

THE WORLD BANK'S REPRODUCIBLE RESEARCH INITIATIVE

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World Bank

Research at the World Bank

Research is central to how the World Bank generates and shares development knowledge:

- **Policy Research Working Papers (PRWPs)** - around 350 published each year, freely available to the public
- **Flagship Reports** - high-profile publications such as the World Development Report, widely cited by governments and researchers worldwide
- **Other products** - regional studies, country diagnostics, and technical notes that inform operations on the ground

Together, these products make the World Bank one of the largest producers of development research in the world.

Why Reproducibility Matters



Credibility

Errors are caught before publication, not after.



Transparency

Findings are traceable and verifiable, not taken on trust.



Better science

Open data and code let others build on findings, accelerating research

World Bank Reproducible Research Initiative

- Piloted in September 2023
Reproducibility encouraged for all formal publications
- Scaled up in September 2025
Reproducibility required for all Policy Research Working Papers (that include empirical work)
- Internal reproducibility team verifies packages and provides tools and training for staff
- Verified packages publish to the World Bank's Reproducible Research Repository (<https://reproducibility.worldbank.org>)

Types of products



**Policy Research
Working Papers**

All papers with
empirical work



**Flagships and
Reports**

- World Development
Report
- Business Ready



Journal Articles

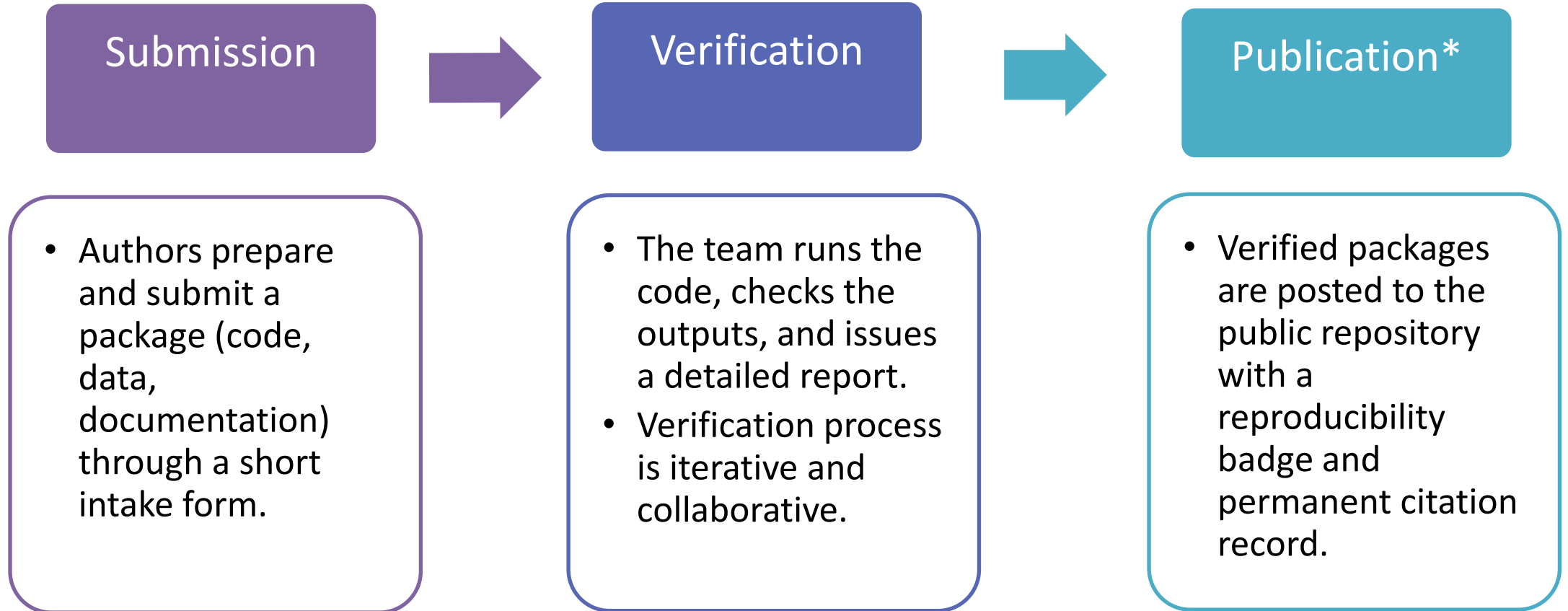
Papers published in
journals (e.g. AEA)



Data products

- World Governance
Indicators
- Women, Business,
and Law

What's the process?

