



Reproducible Research Repository

Global Socio-economic Resilience to Natural Disasters

Second Submission: RR_WLD_2025_376

Kanika Shokeen , Mahin Tariq

reproducibility@worldbank.org

4th August, 2025

This review verifies the reproducibility of the exhibits included in the paper “*Global Socio-economic Resilience to Natural Disasters*”.

Contents in this review:

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

Main findings

- **Every exhibit has been reproduced accurately.**
- The code was successfully executed on a new computer after:
 1. Replicating the programming environment using the file environment.yml provided by the authors.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 1 hour to run.
- We conducted our reproducibility analysis based on the paper published here
- **Verification Process and Data Handling:**
 - The reproducibility package relies on open, accessible (public but not included in the reproducibility package) and restricted data (available only from the authors).
 - Open data is included in the public reproducibility package.
 - Reviewers used 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 accessible/restricted data can use this file to verify that the data has not been altered.

*List of exhibits and reproducibility status***Results in the Main Section of the Paper**

- **Figure 1a** Reproduced.
- **Figure 1b** Reproduced.
- **Figure 1c** Reproduced.
- **Figure 1d** Reproduced.
- **Figure 1e** Reproduced.
- **Figure 1f** Reproduced.
- **Figure 1g** Reproduced.
- **Figure 1h** Reproduced.
- **Figure 1i** Reproduced.
- **Figure 2a** Reproduced.
- **Figure 2b** Reproduced.
- **Figure 2c** Reproduced.
- **Figure 2d** Reproduced.
- **Figure 2e** Reproduced.
- **Figure 2f** Reproduced.
- **Figure 3a** Reproduced.
- **Figure 3b** Reproduced.
- **Figure 4a** Reproduced.
- **Figure 3b** Reproduced.
- **Figure 5a** Reproduced. Some variation is observed in this exhibit when using raw versus processed data. It reproduces accurately when run with the processed data.
- **Figure 5b** Reproduced. Some variation is observed in this exhibit when using raw versus processed data. It reproduces accurately when run with the processed data.
- **Figure 5c** Reproduced. Some variation is observed in this exhibit when using raw versus processed data. It reproduces accurately when run with the processed data.

- **Figure 5d Reproduced.** Some variation is observed in this exhibit when using raw versus processed data. It reproduces accurately when run with the processed data.

Supplementary

For the Appendix, we did not review every exhibit. Instead, we randomly selected 10 exhibits 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 777220, the Stata version used was 18.5, and the exhibits selected were: Supplementary Figure 3, 6, 7 and 10, and Supplementary Table 1, 3, 5, 6, 7 and 8.

- **Supplementary Figure 3 Reproduced.**
- **Supplementary Figure 6 Reproduced.**
- **Supplementary Figure 7 Reproduced.**
- **Supplementary Figure 10 Reproduced.**
- **Supplementary Table 1 Does not Apply.** Does not show analysis results.
- **Supplementary Table 3 Does not Apply.** Does not show analysis results.
- **Supplementary Table 5 Reproduced.** This exhibit was compared to 'supp_table5.txt'.
- **Supplementary Table 6 Reproduced** We compared these values with regression table results in the command line.
- **Supplementary Table 7 Reproduced** We compared these values with regression table results in the command line.
- **Supplementary Table 8 Does not Apply.** The exhibit is not an analytical output.

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: Python 3.12