Peer-Reviewing Processes and Incentives:
Data Management Community Survey Results

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Figure 1: Summary of participants’ seniority (left) and reviewing experience (right). Most respondents were senior researchers (71%), and about 16% overall have served in the role of PC chair.

ABSTRACT
Reviewing papers for conferences is an important and hard task that brings several challenges. The Data Management community has been increasingly struggling with high reviewer load, low-quality reviews and low reviewer engagement, unethical reviewing practices as well as undeclared and under-declared conflicts of interest. In this article, we report the results of a survey we conducted to gather the opinion of the Data Management community regarding what could be done to address these challenges. We reached out to about 1,200 members of the data management community with relevant reviewing experience and collected 345 anonymous responses. We plan to follow up with a subsequent report, discussing in more depth particular proposals, inspired by the collective feedback from the community.

1. CHALLENGES AND MISSION
The Data Management research community has worked towards important innovations in our submission and reviewing processes across many of our venues. Examples include the implementation of multiple submission cycles, opportunities for author feedback and revisions, promotion of reproducibility and data sharing, manual checks for review quality, automated COI checks, etc.

However, we also struggle with pain points that have been exacerbated in recent years, as we observe increased reviewer fatigue and declining engagement, as well as challenges with improper conflict declaration. These issues compromise the effectiveness, efficiency, and integrity of our processes. We briefly discuss them here.

- **High reviewer load:** With several deadlines through the year, author feedback phases [2], revision cycles, and participation on multiple PCs, reviewers are often overloaded. The issue is not simply with the number of papers one is called to review, but with the fact that reviewing responsibilities often span the entire year, making it hard for reviewers to plan these around their other career and personal responsibilities.

- **Low-quality reviews and low reviewer engagement:** Our community has been observing an uptick on reviews that are terse, dismissive, and unconstructive. Some reviewers do not respond promptly, or at all, to requests to contribute to discussion, or update their reviews. Late reviews are widespread, reducing the effectiveness of the author feedback and discussion processes. As an example, in the first three submission cycles of SIGMOD 2024, only about 20% of submissions had all three reviews by the review deadline; a little under 20% of submissions were still missing at least one review 5 days after the deadline; about a dozen submissions were still missing reviews 10 days after the deadline.

- **Unethical reviewing practices:** We want to ensure processes that guard against coordination and collusion between authors and reviewers to get papers accepted, resulting in dishonest reviews [3]. Such re-
views often are of low quality and superficially positive regardless of the content of the papers.

- **Undeclared and under-declared conflicts:** Authors often fail to accurately declare conflicts of interest (COI) with the PC, resulting in burdensome inefficiencies in paper assignment, and potential conflicts in assignments if those are not caught in time. Despite efforts to support conflict entry, grace periods for COI entry, and personalized reminders to authors who fail to complete this task, the problem stubbornly persists.

Several of our executive bodies have called together a task force to collect community feedback and propose policies and initiatives to help address these issues. The joint task force is chaired by Sourav Bhowmick (Nanyang Technological University) and Alexandra Meliou (University of Massachusetts Amherst), and includes the following members: Karl Aberer (Chair of the ICDE Steering Committee), Divy Agrawal (Chair of the ACM SIGMOD Executive Committee), Angela Bonifati (President of the EDBT Executive Board and Association), Vanessa Braganholo (PVLDB Advisory Board), Floris Geerts (Chair of the PODS Executive Committee, ICDT Council member), Wolfgang Lehner (Managing Editor of PVLDB), Divesh Srivastava (President of the VLDB Endowment Board of Trustees).

One of the first initiatives of the task force was the release of a community survey. In this report, we discuss survey participation, present the questions posed, and summarize some aggregate results. The task force plans to work on and release recommendations for possible policies and initiatives in a subsequent report.

2. SURVEY DESCRIPTION AND RESULTS

The survey was advertised by direct email to a list of about 1,200 data management researchers who have served on relevant Program Committees in recent years. We avoided broader advertisement on social media and mailing lists such as DBWorld, as we wanted to keep...
Figure 4: Respondents were against reducing opportunities for revisions and author feedback, and they were split on the idea of reducing submission page limits. All other proposals received majority support, with the strongest support indicated for strict penalties for under-declared conflicts.

Figure 4: Which of the following initiatives or policies relating to submission policies are you likely to support?