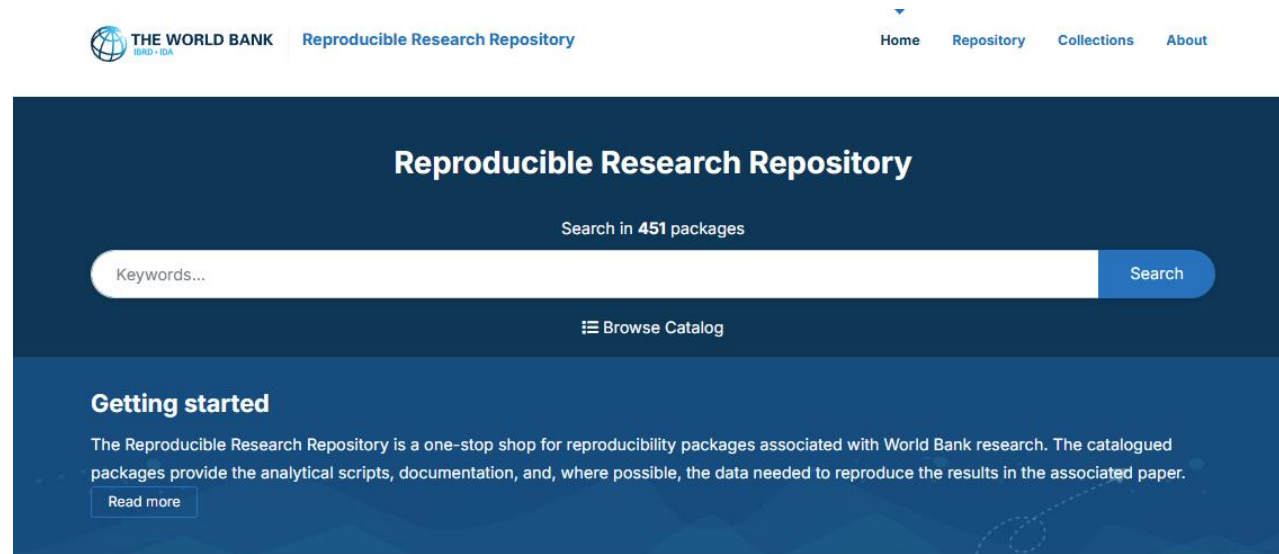


The Standard Every Package Must Meet

Computational reproducibility

A third party can reproduce the exact findings in the paper using the data, code, and documentation provided by the author

Reproducible Research Repository



The screenshot shows the top navigation bar with the World Bank logo and the text 'Reproducible Research Repository'. To the right are links for 'Home', 'Repository', 'Collections', and 'About'. Below this is a dark blue header with the title 'Reproducible Research Repository' and a search bar containing the text 'Search in 451 packages'. The search bar has a 'Keywords...' input field and a 'Search' button. Below the search bar is a 'Browse Catalog' link. The main content area is also dark blue and features a 'Getting started' section with a paragraph of text and a 'Read more' button.

Featured



Policy Research Working Papers

This collection is a set of reproducibility packages associated with papers published in the World Bank's Policy Research Working Paper (PRWP) series.



Journal Articles

This collection is a set of reproducibility packages associated with papers published by World Bank staff or consultants in academic journals.



World Bank Reports & Flagships

This collection is a set of reproducibility packages associated with World Bank reports and flagship publications.

<https://reproducibility.worldbank.org>



Reproducibility package for An Apple A Day: The Impact Of Healthier School Meals On Children In Jordan

2025

[GET REPRODUCIBILITY PACKAGE](#)

Reference ID RR_JOR_2025_391

DOI <https://doi.org/10.60572/rvyd-hy70>

Author(s) Hannah Uckat, Benedetta Lerva, Florence Kondylis, Roshni Khincha, Simone Lombardini, Jonas Heirman

Collections [World Bank Policy Research Working Papers](#)

Metadata [JSON](#)

PROJECT DESCRIPTION

DOWNLOADS

Download related resources

Other Materials

[Readme for the reproducibility package for An Apple A Day: The Impact Of Healthier School Meals On Children In Jordan](#)

[Download \[PDF, 97.58 KB\]](#)

[Reproducibility verification for the reproducibility package for An Apple A Day: The Impact Of Healthier School Meals On Children In Jordan](#)

