



Unreliable Electricity in Developing Countries: The Role of Weak Institutions

First Submission: RR_WLD_2025_517

Ceren Huryol

reproducibility@worldbank.org

December 22, 2025

This review verifies the reproducibility of the exhibits included in the paper “*Unreliable Electricity in Developing Countries: The Role of Weak Institutions*”.

Contents in this review:

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

Main findings

- **Every exhibit in the main section of the paper and 10 randomly selected exhibits in the appendix were reproduced accurately**
- The code was successfully executed on a new computer after:
 1. Changing the paths at the beginning of each do file.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 3 minutes to run.
- We conducted our reproducibility analysis based on the paper shared by the authors by email on December 9th.
- **Verification Process and Data Handling:**
 - The reproducibility package relies on 2 types of data: open and limited-access data (available upon purchase).
 - Open data is included in the public reproducibility package.
 - Reviewers used limited-access data provided directly by the authors to conduct the reproducibility verification, and this is not 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. Users who acquire the forthcoming/accessible/limited-access/restricted data can use this file to verify that the data has not been altered.
- **Reproducibility Summary:**

- **Data:** One data source is limited-access and not 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.
- **Figure 2** Reproduced.
- **Figure 3** Reproduced.
- **Figure 4** Reproduced.
- **Table 1** Reproduced.
- **Table 2** Reproduced.
- **Table 3** Reproduced.
- **Table 4** Reproduced.
- **Table 5** Reproduced.
- **Table 6** Reproduced.
- **Table 7** Reproduced.
- **Table 8** Reproduced.
- **Table 9** Reproduced.
- **Table 10** Reproduced.
- **Table 11** Reproduced.
- **Table 12** Reproduced.
- **Table 13** Reproduced.
- **Table 14** Reproduced.
- **Table 15** Reproduced.
- **Table 16** Reproduced.
- **Table 17** Reproduced.
- **Table 18** Reproduced.

- **Table 19** Reproduced.

Results in the Annex

For the Appendix, we did not review every exhibit. Instead, we randomly selected 10 exhibits from the remaining datasets to assess the appendix. Our review was based on those 10 exhibits. Since they were chosen randomly, we are operating under the assumption that if all randomly selected exhibits are reproducible, then the rest should be as well. The seed used to generate the random selection was 625454, the Stata version used was 18.5, and the exhibits selected were: 2, 3, 4, 6, 8, 10, 11, 12, 13, 14.

- **Table A2** Reproduced.
- **Table A3** Reproduced.
- **Table A4** Reproduced.
- **Table A6** Reproduced.
- **Table A8** Reproduced.
- **Table A10** Reproduced.
- **Table A11** Reproduced.
- **Table A12** Reproduced.
- **Table A13** Reproduced.
- **Table A14** Reproduced.

Reproduction Environment

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

- OS: Windows 11 Enterprise
- Processor: Intel(R) Xeon(R) Gold 5218 CPU @2.30GHz
- Memory available: 6 GB
- Software version: Stata 18.5 MP