



## *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\_toprog.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  $\pm 0.01$  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