[Download \[PDF, 140.52 KB\]](#)

[Reproducibility package for An Apple A Day: The Impact Of Healthier School Meals On Children In Jordan](#)

[Download \[ZIP, 1.2 MB\]](#)

Data

DATASETS

[Jordan School Meal Programme Survey Data](#)

[Monitoring data on the distribution of the Jordan School Meal Programme](#)

[Administrative data on school enrollment and attendance for the years 2021–2022 and 2022–2023 in Jordan](#)

[Height and weight student data for Jordan](#)

[Student data for 2021–2022 for Jordan](#)

[Student data for 2022–2023 for Jordan](#)

DATA STATEMENT

Some data is restricted and has not been included in the reproducibility package. For more details, please refer to the README file.

CITATION

Uckat, H., Lerva, B., Kondylis, F., Khincha, R., Lombardini, S., & Heirman, J. (2025). *Reproducibility package for An Apple A Day: The Impact Of Healthier School Meals On Children In Jordan*. World Bank. <https://doi.org/10.60572/RVYD-HY70>

Export citation: [RIS](#) | [BibTeX](#) | [Plain text](#)

Every entry is a permanent, citable digital object accompanied by detailed, searchable metadata.

POLICY RESEARCH WORKING PAPER

11208

An Apple a Day

The Impact of Healthier School Meals on Children in Jordan

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Florence Kondylis
Benedetta Lerva
Jonas Heirman
Roshni Khincha
Hannah Uckat*

 **WORLD BANK GROUP**
Development Economics
Development Impact Group
September 2025

 **Reproducible Research Repository**
A verified reproducibility package for this paper is
available at <http://reproducibility.worldbank.org>.
click [here](#) for direct access.

OUTPUT

An Apple A Day: The Impact Of Healthier School Meals On Children In Jordan

Type

Working Paper

Title

An Apple A Day: The Impact Of Healthier School Meals On Children In Jordan

Description

Policy Research Working Papers (PRWP) WPS11208

URL

<http://documents.worldbank.org/curated/en/099850109052573815>

DOI

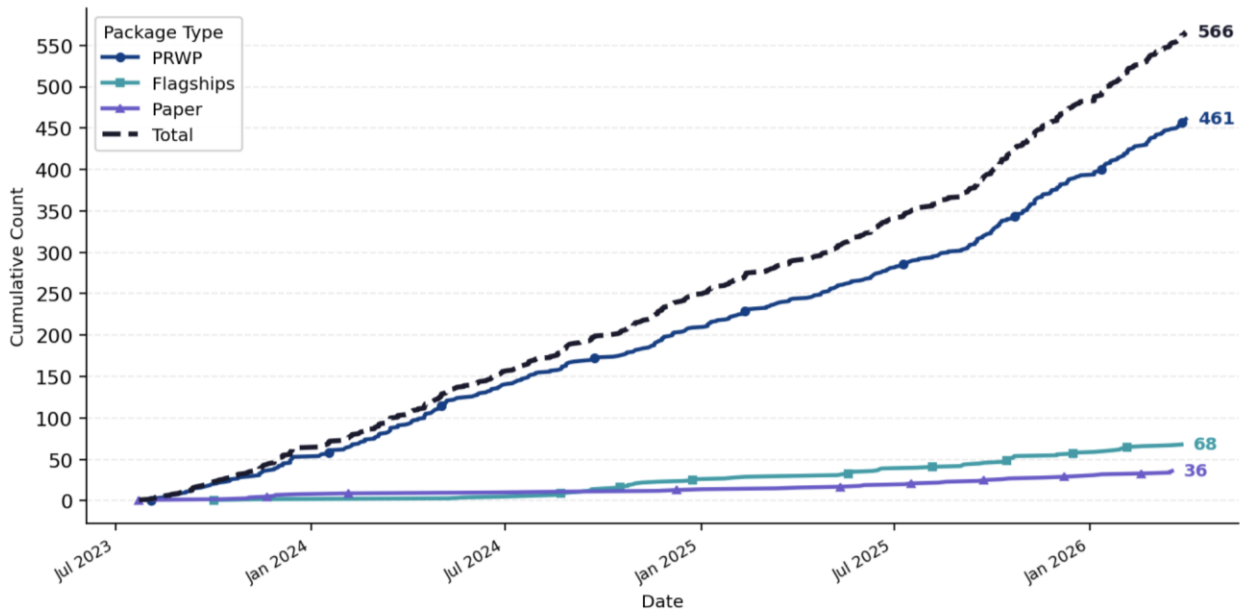
<https://www.doi.org/10.1596/1813-9450-11208>

Every verified paper, its reproducibility package, and its underlying data are interlinked - creating a connected record across World Bank repositories.

