Peer review of reviewers: the author's perspective

Ivana Drvenica
Giangiacomo Bravo
Lucija Vejmelka
Aleksandar Dekanski
Olgica Nedić

MOTIVES FOR RESEARCH

- **IS IT EFFICIENT and EFFECTIVE ? !**

- **constant tendency for the improvement**

blinding authors to reviewers

checklists and survey for reviewers

scoring from editors

post-peer review surveys

feedback from authors of submitted articles

AIM

To assess the opinion of authors on the overall quality and effectiveness of the peer review process and reviewer contribution to the reviewed paper

Authors

Reviewers

METHOD and ANALYSIS

- **Online survey** in 13 journals

- Corresponding authors were asked to fill the questionnaire (after final decision on their paper)

- from mid-April 2016 to mid-October 2017

- Analysis by **mixed-effects model**

- **Qualitative content analysis** of open question responses

Journal name	No. of responses	Share, %
The Archives of Biological Sciences	11	5.6
Chem. Ind. & Chem. Eng. Quarterly	20	10.3
Društvena istraživanja	2	1.0
Hemijska industrija / Chemical Industry	7	3.6
International Comparative Jurisprudence	2	1.0
International Journal of the Commons	1	0.5
Journal of Electrochem. Sci. and Eng.	16	8.2
Journal of the Serbian Chemical Society	106	54.9
Ljetopis socijalnog rada / Annual of Social Work	10	5.1
Mljekarstvo	1	0.5
Muzikologija	14	7.2
Pravni zapisi	1	0.5
Preventivna pedijatrija	2	1.0

Concept of research and questionnaire design

PEERE workshop "New models of peer review" held in Athens 15-17th November 2015.
WG 1 and 2 sessions at PEERE meeting "Taking stock on peer review" held in Valencia, Spain, 8-11th March 2016.

Question - **ANSWERS WITH A SEMANTIC DIFFERENTIAL STRUCTURE**

After how many weeks, after submitting the manuscript, did you get reports?

How many reports have you received?

Did the reviewer show a reasonable understanding of your work?
(1 - not at all ... 5 - fully)

Do you think that reviewer was competent to review your paper?
(1 - not at all ... 5 - fully competent)

According to your estimation, did the reviewer carefully and thoroughly read the paper?
(1 - not at all ... 5 - yes, very carefully and thoroughly)

Were the reviewer's comments clear?
(1 - not at all ... 5 - yes, completely clear)

Did reviewer's comments, suggestions... help you to improve the quality of the paper?
(1 - not at all ... 5 - yes, very much)

Do you think that reviewer's comments, suggestions, ... will be useful for your upcoming research?
(1 - not at all ... 5 - very useful)

According to your impression, did the reviewer dedicate sufficient time to review?
(1 - not at all ... 5 - adequate time)

Please give an overall assessment grade of the reviewer
(1- Bad .... 10 - Excellent)

Duration of the survey completion, seconds

Interval-scale variables in data analysis

qualitative content analysis

Question - **OPEN ANSWERS**

Did reviewer's comments, suggestions...help you to improve the quality of the paper?
(1 - not at all ... 5 - yes, very much) If you wish, please state how?

Did you have an impression that some non-scientific factor influenced the review and the final reviewer's suggestion? (if yes) Please explain.

