



Evaluating alternative approaches to small area estimation of poverty with survey and census data

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This review verifies the reproducibility of the exhibits included in the paper "*Evaluating alternative approaches to small area estimation of poverty with survey and census data*".

Contents in this review:

1. Main findings
2. List of exhibits and reproducibility status
3. Reproduction Environment

Main findings

- **Every exhibit of the paper has been reproduced accurately.**
- The code was successfully executed on a new computer after:
 1. Updating the working directory of the do-file "master.do", and running it.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 6 minutes to run.
- The data construction code takes over a month to run.
- We conducted our reproducibility analysis based on the paper shared by the authors via teams on April 21st, 2026.
- **Verification Process and Data Handling:**
 - The reproducibility package relies on 1 types of data: open.
 - Open data is not included in the reproducibility package due to file size constraints.
 - Reviewers used intermediate data provided directly by the authors to conduct the reproducibility verification, and that is included in the public reproducibility package.
 - *data_hash_report.csv* lists the SHA256 hashes of all files in the Data folder to support data integrity checks.
- **Reproducibility Summary:**

- **Data:** All data sources are publicly available but only intermediate data is included in the reproducibility package.
- **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.
- **Dependencies environment:** The reviewers created a new environment using the latest versions of dependencies available at the moment of the review.

List of exhibits and reproducibility status

Results in the Main Section of the Paper

- **Figure 1** **Reproduced** Verified against image "mae_box_plot.png".
- **Figure 2** **Reproduced** Verified against image "figure2.png".
- **Figure 3** **Reproduced** Verified against "Figures3and4" sheet in "tables.xlsx".
- **Figure 4** **Reproduced** Verified against "Figures3and4" sheet in "tables.xlsx".
- **Figure 5a** **Reproduced** Verified against "Figures5and6" sheet with data in cells B3-B11 in "tables.xlsx".
- **Figure 5b** **Reproduced** Verified against "Figures5and6" sheet with data in cells B14-B22 in "tables.xlsx".
- **Figure 6a** **Reproduced** Verified against "Figures5and6" sheet with data in cells B27-B35 in "tables.xlsx".
- **Figure 6b** **Reproduced** Verified against "Figures5and6" sheet with data in cells B38-B46 in "tables.xlsx".
- **Figure 7** **Reproduced** Verified against image "figure_7.png".
- **Figure 8** **Reproduced** Verified against image "ess_rc.png".
- **Table 1** Does not show analysis results.
- **Table 2** Does not show analysis results.
- **Table 3** **Reproduced** Verified against "Table3" sheet in "tables.xlsx".
- **Table 4** **Reproduced** Verified against "Table4" sheet in "tables.xlsx".
- **Table 5** **Reproduced** Verified against "Table5" sheet in "tables.xlsx".
- **Table 6** **Reproduced** Verified against "Table6" sheet in "tables.xlsx".
- **Table 7** **Reproduced** Verified against "Table7" sheet in "tables.xlsx".
- **Table 8** **Reproduced** Verified against "Table8" sheet in "tables.xlsx".
- **Table 9** **Reproduced** Verified against "Table9" sheet in "tables.xlsx".
- **Table 10** **Reproduced** Verified against "Table10" sheet in "tables.xlsx".
- **Table 11** **Reproduced** Verified against "Table11" sheet in "tables.xlsx".

- **Table 12** Reproduced Verified against "Table12" sheet in "tables.xlsx".

Results in the Annex

- **Table A1** Does not show analysis results. Source: World Development Indicators, INEGI, and IBGE.
- **Table A2** Reproduced Verified against "TableA2" sheet in "tables.xlsx".
- **Table A3** Reproduced Verified against "TableA3" sheet in "tables.xlsx".
- **Table A4** Reproduced Verified against "TableA4" sheet in "tables.xlsx".
- **Table A5** Reproduced Verified against "TableA5" sheet in "tables.xlsx".
- **Table A6** Reproduced Verified against "TableA6" sheet in "tables.xlsx".
- **Table A7** Reproduced Verified against "TableA7" sheet in "tables.xlsx".
- **Table A8** Reproduced Verified against "TableA8" sheet in "tables.xlsx".

Reproduction Environment

Paper exhibits were reproduced on a computer with the following specifications:

- 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