Every verified paper includes a reproducibility badge.

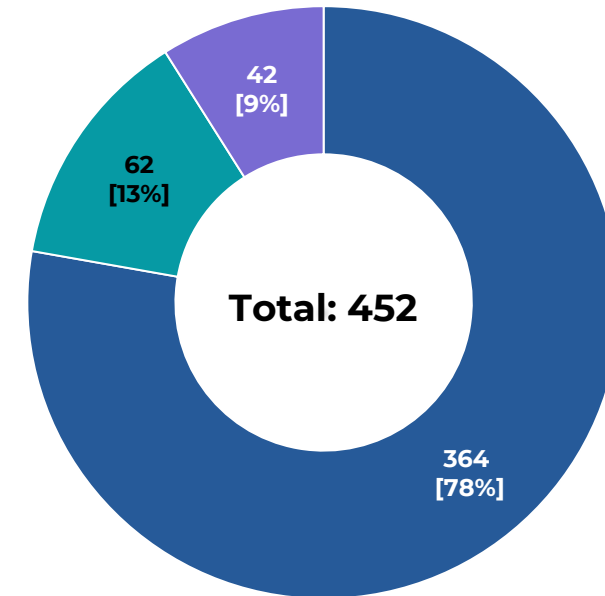
Research Verified and Published

Cumulative Number of Reproducibility Packages
By Package Type (and Total)



Based on Start Date in GitHub project cards. Package type: PRWP = RR_titles, Flagships = FR_titles, Paper = PP_titles.

Packages published on RRR

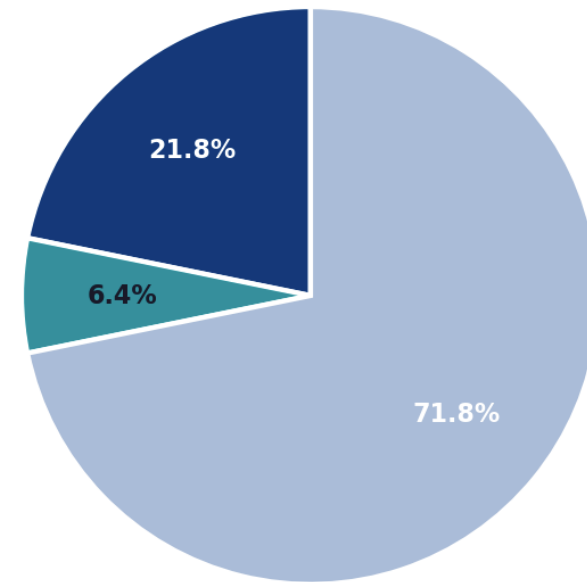


■ PRWPs ■ Flagships & Reports ■ Journal Articles

Issues Flagged During Verification

- 4 out of 5 reproducibility packages require modifications - either to the code, data, or manuscript
- Many require changes to the publication (often version control / copy-paste problems)

Changes Required to Pass Reproducibility Verification



■ None (21.8%) ■ Minor (6.4%) ■ Significant (71.8%)

All package types (PRWP, Flagships, Papers) that are published or under active review (excludes Ghosted, Inactive, Rejected, New). One observation per package.
None = ran & reproducible at first try • **Minor** = ran with modifications & reproducible • **Significant** = did not run, not reproducible, or unstable.

Tools and Trainings

- Hands-on trainings and custom tools build reproducibility capacity across WB research staff
- Open-source tools and protocols, free for any organization to adopt
- Raising the bar for how development research is done - at the World Bank and beyond

Welcome to the World Bank Reproducible Research Repository Resources

This site provides guidelines and resources for authors, reviewers, and users to ensure the reproducibility of research outputs.

[Guidance](#) ▾ | [Checklist](#) | [FAQs](#) | [Resources](#) | [README](#) ▾ | [Protocols](#) ▾ | [Trainings](#)

Guidance for Authors

Detailed instructions for preparing a reproducible publication.

Checklist

A step-by-step guide to ensure all components are included.

