Korean scholarly journal editors’ and publishers’ attitudes towards journal data sharing policies and data papers (2023): a survey-based descriptive study

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Abstract

Purpose: This study aimed to ascertain the attitudes of Korean scholarly journal editors and publishers toward research data sharing policies and the publication of data papers through a survey.

Methods: Between May 16 and June 16, 2023, a SurveyMonkey survey link was distributed to 388 societies, including 270 member societies of the Korean Council of Science Editors and 118 societies that used an e-submission system operated by the Korea Institute of Science and Technology Information. A total of 78 societies (20.1%) responded, from which 72 responses (18.6%) were analyzed after excluding invalid responses.

Results: Out of the representatives of 72 journals, 20 editors or publishers (27.8%) declared a data sharing policy. Those journals that did not have such a policy often expressed uncertainty about their future plans regarding this issue. A common concern was a potential decrease in manuscript submissions, primarily due to the increased workload this policy might impose on editors and manuscript editors. Four respondents (5.6%) had published data papers, with two of them including this as a publication type in their author guidelines. Concerns about copyright and data licensing were cited as drawbacks to publishing data papers. However, the expansion of publication types and the promotion of data reuse were viewed as benefits.

Conclusion: Korean scholarly journal editors’ and publishers’ attitudes toward data sharing policy and publishing data papers are not yet favorable. More training courses are needed to raise awareness of data sharing platforms and emphasize the need for research data sharing and data papers.

Keywords
Data paper; Data sharing policy; Journal editors; Republic of Korea; Surveys and questionnaires
Introduction

Background and rationale

The term “data sharing” refers to the disclosure and distribution of data generated during research when authors publish their findings. A data availability statement within a publication informs readers about the location and method of accessing the data that underpins the presented findings and analyses. As of July 1, 2018, biomedical journals adhering to the guidelines of the International Council of Medical Journal Editors (ICMJE) have been mandated to include a data availability statement [1]. A study conducted from December 2018 to January 2019 surveyed data sharing policies across 100 Korean journals. The results showed that 13 journals had introduced such a policy, with 10 of these being recommendation only [2]. A subsequent survey in June 2020 [3] examined 201 Korean journals listed in both Scimago Journal and Country Ranking and Web of Science Core Collection. The findings revealed that only one journal had implemented mandatory data sharing policies. Meanwhile, 43 journals had chosen to adopt discretionary data sharing policies, while 127 journals had no such policies in place.

Data sharing policies have subsequently been incorporated into training courses for editors at the Korean Council of Science Editors (KCSE), to ensure that research articles maintain a high level of reproducibility and transparency. In the current survey, the author aims to understand the status quo as of 2023. Beyond data sharing, there have also been conversations about data papers within Korea. A qualitative study conducted by Lee and Kim [4] involved interviews with seven researchers who had published data papers in 2019. These researchers expressed that, similar to traditional research articles published in conventional journals, data papers also gain academic recognition through citations. However, they also noted that it can be challenging to receive the same level of academic acclaim for data papers as for research articles. The researchers interviewed highly valued the practical benefits of data journals. They also suggested that data journals should evolve into innovative academic dissemination platforms that encourage data sharing and reuse. Consequently, this study investigated the attitudes of editors and publishers toward data sharing policies and data papers. The results will help to shape how these topics should be approached within the KCSE in the future.

Objectives

Specifically, this study sought to identify the following: (1) the extent to which journals have policies on research data sharing; (2) the perceived drawbacks and benefits of data sharing, according to editors or publishers; (3) the frequency with which journals have published data papers; (4) the perceived drawbacks and benefits of data papers, as seen by editors or publishers; and (5) the perceived necessity of data sharing and data paper platforms, according to these professionals.

Methods

Ethics statement

Informed consent was not deemed necessary as the study did not involve the collection of sensitive or personally identifiable information.

Study design

This descriptive study was based on an online questionnaire survey.

