



A Data-Driven Approach for Early Detection of Food Insecurity in Yemen's Humanitarian Crisis

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This review verifies the reproducibility of the exhibits included in the paper "*A Data-Driven Approach for Early Detection of Food Insecurity in Yemen's Humanitarian Crisis*".

Contents in this review:

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Main findings

- The code was successfully executed on a new computer after:
 1. Replicating the programming environment using the file requirements.txt 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 3 hours to run.
- We conducted our reproducibility analysis based on the paper shared in the reproducibility package ("*20240526 JMR academic paper FINAL (proofread).docx*") sent by the team via OneDrive on June 18, 2024.
- Every exhibit has been reproduced accurately.
- **Reproducibility Summary:**
 - **Data:** One data source is restricted, All data sources are publicly available but not all are included in the public reproducibility package. One dataset data is restricted and has not been included in the reproducibility package. Seven datasets are public but not included in the reproducibility package. All other datasets are included in the reproducibility package. For more details, please refer to the README file.
 - **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.
 - **Reproducibility verification:** Reviewers used data provided directly by the authors to conduct the reproducibility verification, and some of this is not included in the public reproducibility package.
 - **Dependencies environment:** The reviewers reproduced an existing environment for dependencies using dependency files or an environment metadata file provided by the authors.

List of exhibits and reproducibility status

Results in the Main Section of the Paper

- **Table 1** Reproduced
- **Figure 1** Reproduced
- **Table 2** Does not analysis results
- **Figure 2** Reproduced
- **Table 3** Reproduced
- **Figure 3** Reproduced
- **Figure 4** Reproduced
- **Table 4** Reproduced
- **Figure 5** Reproduced
- **Figure 6** Reproduced
- **Table 5** Reproduced
- **Table 6** Reproduced
- **Figure 7** Reproduced
- **Figure 8** Reproduced

Results in the Annex

- **Table A1a** Reproduced
- **Table A1b** Reproduced
- **Table A2** Reproduced
- **Table A3** Reproduced
- **Table A4** Reproduced
- **Table A5** Reproduced
- **Table A6** Reproduced
- **Table A7** Does not show analyis results
- **Table A8** Reproduced
- **Table A9** Reproduced
- **Table A10** Reproduced
- **Table A11** Reproduced

Reproduction Environment

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

- OS: Windows 11 Enterprise
- Processor: 11th Gen Intel(R) Core(TM) i5-1145G7 @ 2.60GHz 1.50 GHz
- Memory available: 15.7 GB
- Software version:
 - Python 3.10
 - Power BI 2.103.881.0 64-bit (March 2022)