



Drivers and Trends for the Equality of Opportunity for Sexual and Gender Minorities: A Panel Approach

First Submission: RR_WLD_2025_503

Camila Ayala

reproducibility@worldbank.org

August 24, 2026

This review verifies the reproducibility of the exhibits included in the paper “*Drivers and Trends for the Equality of Opportunity for Sexual and Gender Minorities: A Panel Approach*”.

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 in the appendix were reproduced accurately.**
- The code was successfully executed on a new computer after:
 1. Opening the R project "EQ0S0GI Panel Reproducibility Package.Rproj"
 2. Restoring the environment by running `renv::restore()` and following the prompts.
 3. Updating the working directory in line 27 of the do-file "0_master_file.do".
 4. Updating the path to the "Rscript.exe" in line 29 of the do-file "0_master_file.do".
 5. Running the do-file "0_master_file.do".
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 10 minutes to run.
- We conducted our reproducibility analysis based on the paper shared by the authors in the reproducibility package.
- **Verification Process and Data Handling:**
 - The reproducibility package relies on two types of data: open, and accessible (public but not included in the reproducibility package).
 - Open data is included in the public reproducibility package.
 - Reviewers used accessible 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 publicly accessible data can use this file to verify that the data has not been altered.
- **Reproducibility Summary:**
 - **Data:** All data sources are publicly available but not all are 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 are 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

- **Table 1** Does not show analysis results.
- **Table 2** Does not show analysis results.
- **Table 3** Reproduced. Verified against Table3.xlsx.
- **Table 4** Reproduced. Verified against Table4.xlsx.
- **Table 5** Reproduced. Verified against Table5.xlsx.
- **Table 6** Reproduced. Verified against Table6.xlsx.
- **Table 7** Reproduced. Verified against Table7.xlsx.
- **Figure 1 - Panel A** Reproduced. Verified against Figure1_PanelA.png.
- **Figure 1 - Panel B** Reproduced. Verified against Figure1_PanelB.png.
- **Figure 2** Reproduced. Verified against Figure2.png. There are some differences due to pixelation, but the figure is reproducible.

Results in the Annex

- **Table A1** Does not show analysis results.
- **Table A2** Reproduced. Verified against TableA2.xlsx.
- **Table A2.1** Reproduced. Verified against sheet Cluster 1 in Tables_A2-1_to_A2-3.xlsx.
- **Table A2.2** Reproduced. Verified against sheet Cluster 2 in Tables_A2-1_to_A2-3.xlsx.
- **Table A2.3** Reproduced. Verified against sheet Cluster 3 in Tables_A2-1_to_A2-3.xlsx.
- **Table A3** Reproduced. Verified against TableA3.xlsx.
- **Table A4** Reproduced. Verified against TableA4.xlsx.
- **Table A5** Reproduced. Verified against TableA4.xlsx.

Reproduction Environment

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

- OS: Windows 11 Enterprise
- Processor: Intel(R) Xeon(R) Gold 6226R CPU @ 2.90GHz
- Memory available: 16.0 GB
- Software version: Stata 19.5 MP, R 4.5.1