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Support Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limiting submissions per author</td>
<td>Opposed</td>
</tr>
<tr>
<td>Sharing prior reviews when resubmitting to a new venue</td>
<td>Neutral</td>
</tr>
<tr>
<td>Desk rejection for formatting violated (e.g., decreased font size)</td>
<td>In favor</td>
</tr>
<tr>
<td>Strict penalties, such as desk rejection, for under-declared conflicts</td>
<td>Opposed</td>
</tr>
<tr>
<td>Reduce submission page limit</td>
<td>Neutral</td>
</tr>
<tr>
<td>Restricting opportunities for revisions and author feedback</td>
<td>In favor</td>
</tr>
</tbody>
</table>

A total of 305 participants responded to this question. Respondents were against reducing opportunities for revisions and author feedback, and they were split on the idea of reducing submission page limits. All other proposals received majority support, with the strongest support indicated for strict penalties for under-declared conflicts.

2.2 Review Processes

In the subsequent section, the survey asked participants to indicate whether they support or oppose possible policies relating to peer-reviewing practices. We included 8 policy suggestions organized in a Matrix table with a Likert scale (opposed, neutral, in favor). To get additional context on each proposed initiative, including likely benefits and possible downsides, we instructed the participants to hover over the information icon. We supply the summary information for each policy proposal in Figure 9.

A total of 305 participants responded to this question. The vast majority of participants identified themselves as senior researchers (71%); about 16% of all respondents have served in the role of PC chair, and about 36% have served in the role of Associate Editor or meta-reviewer.

2.3 Submission Processes

Our questions on policies and initiatives relating to submission processes were also organized in a Matrix table with the same Likert scale (opposed, neutral, in favor). Again, participants could access additional information for each initiative by hovering over the information icon (more details in Figure 9).

A total of 303 participants responded to this question. Respondents were against reducing opportunities for revisions and author feedback, and they were split on the idea of reducing submission page limits. All other proposals received majority support, with the strongest support indicated for strict penalties for under-declared conflicts.

On the topic of aiding conflict declaration, we organized options in a Matrix table with the Likert scale: not useful, somewhat useful, very useful. Participants indicated a strong preference for automated COI entry (Figure 5). Systems like CLOSET [1] can provide some support for this function, but challenges with false positives and entity resolution issues remain. Ultimately,
some COI information is not in the public domain, but the community’s clear desire for such support perhaps indicates that we should consider possible initiatives in this direction. Out of the 301 respondents, only 61 considered an abstract deadline a very useful buffer for taking care of their COI entry, whereas having a short grace period after the regular deadline was more popular (42% consider it very useful and 45% somewhat useful).

### 2.4 AE Expectations

With the growth of our research community, many of our PCs have grown larger to handle the increasing number of submissions. This has led to a hierarchical approach in PC organization, with a small set of PC members acting in the role of Area Chairs, Associate Editors, or meta-reviewers—for brevity, we will refer to all such members as AEs from here on. Frequently, AEs do not review papers directly but are responsible for handling a set of submissions, coordinating discussions, identifying issues with the reviews and taking appropriate action, etc.

With a large number of submissions, PC-chairs are often unable to keep a close eye on reviews and discussions of all submissions, so the function of AEs is critical. However, we observe significant variability in AEs’ involvement and submission handling, despite PC-chairs often sharing expectations through guideline documents. We wanted to better understand, through the survey, our community’s expectations of the AE role. We posed to participants the question “Which of the following tasks do you consider important in the expectations for this role?” We organized AE actions in a Matrix table with the Likert scale: not important, somewhat important, very important. Figure 6 shows the aggregate responses of 297 participants.

Based on the results, the most important functions of AEs include initiating and ensuring the progress of discussions, evaluating reviews for quality and asking for corrections, reading the reviews carefully and actively participating in the discussion themselves, urging the reviewers to support their positions with reasoned arguments. We note, however, that all actions are recognized by the majority of participants (76% or more) as somewhat or very important. The item that received the least support, with 24% of participants noting it as not important, was empowering the AEs to disagree with and overrule reviewers. However, we should highlight that...
Figure 8: Most participants support these particular initiatives for fostering a more positive reviewing culture, but there is some non-negligible opposition.

