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Prioritizing interventions and reproducibility measures to improve research reproducibility: a Delphi consultation method

Dora Pejdo¹, Ivan Buljan¹, Tamarinde Haven², Ana Marušić¹

¹University of Split, Croatia

²Tilburg University, Netherlands

Background: The Horizon Europe iRISE project aims to enhance research reproducibility by identifying key priorities through expert consensus. A Delphi study was conducted with diverse stakeholders—including policymakers, funders, editors, publishers, and researchers—to assess reproducibility measures and interventions.

Methods: The study engaged 73 experts from 34 countries in Round 1 and 67 experts in Round 2. Using a 10-point Likert scale, reproducibility measures (n=14) and interventions (n=27) reached consensus if at least 70% of panellists rated them 8 or higher. Participants could provide qualitative feedback, which was analysed and presented in Round 2. A final panel will refine and confirm the final priority list.

Results: In Round 1, eight reproducibility measures and six interventions met the priority threshold. The top-ranked reproducibility measures were methodological quality (9.03), reporting quality (9.00), and code and data availability/re-use (8.66). The highest-priority interventions included data management training (8.52), data quality checks/feedback (8.33), and statistical training (8.33). No additional reproducibility measures or interventions from Round 1 reached consensus in Round 2.

Conclusions: This study highlights essential areas for improving research reproducibility and transparency through expert-driven prioritisation. The final panel will establish a definitive priority list, shaping targeted actions to address reproducibility challenges. Findings will support the scientific community in implementing effective policies and practices to enhance research integrity.