Integrated Public Open Science Infrastructure Tools and Services at leibniz-psychology.org

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Agenda

• Presenting the mission of ZPID – Leibniz Institute for Psychology Information

• Current (available) and future tools and services

• Discussion
Leibniz-Psychology.org (ZPID)

- ... is a Public Open Science Institute for Psychology and related disciplines
- ... is in the process of strategic expansion towards a one-stop research support organization (i.e., research infrastructure), providing services for the entire research cycle:

  - Study planning
  - Preregistration
  - Data collection
  - Data analysis
  - Archiving
  - Information search
  - Publication
Leibniz-Psychology.org (ZPID)

Supporting the (scientific) community in Psychology (and beyond) to make research accessible, transparent, reproducible, and replicable.
ZPID Research Topics

- Dealing with contradictory evidence
- Facilitating evidence-based thinking
- Usability research

- Meta-Analysis on topics relevant for our products
- Quality appraisal tools for meta-analysis
- Meta-analytic structural equation modeling

- Identifying hotspot topics using text mining (topic modeling)
- Theory-driven usage of big data
- Big data curation issues

Data analysis

Data collection
Research Unit “Research Literacy”

“Understanding Evidence”

Current studies (selection):
- Fostering nuanced beliefs about science: The role of epistemic volition
- Epistemic emotions in the context of contradictory scientific findings
- Defense mechanisms and confirmation bias when dealing with contradictory health information
Research Unit “Big Data”

“New Evidence Data Sources”

Current and planned studies (selection):

- Unobstrusive (longitudinal) measurement of behavior using smartphones and social media
- Causal inference and causal discovery taking big data sources into account
- Analysis approaches for high-velocity data (data streams)
- Identifying hotspot topics in Psychology using PSNYDEX data (text mining)
Research Unit “Research Synthesis”

“Synthesizing Evidence”

Current studies (selection):
- Meta-analyses on panel conditioning effects and participation rates in psychological studies
- Systematic review about the use of quality appraisal in meta-analyses
- MASEM on the factor structures and measurement invariance of psychometric instruments (e.g., PANAS, PSS)
Open Science Blended Learning Program
How smart do you think you are?

A meta-analysis on the validity of self-estimates of cognitive ability

Philipp Alexander Mound and Nicole Kaiser

Hypotheses

Overall Relationship: Most studies investigating the relationship between self-estimates of cognitive ability and psychometric test scores report significant, positive correlations. We therefore expect to find a significant, positive overall relationship between the two variables.

Moderator Analysis: We hypothesize that self-estimates concerning verbal, numerical, or spatial abilities should be more valid than self-assessments of general cognitive ability, which in turn is usually a compound of different sub-abilities (as implemented in omnibus test batteries). Consequently, use of these "standard" abilities should also result in more valid self-estimates than use of more rarely assessed abilities, such as memory or processing speed, for instance.

Results

Descriptive Statistics
Information search → Study planning → Pre-Registration → Data collection → Data analysis → Archiving → Publication

Registered Reports in Psychology

PsychLab

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In the paper, we recruited a sample of 61 participants as specified by our pre-registered stopping rule. A power analysis was carried out to determine that a sample size of 61 participants was necessary to detect medium effects $f = .25$, as outlined by Cohen (1988), with power of .9.

From the pre-registered protocol, SMART-preregistration by Tom Hardwicke et al. (2018).

SMART-preregistration by Tom Hardwicke et al. (2018)
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