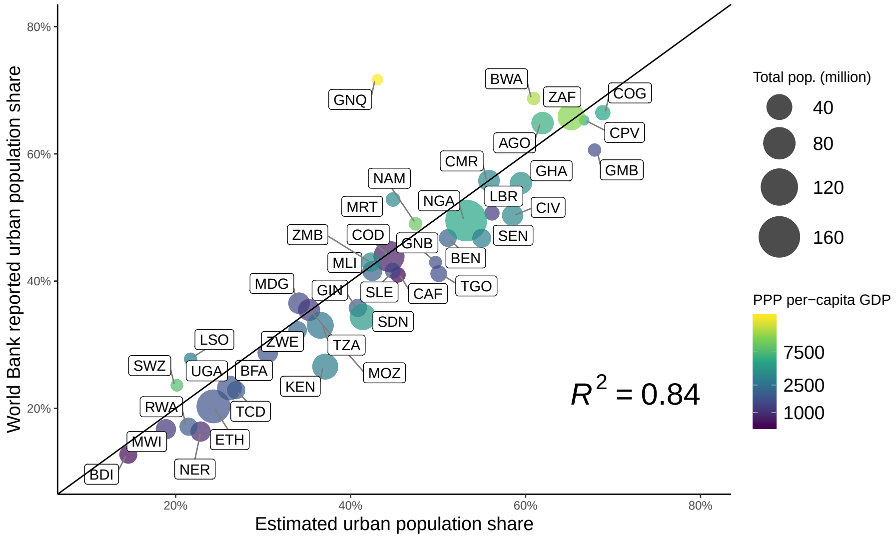


Figure 1: Scatterplot representing the pixel-level estimated national urban population shares against values reported by the World Bank. The point size represents the national population, and colours describe the PPP per-capita GDP of each country. Points are coloured coded on PPP per-capita GDP and scaled by population.

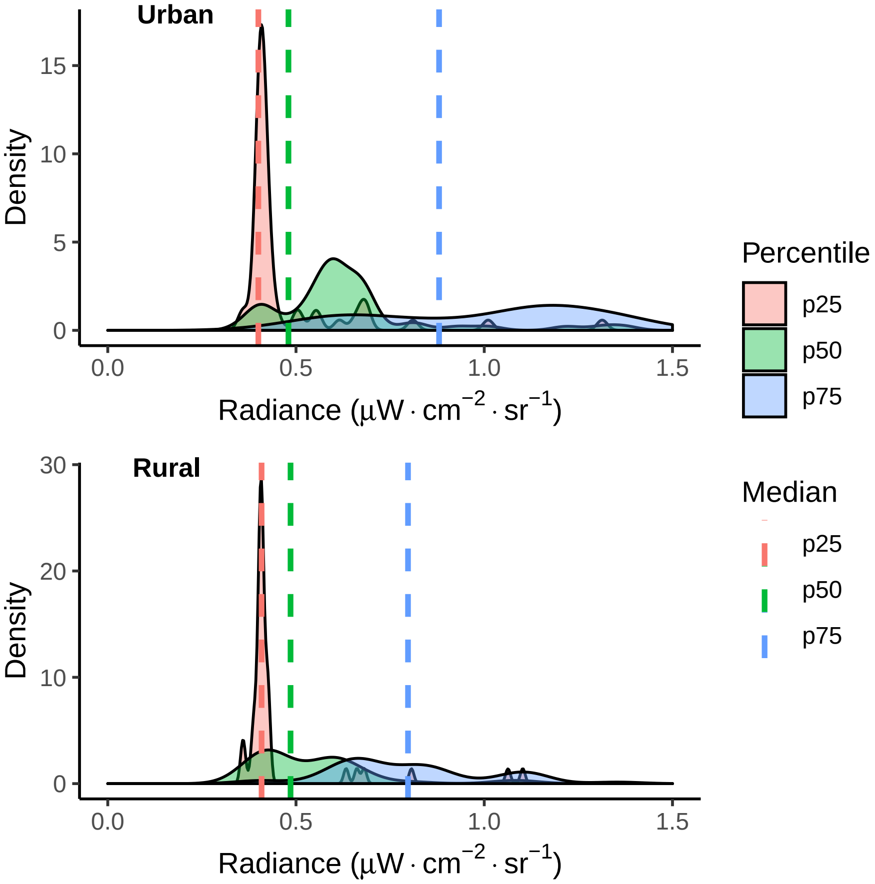
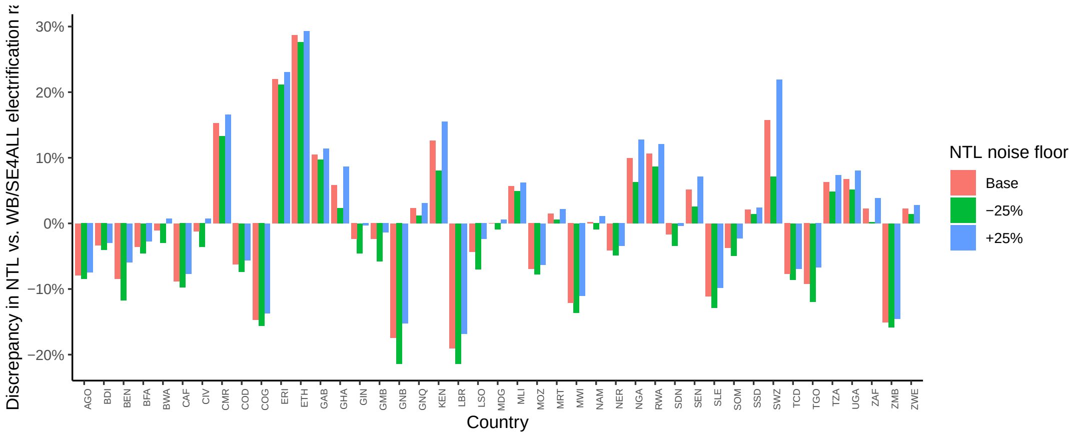
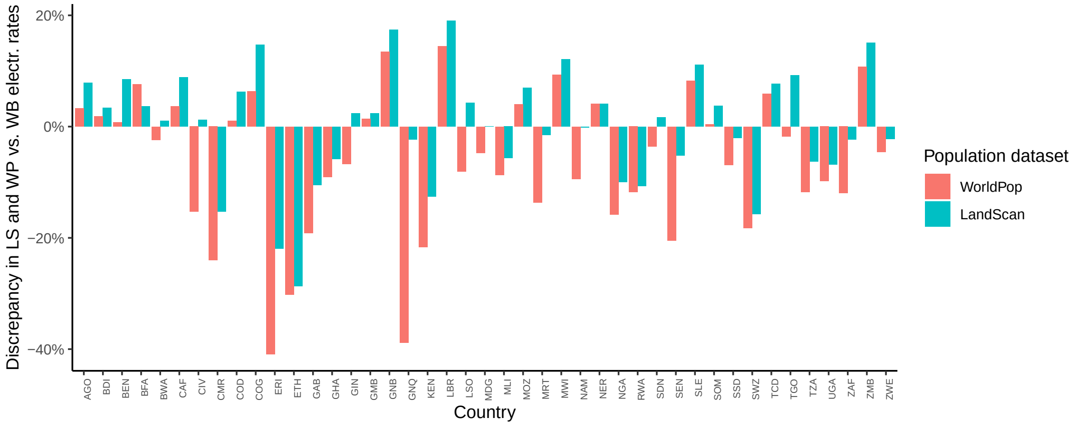