Study setting and participants

Representatives of 388 societies, comprising 270 KCSE member societies and 118 member societies using ACOMS, an e-submission system run by the Korea Institute of Science and Technology Information (KISTI), were sent a survey link via SurveyMonkey (SurveyMonkey Inc) between May 16 and June 16, 2023. The recipients of these survey invitations were typically either journal editors or official contacts of professional societies. As such, the journal’s editor or publisher was requested to respond. In this context, the term “publisher” refers to all staff members within the societies and publishing companies, excluding content experts who are part of the editorial board. Each journal was represented by a single respondent. Out of the total, 78 societies responded, representing a 20.1% response rate. However, six responses were discarded due to their lack of sufficient information, leaving 72 (18.6%) to be included in the final analysis.

Validity and reliability of the questionnaire

The authors drew upon previous research to develop the survey items. The questionnaire was constructed using questions from a survey previously conducted on editors in Korea [2] (Suppl. 1, 2). Initially, the authors drafted the survey items, which were then enhanced with input from a literature and library information expert from KISTI and an executive from KCSE. Following revisions, they concurred that the questionnaire was valid for use in a survey on data sharing policy and data paper. The questionnaire comprised 30 items: 26 were nominal scale or descriptive items, and four items included 21 detailed subitems on a 7-point Likert scale. The reliability of each group of items (pertaining to the disadvantages or benefits of adopting a data sharing policy and data papers), was verified. The reliability, as measured by Cronbach α, was as follows: 0.907 for the seven items on disadvantages and 0.916 for the five items on benefits related to adopting a data shar-
ing policy; 0.807 for the five items on disadvantages, and 0.870 for the four items on benefits related to adopting data papers (Suppl. 3).

Variables
The characteristics of the respondents and their respective journals, detailed in Table 1, were considered as variables. The outcomes were the questionnaire items other than the respondents’ and journals’ characteristics.

Data sources and measurement
All variables and outcomes were derived from the responses to the survey questionnaire. We conducted a comparative analysis of the respondents’ attitudes toward data sharing policies and the publication of data papers. The raw response data from participants can be found in Dataset 1.

Bias
There was no bias in selecting participants, as all eligible journal editors were included.

Study size
No sample size estimation was done, as all target journal editors were surveyed.

Statistical methods
The survey results were analyzed for descriptive and comparative statistics. The statistical analysis was conducted using dBSTAT ver. 5.0 (dBSTAT Co; http://dbstat.com/). The degree of agreement according to the characteristics of responders and journals was compared by two-way repeated-measures analysis of variance (ANOVA). The Kruskal-Wallis test was utilized to compare the level of agreement on each item regarding disadvantages and benefits.

Results
Participants
The characteristics of the journals and respondents are shown in Table 1. There were 33 items in the National Science and Technology Standard Classification of Korea, which were then clustered into the eight Korea Citation Index (KCI) disciplines defined by the National Research Foundation of Korea (NRF). The majority of respondents hailed from the fields of medical and natural sciences. In an effort to gather representative opinions of the journal, many respondents boasted over 20 years of research experience. Those with more than 6 years of editing experience were the most prevalent. Over half of the journals were published in English. The majority of the journals were open access (n = 64, 88.9%), and the cost of publishing an article was most frequently borne by the publishing organization, such as a society or publishing house (n = 41, 56.9%)

Table 1. Characteristics of the journals and responders of the 72 editors or publishers in Korea