Results and discussion
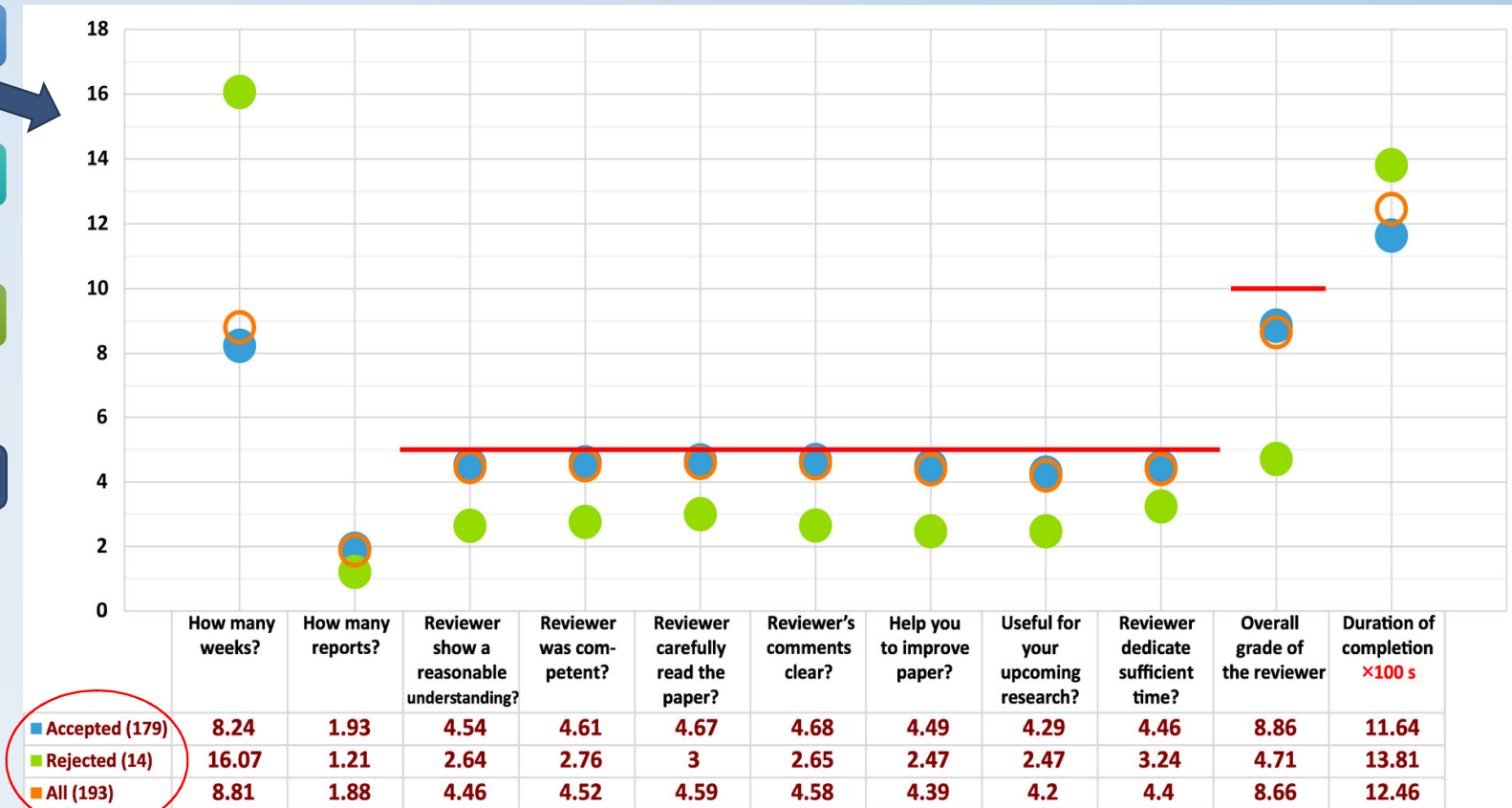
The content analysis of open questions

+

Data analysis

Conclusion

57.5 % received the reports on time or even very fast (29.0 %)

45.5 % received two reports
35.2 % had only one report
16.0 % got three reports
2.6% received four reports
0.5% had five reports

	How many weeks?	How many reports?	Reviewer show a reasonable understanding?	Reviewer was competent?	Reviewer carefully read the paper?	Reviewer's comments clear?	Help you to improve paper?	Useful for your upcoming research?	Reviewer dedicate sufficient time?	Overall grade of the reviewer	Duration of completion ×100 s
Accepted (179)	8.24	1.93	4.54	4.61	4.67	4.68	4.49	4.29	4.46	8.86	11.64
Rejected (14)	16.07	1.21	2.64	2.76	3	2.65	2.47	2.47	3.24	4.71	13.81
All (193)	8.81	1.88	4.46	4.52	4.59	4.58	4.39	4.2	4.4	8.66	12.46

The content analysis of open questions

- 1. On improvement of the quality of the paper by reviewer's comments and suggestions (50 out of 193)

Authors satisfaction with reviewers comments (f=34)

Authors dissatisfaction with reviewers comments (f=8)

- lack of contribution in general (f=3)
- lack of feedback (f=2), lack of attention (f=2)
- lack of clarification (f=1)

All answers from authors of rejected papers!