Figure 2: Distribution of non-zero radiance ($\mu W \cdot cm^{-2} \cdot sr^{-1}$) quartile values and distribution median values for all SSA countries in urban and rural areas. Wider distributions determine greater estimation uncertainty.

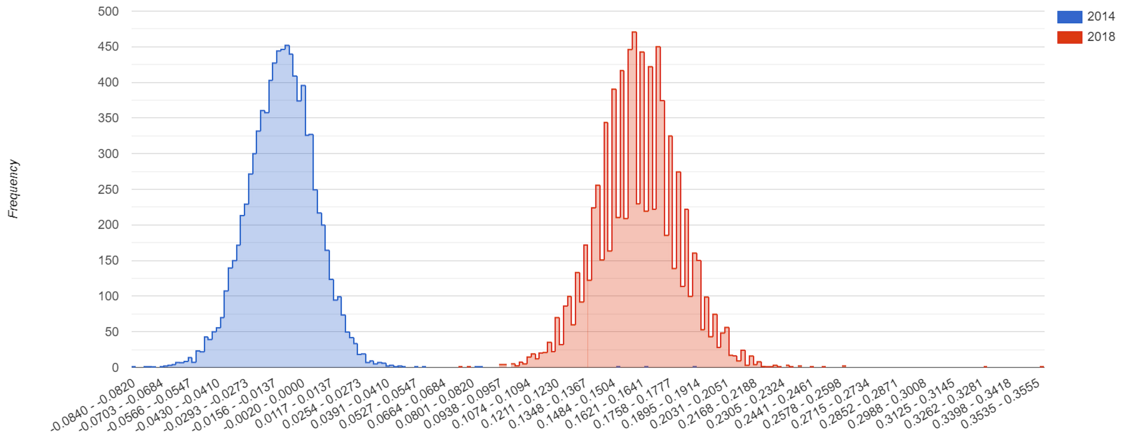


(a) Noise floor parameter

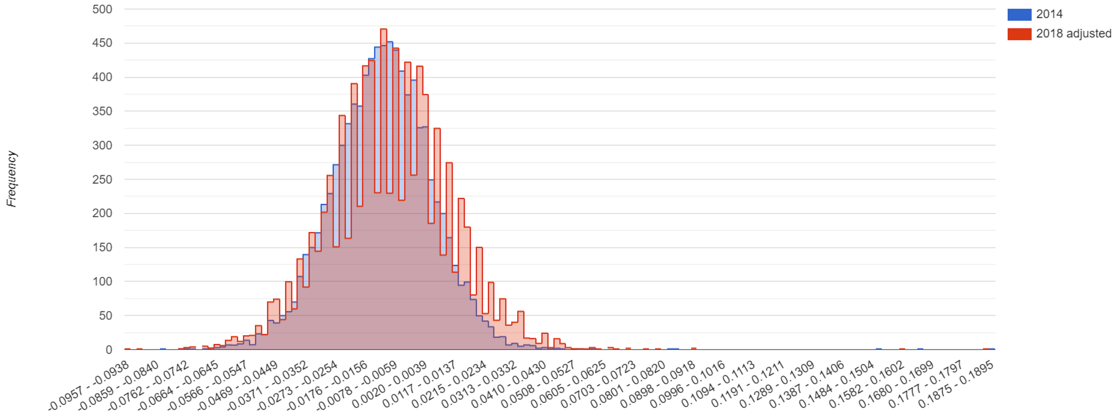


(b) Population dataset

Figure 3: Sensitivity analysis for (a) country-level electrification levels (b) population datasets for country-level electrification levels estimation.



(a) Raw



(b) Adjusted

Figure 4: Distribution of radiance noise values over Lake Victoria in 2018 and 2014 showing (a) the increased noisiness observed in the VIIRS-DNB data and (b) the distributions once the adjustment is accounted for.