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No. (%)</th>
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<tbody>
<tr>
<td>Subject</td>
<td></td>
</tr>
<tr>
<td>Humanities</td>
<td>4 (5.6)</td>
</tr>
<tr>
<td>Social sciences</td>
<td>11 (15.3)</td>
</tr>
<tr>
<td>Natural sciences</td>
<td>12 (16.7)</td>
</tr>
<tr>
<td>Engineering</td>
<td>5 (6.9)</td>
</tr>
<tr>
<td>Medicine</td>
<td>31 (43.1)</td>
</tr>
<tr>
<td>Agriculture and fisheries</td>
<td>5 (6.9)</td>
</tr>
<tr>
<td>Arts and sports science</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Multi-disciplinary science</td>
<td>4 (5.6)</td>
</tr>
<tr>
<td>Role</td>
<td></td>
</tr>
<tr>
<td>Content experts (editor, editorial board members)</td>
<td>55 (76.4)</td>
</tr>
<tr>
<td>Publisher (manuscript editor, society staff, company staff)</td>
<td>17 (23.6)</td>
</tr>
<tr>
<td>Research experience (yr)</td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>12 (16.7)</td>
</tr>
<tr>
<td>≥ 5 or &lt;10</td>
<td>9 (12.5)</td>
</tr>
<tr>
<td>≥ 10 or &lt;15</td>
<td>9 (12.5)</td>
</tr>
<tr>
<td>≥ 15 or &lt;20</td>
<td>17 (23.6)</td>
</tr>
<tr>
<td>≥ 20 or &lt;30</td>
<td>21 (29.2)</td>
</tr>
<tr>
<td>≥ 30</td>
<td>4 (5.6)</td>
</tr>
<tr>
<td>Editorial experience (yr)</td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>2 (2.8)</td>
</tr>
<tr>
<td>≥ 1 or &lt;2</td>
<td>8 (11.1)</td>
</tr>
<tr>
<td>≥ 3 or &lt;6</td>
<td>20 (27.8)</td>
</tr>
<tr>
<td>≥ 6</td>
<td>42 (58.3)</td>
</tr>
<tr>
<td>Full-text language of the journal</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>39 (54.2)</td>
</tr>
<tr>
<td>English or Korean</td>
<td>29 (40.3)</td>
</tr>
<tr>
<td>Korean</td>
<td>4 (5.6)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Open access</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>64 (88.9)</td>
</tr>
<tr>
<td>No</td>
<td>8 (11.1)</td>
</tr>
<tr>
<td>Major source of publishing budget</td>
<td></td>
</tr>
<tr>
<td>From authors (including if authors are awarded research grants)</td>
<td>18 (25.0)</td>
</tr>
<tr>
<td>Supported by national funds such as research foundations, grants, etc.</td>
<td>13 (18.1)</td>
</tr>
<tr>
<td>Paid for by the publishing entity (society, publisher, etc.)</td>
<td>41 (56.9)</td>
</tr>
</tbody>
</table>
Twenty of the 72 journals (27.8%) had a data sharing policy, and only one required mandatory data sharing. Of the 52 journals without a data sharing policy, 20 had plans to introduce such a policy (Table 2).

**Attitudes towards data sharing policies**

Twenty of the 72 journals (27.8%) had a data sharing policy, and only one required mandatory data sharing. Of the 52 journals without a data sharing policy, 20 had plans to introduce such a policy (Table 2).

**Shortness and merits of data sharing**

Concerning the disadvantages of data sharing, out of seven potential issues, the most common concern was “the increased workload of editors or editorial staff following the implementation of a data sharing policy” (P < 0.05) (Suppl. 4). Out of the advantages of data sharing policies, “facilitating peer review” was identified as the least likely (P < 0.05) out of five items, including the following: ensuring research objectivity, improving the quality of papers, promoting the reuse of data, and increasing citations of the journal (Suppl. 5).

**Attitudes toward data sharing policies according to the characteristics of journals and respondents**

An analysis was conducted to determine if there were variations in attitudes towards the disadvantage (seven items) and benefits (five items) of data sharing, based on the KCI reference discipline, role in journal publishing, implementation of an open access policy, and adoption of a data sharing policy. This was done using a two-way repeated ANOVA (Suppl. 6). The results showed no significant differences in attitudes towards disadvantage (P = 0.303) and benefits (P = 0.872) across different disciplines. Similarly, no significant differences were found in attitudes towards disadvantage (P = 0.303) and benefits (P = 0.808) based on the role in journal publishing (whether editor or publisher). The study also found no significant differences in attitudes towards disadvantages (P = 0.820) and benefits (P = 0.702) based on whether the journal was published as open access. Respondents who had not adopted a data sharing policy identified more disadvantages (P = 0.008) (Fig. 1). However, the adoption of a data sharing policy did not significantly affect attitudes toward the benefits of data sharing.

**Attitude toward data papers**

In terms of familiarity with data papers, eight respondents (11.1%) indicated they were “very familiar,” while 28 (38.9%) claimed they were “not at all familiar.” The majority, 36 respondents (50.0%), had some level of awareness. Only four respondents revealed that they had published a data paper (Table 3). The survey also inquired if they had ever published a data paper as a type of publication, to which only two responded affirmatively. Most had not yet published a data paper, with 27 (37.5%)
expressing no intention to do so and 47 (65.3%) indicating they did not have a timeline or plan for such a publication.