Comments directed to proof reading (f=8)

- 2. On specific influence of non-scientific factor on the review (40 out of 193)

Category	Codes	Frequency
Authors satisfaction with reviewers comments and suggestions in improvement of the paper quality	Improvement of the specific part of the paper	13
	General satisfaction	7
	Additional explanation	5
	Increase of the actuality	2
	Benefit for future	2
	Elimination	2
	Different formulation	2
	Conceptual changes	1
	Total	**34**

Different conceptual approach (f=4)
Personal reasons (f=3)
Institution of origin (f=2)
Competitiveness (f=2)
Country of origin (f=1)

Mixed-effects model on the authors' assessment of the reviewers' work

Reference classes are "accepted" for the final decision and "slow" for the speed of the review. All t-tests used Satterthwaite approximations to compute the degrees of freedom.

Random effects:

Groups Name	Variance	Std. Dev.
Author (Intercept)	0.9365	0.9677
Journal (Intercept)	0.1120	0.3346
Residual	2.0100	1.4178

Number of obs: 360, groups: reference, 193; journal, 13

assessment (1-10) outcome

predictors

Fixed effects:

	Estimate	Std. Error	df	t	p
(Intercept)	8.48186	0.47061	156.18	18.023	0.000***
No. of weeks	-0.02672	0.01312	220.33	2.037	0.043*
No. of reports	-0.25858	0.13096	155.35	1.974	0.050*
Final decision: Rejected	-4.10558	0.48355	248.66	8.491	0.000***
Speed: On time	1.12211	0.35200	189.19	3.188	0.002**
Speed: Fast	1.31674	0.40185	185.89	3.277	0.001**

Signif. codes: 0 '*' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

Factor analysis on the seven questions detailing the authors' opinions by defining two new factors as predictors (MR2 & MR1)

OLS (Ordinary Least Square) estimation of factors predicting the authors' assessment of the reviewers' work

Coefficients:	Estimate	SE	t	p
(Intercept)	8.052	0.215	37.479	0.000***
No. of weeks	-0.005	0.006	-0.890	0.375
No. of reports	-0.026	0.066	-0.392	0.695
Final decision: Rejected	-0.165	0.259	-0.637	0.525
Speed: On time	0.738	0.169	4.369	0.000***
Speed: Fast	0.838	0.194	4.321	0.000***
Competence factor	1.423	0.067	21.101	0.000***
Helpfulness factor	1.024	0.055	18.678	0.000***

Signif. codes: 0 '*' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1; $R^2 = 0.880$; F(7,184) = 191.2, p = 0.000**

Two new models using competence and helpfulness factors as outcomes

OLS estimation of factors predicting the authors' assessment of the reviewers' competence and the reviewers' helpfulness. Reference classes are "accepted" for the final decision, "slow" for the speed of the review and "yes" for the coherence of the editorial decision

Coefficients:	Estimate	SE	t	p
(Intercept)	0.336	0.237	1.422	0.157
No. of weeks	-0.010	0.007	-1.420	0.157
No. of reports	-0.162	0.072	-2.240	0.026*
Final decision: Rejected	-2.173	0.245	-8.867	0.000***
Speed: On time	0.234	0.186	1.255	0.211
Speed: Fast	0.228	0.213	1.073	0.285
Decision coherent: No	0.298	0.372	0.801	0.424

Predictor

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1; R2 = 0.366; F(6, 185) = 17.8, p = 0.000

Coefficients:	Estimate	SE	t	p
(Intercept)	-0.216	0.290	-0.743	0.459
No. of weeks	-0.014	0.008	-1.704	0.090.
No. of reports	0.075	0.089	0.844	0.400
Final decision: Rejected	-0.771	0.301	-2.566	0.011*
Speed: On time	0.233	0.228	1.020	0.310
Speed: Fast	0.335	0.261	1.283	0.201
Decision coherent: No	0.576	0.456	1.264	0.208

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1; R² = 0.094; F(6, 185) = 3.21, p = 0.005

CONCLUSION

Despite limitations of the study
(number of journals, uneven distribution of authors' responses from different journals, majority of responses from authors of accepted papers):

- Authors were much less willing to participate in a survey if their papers were rejected

- Authors of rejected papers clearly expressed a worse opinion of the reviewers' work and their answers to open questions were all within category of author's dissatisfaction

- The assessment of the competence of the reviewer strongly depended on the final editorial decision

- More reports reduced the assessment grade, possibly due to disagreement among reviewers

Thank you
for your attention!