



Reproducible Research Repository

Who did Covid-19 hurt the most in Sub-Saharan Africa?

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This review verifies the reproducibility of the exhibits included in the paper *"Who did Covid-19 hurt the most in Sub-Saharan Africa?"*.

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Main findings

- The code was successfully executed on a new computer after:
 1. Installing the packages `heatplot`, `colrspace`, `palettes`, `gtools`
 2. Changing the file paths in the main do file.
 3. Commenting-out lines 14-16 of do-file *"09_Graphs_of_evolution_of_impact.do"*, which replaced global paths defined in the main do-file with absolute file path locations
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively on two computers yielded identical results.
- The code takes approximately 12 hours to run.
- We conducted our reproducibility analysis based on the paper file *"Distributional impact of Covid on SSA 0312.docx"* shared by the team via email on March 12, 2024.
- Every exhibit has been reproduced accurately.
- **Reproducibility summary:**
 - **Data:** All data is confidential and has not been included in the reproducibility package. For more details, please refer to the README file.
 - **Code:** All code files, from cleaning to analysis, are included in the reproducibility package.
 - **Outputs:** All outputs are generated by code included in the reproducibility package.
 - **Reproducibility verification:** Reviewers used data provided directly by the authors to conduct the reproducibility verification and this is not included in the reproducibility package.

List of exhibits and reproducibility status

Results in the Main Section of the Paper

- **Table 1** Reproduced. This exhibit was compared against the tab command results in line 132 of *09_Graphs_of_evolution_of_impact.do*
- **Figure 1** Reproduced. This exhibit was compared against *HH_charac_mean_med_HH.png*
- **Figure 2a** Reproduced. This exhibit was compared against *Inco_changeToD.png*
- **Figure 2b** Reproduced. This exhibit was compared against *Labo_stop.png*
- **Figure 2c** Reproduced. This exhibit was compared against *Inco_ToD4.png*
- **Figure 2d** Reproduced. This exhibit was compared against *Labo_notusual4.png*
- **Figure 3a** Reproduced. This exhibit was compared against *Labo_farm4.png*
- **Figure 3b** Reproduced. This exhibit was compared against *Labo_nonfarm4.png*
- **Figure 4a** Reproduced. This exhibit was compared against *fs_day.png*
- **Figure 4b** Reproduced. This exhibit was compared against *FS_day4.png*
- **Figure 5a** Reproduced. This exhibit was compared against *Educ_any.png*
- **Figure 5b** Reproduced. This exhibit was compared against *Educ_comp.png*
- **Figure 5c** Reproduced. This exhibit was compared against *Educ_tvprog.png*
- **Figure 5d** Reproduced. This exhibit was compared against *Educ_any4.png*
- **Figure 6a** Reproduced. This exhibit was compared against *Safe_gover.png*
- **Figure 6b** Reproduced. This exhibit was compared against *Quintile Graphs/Copi_sold.png*
- **Figure 6c** Reproduced. This exhibit was compared against *Safe_gov4.png*
- **Figure 6d** Reproduced. This exhibit was compared against *Evolution of impact/Copi_sold4.png*

Results in the Appendix

- **Table 1** Does not apply: the exhibit does not show analysis results
- **Table 2** Reproduced. This exhibit was compared against the cell AL1 of each country tab in the file *HFPS_Results_HH_WAVE1.xlsx*. There are minor differences of ± 0.01 for Mali, Malawi, Nigeria, Senegal, and Sierra Leone that we attribute to rounding differences between computers and do not break reproducibility
- **Table 3 - BFA** Reproduced. This exhibit was compared against *Kdensity_BFA_HH_WAVE1.png*
- **Table 3 - ETH** Reproduced. This exhibit was compared against *Kdensity_ETH_HH_WAVE1.png*

- **Table 3 - GAB** Reproduced. This exhibit was compared against *Kdensity_GAB_HH_WAVE1.png*
- **Table 3 - GMB** Reproduced. This exhibit was compared against *Kdensity_GMB_HH_WAVE1.png*
- **Table 3 - GHA** Reproduced. This exhibit was compared against *Kdensity_GHA_HH_WAVE1.png*
- **Table 3 - MLI** Reproduced. This exhibit was compared against *Kdensity_MLI_HH_WAVE1.png*
- **Table 3 - MOZ** Reproduced. This exhibit was compared against *Kdensity_MOZ_HH_WAVE2.png*
- **Table 3 - MWI** Reproduced. This exhibit was compared against *Kdensity_MWI_HH_WAVE3.png*
- **Table 3 - NER** Reproduced. This exhibit was compared against *Kdensity_NER_HH_WAVE1.png*
- **Table 3 - NGA** Reproduced. This exhibit was compared against *Kdensity_NGA_HH_WAVE6.png*
- **Table 3 - SEN** Reproduced. This exhibit was compared against *Kdensity_SEN_HH_WAVE1.png*
- **Table 3 - SLE** Reproduced. This exhibit was compared against *Kdensity_SLE_HH_WAVE1.png*
- **Table 3 - ZWE** Reproduced. This exhibit was compared against *Kdensity_ZWE_HH_WAVE1.png*
- **Table 3 - UGA** Reproduced. This exhibit was compared against *Kdensity_UGA_HH_WAVE3.png*
- **Figure 1** Reproduced. This exhibit was compared against *HH_charac_HH.png*
- **Figure 2** Reproduced. This exhibit was compared against *HH_charac_Ind.png*
- **Figure 3a** Reproduced. This exhibit was compared against *Inco_FaLD_prew.png*
- **Figure 3b** Reproduced. This exhibit was compared against *Inco_WaLD_prew.png*

Reproduction Environment

- Paper exhibits were reproduced in two computers with the following specifications:
 - Computer 1:
 - * OS: Windows 11 Enterprise
 - * Processor: Intel(R) Core(TM) i5-1145G7 CPU @ 2.60GHz
 - * Memory available: 15.7 GB
 - * Software version: Stata 18.0 MP
 - Computer 2:
 - * OS: Windows 10 Enterprise, version 21H2
 - * Processor: Intel(R) Xeon(R) Gold 6226R CPU @ 2.9GHz
 - * Memory available: 128 GB
 - * Software version: Stata 18.0 MP