



The Economic Cost of Exclusion Based on Sexual Orientation, Gender Identity and Expression, and Sex Characteristics in the Labor Market in Brazil

Fifth Submission: FR_BRA_2026_612

Maria Reyes Retana, Eric Sabiti

reproducibility@worldbank.org

May 26, 2026

This review verifies the reproducibility of the exhibits included in the paper “*The Economic Cost of Exclusion Based on Sexual Orientation, Gender Identity and Expression, and Sex Characteristics in the Labor Market in Brazil*”.

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 path in the main do file and running the file.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 1 minute to run.
- We conducted our reproducibility analysis based on the paper shared by the authors on May 26th.
- **Verification Process and Data Handling:**
 - The reproducibility package relies on 2 types of data: accessible and Forthcoming data.
 - Reviewers used the forthcoming data provided directly by the authors to conduct the reproducibility verification, and this is not included in the public reproducibility package. The data is forthcoming on the World Bank Microdata Library.
 - *data_hash_report.csv* lists the SHA256 hashes of all files in the Data folder to support data integrity checks. Users who obtain the forthcoming/accessible data can use this file to verify that it has not been altered.
- **Reproducibility Summary:**

- **Data:** Some data is not yet publicly available but is expected to be made available through the World Bank Microdata Library in the future.
- **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 (GAY MEN)** Reproduced.
- **Figure 1 (BISEXUAL MEN)** Reproduced.
- **Figure 1 (LESBIANS)** Reproduced.
- **Figure 1 (BISEXUAL WOMEN)** Reproduced.
- **Figure 1 (TRANS)** Reproduced.
- **Figure 1 (NON-BINARY)** Reproduced.
- **Figure 1 (INTERSEX)** Reproduced.
- **Figure 2 (Gay)** Reproduced.
- **Figure 2 (Lesbians)** Reproduced.
- **Figure 2 (Bisexual Men)** Reproduced.
- **Figure 2 (Bisexual Women)** Reproduced.
- **Figure 2 (Trans)** Reproduced.
- **Figure 2 (Non-binary)** Reproduced.
- **Figure 2 (Intersex)** Reproduced.
- **Figure 3 (Race/ color)** Reproduced.
- **Figure 3 (Education)** Reproduced.
- **Figure 3 (Region)** Reproduced.
- **Figure 3 (Age group)** 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.

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 954354, the Stata version used was 19, and the exhibits selected were: Table A2, Table A4, Table A5, Table A6, Table A7, Table A8, Table A9, Table A12, Table A13, Table A16.

- **Table A2** Reproduced.
- **Table A4** Reproduced.
- **Table A5** Reproduced.
- **Table A6** Reproduced.
- **Table A7** Reproduced.
- **Table A8** Reproduced.
- **Table A9** Reproduced.
- **Table A12** Reproduced.
- **Table A13** Reproduced.
- **Table A16** Reproduced.

Reproduction Environment

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

- OS: MacOS
- Chip: Apple M4 Pro
- Memory available: 24 GB
- Software version: Stata 19.0 MP