



When Digital Nudges Nag: Evidence on Program Take-up from a WhatsApp Intervention

First Submission: RR_COL_2026_624

Eric Sabiti

reproducibility@worldbank.org

June 3, 2026

This review verifies the reproducibility of the exhibits included in the paper “*When Digital Nudges Nag: Evidence on Program Take-up from a WhatsApp Intervention*”.

Contents in this review:

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

Main findings

- **Every exhibit of the paper has been reproduced accurately.**
- The code was successfully executed on a new computer after:
 1. Opening the script "main.do", changing the directory on line 17 and running it. This installed the required packages, generated datasets "DataETPV" and "DataComparison" and generated all the exhibits.
- 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
- **Verification Process and Data Handling:**
 - The reproducibility package relies on open and restricted data (available only from the data owners).
 - Open data is included in the public reproducibility package.
 - Reviewers used restricted data provided directly by the authors to conduct the reproducibility verification, and this is not included in the public reproducibility package. A portion of the restricted 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 acquire the forthcoming/accessible/limited-access/restricted data can use this file to verify that the data has not been altered.

- **Reproducibility Summary:**

- **Data:** Some data is restricted and has not been included in the reproducibility package. For more details, please refer to the README
- **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 (Panel A)** Does not apply
- **Figure 1 (Panel B)** **Results reproduced** this figure was manually prepared using ArcMap
- **Table 1** **Reproduced, minor differences.** There are minor differences that do not jeopardize reproducibility.

Code						Paper					
Table Preview						Table 1. Sample Characterization					
Variable	Mean	SD	Min	Max	N		Average	SD	Min	Max	N
Age	33.44	11.29	18.00	75.00	1,375	Age	33.44	11.29	18.00	75.00	1,375
Male [=1]	0.32	0.47	0.00	1.00	1,375	Male [=1]	0.33	0.47	0.00	1.00	1,375
Ed. Level: Primary or Less [=1]	0.19	0.39	0.00	1.00	1,375	Ed. Level: Primary or Less [=1]	0.19	0.39	0.00	1.00	1,375
Ed. Level: General or diversified school [=1]	0.59	0.49	0.00	1.00	1,375	Ed. Level: General or diversified school [=1]	0.59	0.49	0.00	1.00	1,375
Number of household members	4.68	1.74	0.00	14.00	1,375	Number of household members	4.68	1.74	0.00	14.00	1,375
Personal Income	249472.41	217352.68	0.00	1.70e+06	1,375	Personal Income (COP)	249,472	217,353	0.00	1,700,000	1,375
Activity spent the most time: Working [=1]	0.42	0.49	0.00	1.00	1,375	Activity spent the most time: Working [=1]	0.42	0.49	0.00	1.00	1,375
Internet Access more than 4 hour per day [=1]	0.68	0.47	0.00	1.00	1,375	Internet Access more than 4 hours per day [=1]	0.67	0.47	0.00	1.00	1,375
Trust in Colombian Government (1-5)	4.27	1.02	1.00	5.00	1,375	Trust in Colombian Government (1-5 scale)	4.27	1.02	1.00	5.00	1,375
Personal use Whatsapp [=1]	0.77	0.42	0.00	1.00	1,375	Personal use of WhatsApp [=1]	0.77	0.42	0.00	1.00	1,375
Facebook or Instagram account [=1]	0.53	0.50	0.00	1.00	1,375	Facebook or Instagram account [=1]	0.53	0.50	0.00	1.00	1,375
Twitter account [=1]	0.12	0.32	0.00	1.00	1,375	Twitter account [=1]	0.12	0.32	0.00	1.00	1,375
E-mail account [=1]	0.16	0.36	0.00	1.00	1,375	E-mail account [=1]	0.17	0.38	0.00	1.00	1,375
Social desirability index	2.28	1.40	0.00	4.00	1,375	Social desirability index (1-4 scale)	2.28	1.40	0.00	4.00	1,375

- **Table 2** **Reproduced**
- **Table 3 (Panel A)** **Reproduced**
- **Table 3 (Panel B)** **Reproduced**
- **Table 3 (Panel C)** **Reproduced**
- **Table 3 (Panel D)** **Reproduced**
- **Table 3 (Panel E)** **Reproduced**

- Table 4 (Panel A) Reproduced
- Table 4 (Panel b) Reproduced
- Table 4 (Panel C) Reproduced
- Figure A.1 Does not apply
- Figure A.2 Does not apply
- Figure A.3. Results reproduced this figure was manually prepared using ArcMap
- Figure A.4 Does not apply
- Figure A.5 Does not apply
- Table A.1 Reproduced
- Table A.2 Reproduced
- Table A.3 (Panel A) Reproduced
- Table A.3 (Panel B) Reproduced
- Figure A.6 Reproduced
- Figure C.1 (Panel A) Reproduced
- Figure C.1 (Panel B) Reproduced
- Table C.1 Reproduced
- Table C.2 Reproduced
- Table C.3 Reproduced
- Table D.1 (a) Reproduced
- Table D.1 (b) Reproduced
- Table D.2 Reproduced
- Table E.1 (a-b) Reproduced
- Table E.2 Reproduced

Reproduction Environment

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

- OS: Windows 11 Enterprise
- Processor: Intel(R) Xeon(R) Gold 5218 CPU @ 2.30GHz (2.30 GHz) (2 processors)
- Memory available: 16 GB
- Software version: Stata 19.5 MP