What do authors and editors think about peer review? A cross sectional study in 12 journals across research fields

> Peer review: Old Challenges and New Advances Mykolas Romeris University, Vilnius, Lithuania 07.03.2017



Shelly Pranic, Stjepan Marusic, Mario Malicki, Bahar Mehmani, Ana Marusic

ELSEVIER

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Author's question:

How useful was the review report in terms of improving the quality of your manuscript? $\Rightarrow \Rightarrow \Rightarrow \Rightarrow \Rightarrow$

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1 = poor, 2 =, 3 = neutral, 4 = very good, 5 = excellent
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*Review Quality Instrument (RQI), according to van Rooyen et al. J Clin Epidemiol 1999;52(7):625-9. The RQI has 10 items rated on a scale from 1 to 5, giving a score range from 10 to 50.



Purpose

Determine associations among:

- 1) authors' perception of the reviews;
- 2) editors' opinions regarding review timeliness;
- 3) editors' opinion on review's impact on decision;
- 4) review quality, measured by RQI; and
- 5) reviewers' recommendation (accepted, revise, rejected).







(Obstet Gynecol 2008;112:646-51)

Author Perception of Peer Review

Mark Gibson, MD, Catherine Y. Spong, MD, Sara Ellis Simonsen, RN, MSPH, Sheryl Martin, and James R. Scott, MD

Author Perception of Peer Review

Impact of Review Quality and Acceptance on Satisfaction

Ellen J. Weber, MD; Patricia P. Katz, PhD; Joseph F. Waeckerle, MD; Michael L. Callaham, MD

JAMA. 2002;287(21):2790-2793. doi:10.1001/jama.287.21.2790.



Major article



Assessing the quality of the peer review process: Author and editorial board member perspectives

Christina Bunner BA^{a,*}, Elaine L. Larson RN, PhD, FAAN, CIC^b

Modified Review Quality Instrument (RQI) designed by van Rooyen et al. Each item assesses quality using a 5-point Likert scale from 1 (low) to 5 (high).

- 1. Importance
- 2. Originality
- 3. Strengths of the methodology
- 4. Weaknesses of the methodology
- 5. Adequate use of English
- 6. Organization of the manuscript
- 7. Presentation of tables and figures
- 8. Constructiveness of comments
- 9. Reviewer comments supported
- 10. Results interpretation

Independent Inter-rater correlation (Kappa) = 0.65, 95% CI 0.50 – 0.80

Manuscript Characteristics			
	n (%)		
All manuscripts with reviews (n = 1333)			
1	324 (41)		
2	398 (50)		
3 or more	67 (9)		
Subject area of manuscripts			
Agriculture	19 (2)		
Clinical medicine	60 (8)		
Computer science	72 (9)		
Physical sciences	638 (81)		
Physical sciences	638 (81)		

	Agriculture†	Clinical medicine, computer science, and physical science‡	p-value§
Item			
Importance	8 (24)	289 (22)	0.9747
Originality	8 (24)	274 (21)	0.896
Strengths of the methodology	6 (18)	89 (7)	0.0377
Weaknesses of the methodology	25 (74)	579 (45)	0.0015
Adequate use of English	17 (50)	489 (38)	0.1983
Organization of the manuscript	16 (47)	217 (17)	<0.0001
Presentation of tables and figures	24 (71)	442 (34)	<0.0001
Constructiveness of comments	34 (100)	1173 (90)	0.1071
Reviewer comments supported	34 (100)	1194 (92)	0.1601
Results interpretation	9 (26)	542 (42)	0.1081

* Review Quality Instrument, according to van Rooyen et al. J Clin Epidemiol 1999;52(7):625-9. The RQI has 10 items rated on a scale from 1 to 5, giving a score range from 10 to 50.

†N=34

[‡]N=1299: 115 for clinical medicine, 131 for computer science, and 1134 for physical sciences.

§Chi-square analysis

	RQI score (median, 95% CI)
Author ratings	
Satisfaction with the constructiveness of the review	4.3 (4.0 – 5.0)
Editor ratings	
Opinion about the timeliness of the review	5.0 (5.0 - 5.0)
Opinion on the review's impact on a final decision	5.0 (5.0 - 5.0)
Review quality ratings*	
Overall review quality	18 (17.0 - 18.0)

*The RQI has 10 items rated on a scale from 1 to 5, giving a score range from 10 to 50.

Author satisfaction vs. reviewer decision

 We found statistically significant correlations between author satisfaction and review decision (rho=0.432, 95% CI 0.312-0.538, P<0.0001).







Reviewer decision vs. quality of the review

- No association was found between RQI scores and reviewer decisions regardless of number of reviews per manuscript.
- Corroborates with previous studies





Poor agreement between reviewers

 Inter-rater agreement between reviewers was low (κ=0.233 95% CI 0.097-0.369).





A Reliability-Generalization Study of Journal Peer Reviews: A Multilevel Meta-Analysis of Inter-Rater Reliability and Its Determinants

Lutz Bornmann¹*, Rüdiger Mutz², Hans-Dieter Daniel^{2,3}

1 Max Planck Society, Munich, Germany, 2 Professorship for Social Psychology and Research on Higher Education, ETH Zurich, Zurich, Switzerland, 3 Evaluation Office, University of Zurich, Zurich, Switzerland





Review quality by subject area

- We found higher quality reviews in agriculture compared to other disciplines (median=22, IQR 20-26, 95% CI 21-24) vs. median=18, IQR 15-21, 95% CI 17-18).
 - Although small sample in agriculture compared to other subjects





- Authors' satisfaction was positively correlated to reviewer recommendation, but not to review quality, indicating that opinion and objective assessment differ.
- Use of the same instrument to assess the quality of reviews in one field may be unsuitable for another.
- We need an objective instrument to assess review quality and author and editor perception of the quality of
- Need for an improved RQI more objective





