



Female labor force participation and gender norms: a machine learning analysis of Egypt

First Submission: RR_EGY_2026_626

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April 14, 2026

This review verifies the reproducibility of the exhibits included in the paper "*Female labor force participation and gender norms: a machine learning analysis of Egypt*".

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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 in line 7 of the do-file "main.do", and running it.
 2. Restoring the environment in environment.txt
 3. Updating the working directories and running "Descriptives_table.py" and "decision tree.py"
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 5 minutes to run.
- We conducted our reproducibility analysis based on the paper shared by the authors by email on April 14, 2026. .
- **Verification Process and Data Handling:**
 - The reproducibility package relies on 1 types of data: accessible (public but not included in the reproducibility package),.
 - Reviewers downloaded the accessible data 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 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:** Some outputs are not generated by code (created manually in Excel, ArcGIS, etc) but instructions for producing these outputs are included in the README file.
- **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.** The graph was prepared in the Excel using the data copied from the console after running the do-file Graphs.do.
- **Figure 2 Reproduced.** The graph was prepared in the Excel using the data copied from the console after running the do-file Graphs.do.
- **Figure 3 Reproduced.** The graph was prepared in the Excel using the data copied from the console after running the do-file Graphs.do.
- **Figure 4 Reproduced.**
- **Figure 5 Reproduced.**

Results in the Annex

- **Table 1 Reproduced.**

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: 32.0 GB
- Software version: StataNow 19.5 MP; Python 3.11.7