FAQs

Frequently asked questions about reproducibility packages.

Resources

Tools, templates, and other assets to support your research.

README Generator

Templates and generator tool to create a high-quality README file.

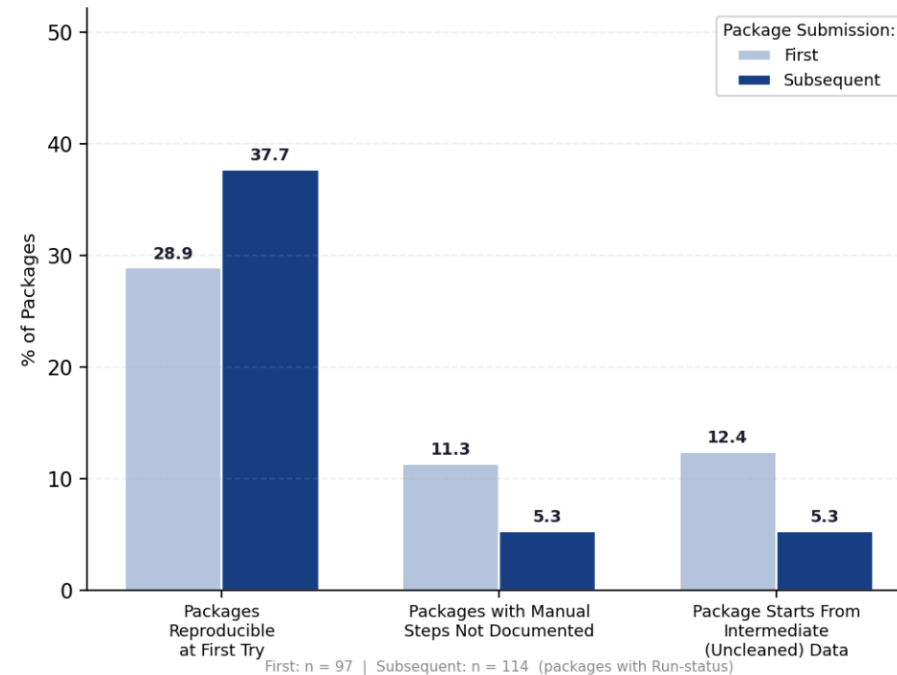
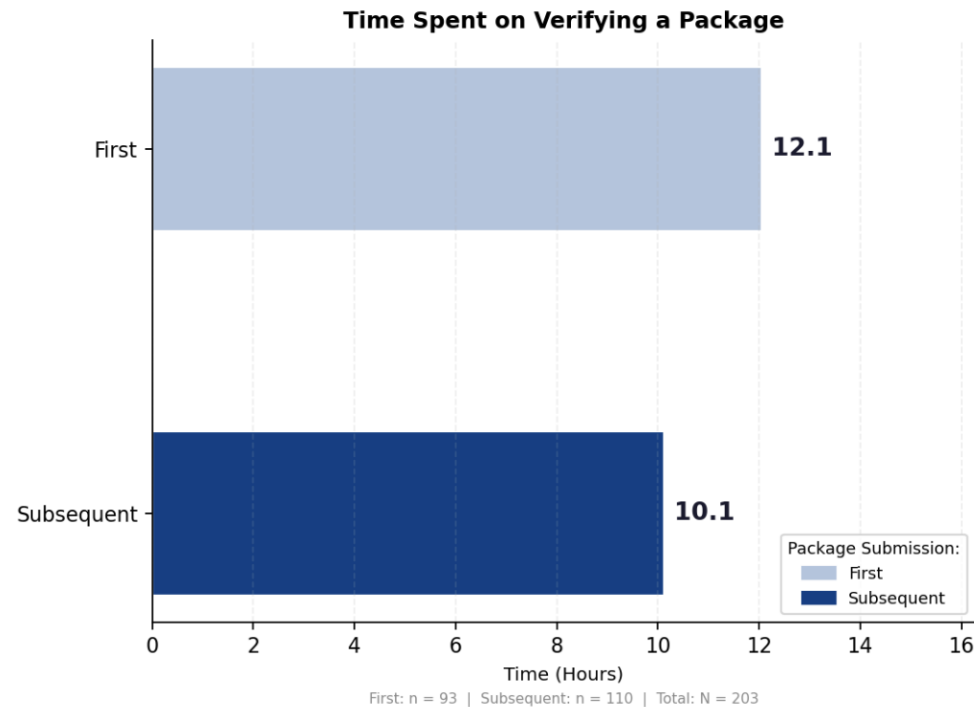
Review Protocols

Evaluation guidelines for assessing the reproducibility of research.