In this context, the overwhelming majority (76%) recognized it as somewhat or very important.

In the context of AE responsibilities, we asked our survey participants to indicate the number of papers that they consider a reasonable load for this role. We recognize that this expectation can be affected by how this load is distributed throughout the year. To alleviate this ambiguity, we asked participants to consider a single submission cycle with about 200 submissions in total, when most reviewers are assigned 3–4 papers to review. (To help the reader put this in context, this is close to the number of submissions typically received in the July cycle of SIGMOD). Out of the 297 participants who answered this question, 45% recommend a load of 5–8 submissions, and 30% recommend a load of 8–10 submissions (Figure 7).

2.5 Fostering Better Culture

We often observe that good and reliable reviewers do a consistently good job, regardless of incentives. Ideally, we want our community to have an established culture of conscientious reviewing. However, PhD students are not consistently trained to be good and conscientious reviewers.1 Our conferences can establish efforts that support such training, that both hone the reviewing skills of participating researchers and promote good reviewing practices as something valued in our community.

We proposed two potential initiatives that our organizing committees could undertake, and we asked participants’ opinions on whether they were likely to support them. The Likert scale we used was: opposed, neutral, in favor. We describe the information we gave to participants about these initiatives below:

Shadow PCs of junior researchers. Junior researchers are added to a shadow PC, and are assigned to papers similar to the regular PC. They can remain anonymous to the AE and to other reviewers. Their reviews are assessed for quality by the AE, and top shadow reviewers are recognized with awards. High-quality shadow reviews can be made available to the authors.

Reviewing workshops. This can be an event collocated with our conferences, where junior researchers are exposed to good and bad reviewing practices through anonymized example reviews. They take a stab at reviewing a mock submission, and senior researchers help them work on their reviews. Successful completion of the workshop earns participants a certificate, which may help them get on PCs sooner.

We received responses from 299 participants, the majority of whom were in favor of both proposals (Figure 8). However, there is some non-negligible opposition as well (about 11% for the shadow PC). A subsequent free-form question in our survey provided some clarity to this stance, as some participants suggested that assigning junior people to the shadow PC may devalue their abilities and contributions, and they would rather allow people to jump into the regular PC directly. We believe that it is meaningful to consider these concerns and adjust and clarify the proposals accordingly. For example, the primary target of the shadow PC may be somewhat junior graduate students who want to gain experience in reviewing but who would not be normally invited to regular program committees at this early stage of their careers.

2.6 General Feedback

Our survey concluded with a free-form textbox, where participants were invited to share further thoughts. We were delighted with the engagement of our community on this topic. We received 150 responses in the suggestions textbox, totaling more than 16K words. Many responses thanked the task force for the initiative, and the vast majority shared thoughts on the challenges and provided interesting suggestions. We found many opposing views expressed in the feedback. For example, many participants urge more detail and clarity in the meta-reviews submitted by AEs, and others express opposition, arguing that meta-reviews sometimes increase confusion when concerns and requests do not match well with those of the reviewers. Another example of conflicting opinions relates to the opportunities for revisions and feedback; many participants urge the community to maintain these functions, and others argue that these efforts have little benefit and only add to the workload of reviewers and authors. We also saw a lot of input on reviewing incentives and penalties, and COI handling. There are also several novel suggestions on releasing reviews of accepted papers (anonymously), and suggestions for empowering reviewers to champion papers.

Given the extent of the feedback we received in this part of the survey, we intend to summarize and discuss more thoroughly these suggestions in a separate report.

Our task force is working on producing a list of possible initiatives, with discussion of the potential benefits, drawbacks, and challenges in implementing each one.

1We fully recognize that we can find many bad reviewers amongst senior researchers as well. However, on the topic of fostering a culture of conscientious reviewing, it is more practical to reach out to our more junior members.
We will work to incorporate the community feedback into this list of suggestions, and we will consider ways of releasing some more detailed comments, as long we do not compromise participants’ anonymity.

3. SUMMARY AND OUTLOOK

We are very happy with the community engagement with the survey, and we found many of the suggestions inspiring. Specifically, the survey has helped us better understand intricacies of these challenges that we had not appreciated earlier, and gave us inspiration for exploring more ideas. Our task force will work on making progress towards specific and more thoroughly analyzed proposals that we will share in a subsequent report.

4. REFERENCES

