



# Reproducibility Checklist Feedback

Fields marked with \* are mandatory.

## Privacy Information

### Responsible Party

GESIS – Leibniz Institute for the Social Sciences

B6, 4-5, 68159 Mannheim

Phone: +49 621-1246-0

Email: [info@gesis.org](mailto:info@gesis.org)

### Data Protection Officer

HEC Harald Eul Consulting GmbH

Datenschutzbeauftragte GESIS

Auf der Höhe 34

50321 Brühl

E-mail: [Datenschutz-GESIS@he-c.de](mailto:Datenschutz-GESIS@he-c.de)

### Purpose

To investigate and improve reproducibility practices among computational social scientists.

### Data Collected

Demographic data (academic position and years of experience in research) and survey responses.

### Legal Basis

Point (a) of Article 6(1) GDPR

### Data Sharing

Internal use at GESIS; anonymized data for reports and future research.

We cooperate with the service provider EUSurvey who supports us in implementing the project.

A results report in which the results of the project are presented in a non-personal manner will be prepared, permanently archived and published.

### Storage Duration

Personal data that you have specified in your declaration of consent is excluded. This data will be deleted after 30 years at the latest.

The duration of storage depends on the research purpose. Personal survey data is stored for 10 years in accordance with the guideline for ensuring good scientific practice. This retention is important because researchers must be given the opportunity to verify the accuracy of research results. The non-personal survey data are archived indefinitely in the GESIS data archive. Your master and contact data will be deleted by the end of the study.

## **Your Rights**

You have the following rights vis-à-vis the controller:

- Right of access, Article 15 GDPR
- Right to rectification, Article 16 GDPR
- Right to erasure ('right to be forgotten'), Article 17 GDPR
- Right to restriction of processing, Art. 18 GDPR
- Right to data portability, Article 20 GDPR
- Right to object, Article 21 GDPR

You have the right to object, on grounds relating to your particular situation, to processing of personal data concerning you which is carried out for scientific or historical research purposes or statistical purposes pursuant to Article 89(1) GDPR].

Your right of access, right to rectification, right to restriction of processing and right to object may be restricted to the extent that it is likely to render impossible or seriously impair the achievement of the research or statistical purposes and the restriction is necessary for the fulfillment of the research and statistical purposes.

You can exercise these rights by contacting the GESIS data protection officer using the contact details above.

## **Complaints**

You can exercise your rights by contacting the GESIS data protection officer using the contact details above. You also have the right to lodge a complaint with a supervisory authority (Article 77 GDPR). However, GESIS recommends that you always first address a complaint to the GESIS data protection officer.

If you have any questions regarding data protection, please contact the GESIS data protection officer using the contact details above. Further information on data protection can be found on the website <https://www.gesis.org/en/institute/data-protection>.

## **Declaration of Consent**

If you choose to continue and have the time, we will ask you to review the reproducibility checklist we have prepared and provide feedback on the helpfulness of each item in enhancing reproducibility. You will be asked questions related to your academic position, years of experience in research, and specific items on the checklist.

During this study, Feedback on the reproducibility checklist will be processed.

You have the right to withdraw your consent at any time. The withdrawal of consent does not affect the lawfulness of processing based on consent before its withdrawal.

☐ I acknowledge the privacy information.

☐ I consent to participate in the survey.

## Demographics

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Which of these positions best describes your academic position?

- ☐ Graduate Student
- ☐ Postdoctoral Researcher
- ☐ Assistant Professor
- ☐ Full Professor
- ☐ Industry Professor
- ☐ Team Leader/ Principal Investigator
- ☐ Other

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How many years have you worked in research?

- ☐ Less than one year
- ☐ 1-5 years
- ☐ 6-10 years
- ☐ More than 10 years

## Sections and Instructions

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This section of the survey presents a list of proposed items to enhance the reproducibility of methods and results in scientific studies. The survey is divided into three sections:

1. Planning and Data Collection
2. Analysis and Processing
3. Archiving and Sharing

*Please rate each item using a scale from 1 to 9:*

1. Strongly disagree: Exclude this reproducibility item from the checklist ... **5. Neither exclude nor include** this reproducibility item in the checklist ... **9. Strongly agree:** Include this reproducibility item in the checklist

You may choose "**Skip**" if you cannot rate the item. At the conclusion of each section, there is a space for additional comments, suggestions for new items, rephrasing, etc.

# 1. Planning and Data collection

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## Description of Study

**Hypotheses:** Clearly state the hypotheses

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Rationale and Prior Evidence:** Summarize the study rationale and prior evidence.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Study Questions:** Formulate the study questions.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Objectives:** Describe the study objectives.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4

- ☐ 5
  - ☐ 6
  - ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

**Pre-registration:** Register the study, including a detailed experiment design.

- ☐ 1 (Exclude)
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ 5
  - ☐ 6
  - ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

**Data Management Plan:** Document the plan prior to study initiation.

- ☐ 1 (Exclude)
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ 5
  - ☐ 6
  - ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

**Statistical Analysis Plan:** Outline the planned statistical procedures.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

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## Methods Reporting

**Reporting Intent:** Specify if methods are intended to be reported in a study.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Registered Report:** Indicate if the study will be submitted as a registered report.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

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## Study Population

**Definition:** Define demographic characteristics, geographic location, and relevant contextual factors.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Sampling Strategy:** Explain sampling strategy and justify the approach.