<https://worldbank.github.io/wb-reproducible-research-repository>

Authors Learn by Doing

Going through the reproducibility verification process once increases the quality of future reproducibility packages



Sample: Done or Published-with-missings PRWP packages matched to the RRR catalog (`rrr_metadata.xlsx`). One observation per package. *First* = ALL co-authors are submitting a reproducibility package for the very first time (no earlier package by any co-author). *Subsequent* = at least one co-author has submitted a reproducibility package before this one.

Who Should Intern With Our Team?

- You are curious about international development research
- You want to understand what it takes to make research reproducible at the World Bank - not just in theory, but in practice
- You have sharp attention to detail and don't mind getting into messy packages - our packages are works in progress, and finding and fixing problems is the core of the work
- You care about research integrity and want your work to contribute to making development economics more transparent and credible

THANK YOU!

Questions?

asingh43@worldbank.org or

reproducibility@worldbank.org

Scan for our Resources



<https://bit.ly/wb-rrr-resources>



THE WORLD BANK

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Development Economics

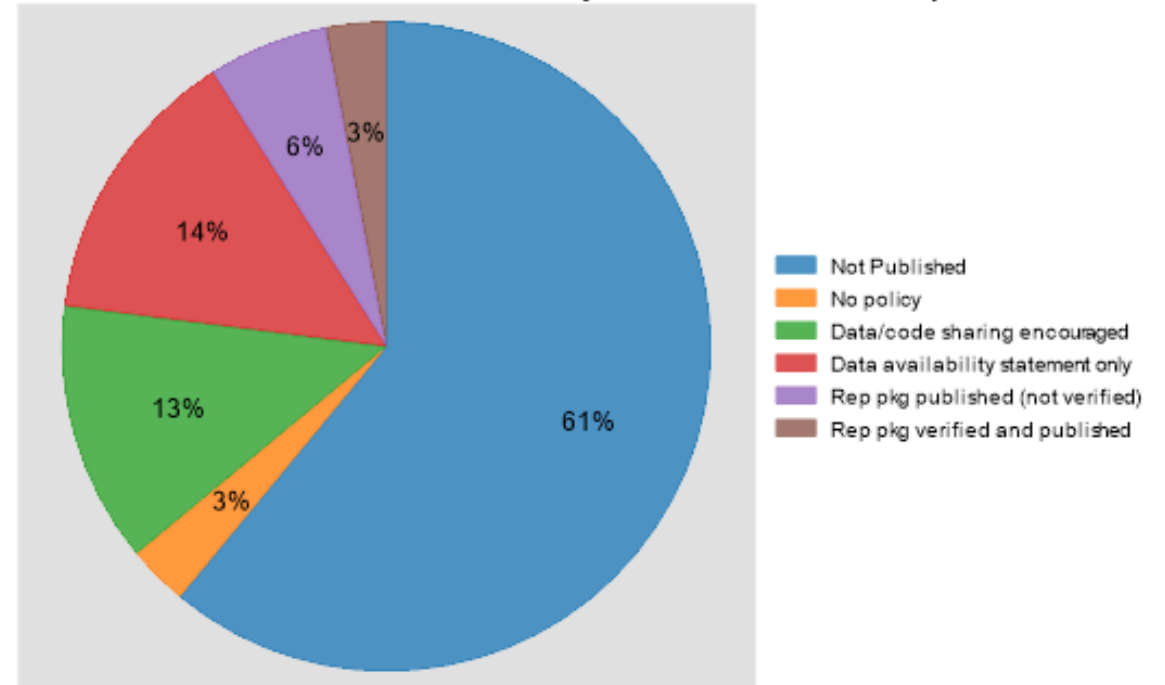


Reproducible Research Repository

Why Not Leave Reproducibility Verification To Journals?

- Most Policy Research Working Papers do not end up in journals that verify reproducibility
- Simple random sample of 100 Working Papers published in FY18
- After 5 years, 61 percent of PRWPs **not** published in a journal
- 9 percent published in journal with reproducibility requirement
- Only 3 percent in journals that verify reproducibility packages

PRWPs with Journal Publication by Current Journal Replication Policy



Uses random sample of 100 PRWPs from FY18