- ☐ 1 (Exclude)
- ☐ 2

- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Data Sources and Inclusion/Exclusion Criteria:** Specify data sources and inclusion/exclusion criteria.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Ethical Considerations:** Address ethical considerations regarding privacy and consent.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Relevance to Research Questions:** Discuss relevance to research questions and comparative analysis.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

# Digital Data and Computational Environment

## Materials and Data Sources

**Data Sources:** Specify digital data sources (e.g., social media platforms, recordings, interviews, etc) and provide DOI if available.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Data Description:** Briefly describe the type and nature of collected data.Necessary metadata

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Accessibility:** Where is it planned to be stored?

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

## Experimental Conditions

**Data Collection Procedures:** Detail procedures for data collection (e.g., APIs, web scraping).

- ☐ 1 (Exclude)



- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Data Pre-processing:** Describe data cleaning and transformation methods.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Data Handling Procedures:** Address handling of missing data and outliers.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Computational Environment:** Specify tools, software, and languages used (e.g., Python, R).

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

## Experimental Steps and Variables (Configurations)

**Experimental Steps:** Outline the procedure followed.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Variables:** Describe experimental variables.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Data Collection Bias:** Approaches to mitigate bias in data collection and analysis

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

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Comments:

## 2. Analysis and Processing

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## Metadata

**Metadata:** Provide accessible metadata.

- ☐ 1 (Exclude)
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ 5
  - ☐ 6
  - ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

## Computational Methods and Analysis

**Statistical and Computational Methods:** Clearly describe all statistical and computational methods used, including regression techniques, machine learning algorithms, and any other analytical methods.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

### Algorithm and Model Description:

Provide detailed descriptions of any algorithms or computational techniques implemented, including their theoretical basis and practical application.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Model Validation and Evaluation:** Explain the methods used for validating and evaluating model performance, such as accuracy metrics, ROC curves, cross-validation techniques (e.g., k-fold, leave-one-out), and other relevant metrics.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Computational Tools and Libraries:** Specify all computational tools, libraries, and their versions used in the analysis (e.g., Python, R, TensorFlow).

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Parameter Tuning and Optimization:** Describe any parameter tuning or optimization procedures carried out, including methods like grid search or random search.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Training and Course Availability:** Ensure that any training or courses related to these methods are accessible to users for better understanding and implementation.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐

- 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Configuration and Reproducibility:** Make all configurations, scripts, and setup files available to ensure reproducibility of the computational methods. Provide clear instructions on how to set up the computational environment.

- ☐ 1 (Exclude)
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ 5
  - ☐ 6
  - ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

## Data Handling

**Data Handling Procedures:** Address handling of missing data and outliers.

- ☐ 1 (Exclude)
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ 5
  - ☐ 6
  - ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

## Interpretation and Reporting

**Interpretation of Results:** Explain results in relation to hypotheses.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐

- 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Results Presentation:** Describe how results were presented visually.

- ☐ 1 (Exclude)
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ 5
  - ☐ 6
  - ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

## Reproducibility

**Code Availability:** Ensure code for analysis or model development is openly available.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Documentation, literate programming principals**

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Following existing documentation templates**

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

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## Implementation and Practical Considerations

### Science Usecase(s)

Include use cases from social sciences demonstrating the method's applicability.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

Cite latest social science literature to support the use cases.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

### Repo Structure

Explain the overall structure of the method, including directories and key files.

- ☐ 1 (Exclude)
- ☐ 2

- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

## Environment Setup

Detail steps to set up the environment to run the method locally.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

List required packages and libraries with specific versions.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

## Hardware Requirements

Specify hardware requirements if the method needs more memory/ compute power.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8



- ☐ 9 (Include)
- ☐ Skip

## Sample Input and Output Data

Show sample input data and corresponding output to help users understand the method.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

## How to Use

Provide step-bystep HowTos for different usages.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

Include installation, configuration, and specific instructions for users.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

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Comments:

### 3. Archiving and Sharing

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#### Tracking and Reporting

**Deviation Tracking:** Document deviations from the original plan.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Negative Data:** Describe instances of failed experiments or unsupported hypotheses.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Reporting:** Emphasize transparent reporting of deviations and negative results.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

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#### Results Reporting

**Results Reporting:** Report findings

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Interpretation:** Interpret results with respect to study objectives.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Visualization:** Provide visualizations of data and results.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

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**Study Strength and Limitations**

**Strength and Limitations:** Discuss strengths and limitations of the study.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6

- ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

## Authorship and Contributorship

**Authorship:** Detail contributions of authors and contributors.

- ☐ 1 (Exclude)
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ 5
  - ☐ 6
  - ☐ 7
  - ☐ 8
  - ☐ 9 (Include)
  - ☐ Skip
- 

## Data Sharing

**Processed Data:** Make processed dataset openly available.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Raw Data:** Share raw data unless constrained by privacy or ethics.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐

Skip

**Ethical Considerations:** Address ethical concerns related to data sharing.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

**Access and Licensing:** Specify access and licensing terms for shared data.

- ☐ 1 (Exclude)
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9 (Include)
- ☐ Skip

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Comments:

## Contact

[Contact Form](#)