Disadvantages and benefits of data papers

The survey inquired about any perceived disadvantages and benefits regarding data papers. The most significant disadvantage was related to copyright and licensing issues (P < 0.05). When asked about the benefits or roles of data papers, the statement “being recognized for research by publishing data” received fewer responses compared to the statement “promoting the reuse of data” (P < 0.05) (Suppl. 7).

Attitudes towards data papers according to the characteristics of journals and respondents

An analysis was conducted to determine whether there were any differences in attitudes towards the disadvantage (five items) and benefits (four items) of data paper publishing. This was based on the KCI academic classification, roles in journal publishing, implementation of an open access policy, and the adoption of a data sharing policy. The analysis was conducted using two-way repeated ANOVA (Suppl. 8). The academic classification showed no significant difference in attitudes towards the disadvantages (P = 0.769) or benefits of publishing data papers (P = 0.665). Similarly, the role in journal publishing did not significantly affect attitudes towards disadvantages (P = 0.941) or benefits (P = 0.544). The open access status also did not significantly influence attitudes towards the disadvantages (P = 0.901) or benefits (P = 0.385) of data paper publishing. However, respondents who had not adopted data sharing expressed a stronger preference for disadvantages (P = 0.008) (Fig. 2). The adoption of a data sharing policy did not significantly affect attitudes towards the benefits of publishing data papers.

Repositories of data sharing and data papers

Table 4 displays the repositories where data is deposited, as per the data sharing policies of the 20 journals. Regarding the use of a submission management system for data article submission, four journals responded, citing ACOMS and Editorial Manager (Aries Systems Corp) as their systems of choice.

Discussion

Key results

Fifty journals had not established a data sharing policy, whereas 20 (27.8%) had. Among the journals with a data sharing policy, it was optional in all but one instance. Editors expressed the most concern about the increased workload associated with data sharing, but they also acknowledged the benefits of ensuring research reproducibility. Four journals (5.6%) had already published data articles. Of the 68 journals that had never published data papers, 11 (16.2%) planned to do so within the next 6 years. The primary concern regarding the publi-
cation of data papers was the copyright and licensing of the data. However, the advantages of facilitating data reuse were highly valued.

**Interpretation**

These results suggest that Korean academic journals have not yet widely adopted data sharing policies. Even among those that have declared such a policy, only one journal has implemented a mandatory data sharing policy, while the majority have introduced optional ones. Essentially, these journals have announced a policy but left the decision to share data up to the authors. The number of international journals that have declared mandatory data sharing policies remains relatively small. The lack of motivation to introduce additional policies may be due to the fact that data sharing is already obligatory in fields such as oceanography, ecology, and genetics [5]. In particular, ICMJE has mentioned a clinical data sharing policy [1]. However, it is presumed that many medical journals have adopted this model because it simply requires the declaration of a policy, leaving the decision to share data up to the authors. The potential for an increased workload of editors or editorial staff after implementing a data sharing policy is a concern for publishing professionals. However, if the editor understands the data sharing process, it is not a daunting task—even the editor-in-chief can deposit data into the repository [6]. The crux of data sharing lies in first announcing the policy itself.

The next factor to consider is whether data sharing is optional or mandatory. There are over 2,000 research data repositories worldwide, a list of which can be found at https://www.re3data.org/. Some of them are free to deposit. Some of these repositories allow free deposits, so the existence of repository sites does not pose a barrier to data sharing policies. As of 2023, one data journal in Korea is GEO DATA (https://geodata.kr/). In addition to data journals, the recent introduction of data papers in journals is another emerging topic in journal publishing [4]. It appears that the concept of a data paper is not yet widely recognized among Korean editors and publishers, as only four journals (5.6%) accept data papers as articles. The decision to accept a data paper as a type of publication lies with the editor. When a data paper is submitted, it must adhere to a specific format [7].

**Comparison with previous studies**

A survey was conducted in Korea in 2019 to examine data sharing policies among editors. At that time, out of 100 journals, 13 had implemented data sharing policies [2]. One of these journals had even made data sharing mandatory, with a peer review process for the data. Four years later, the rate of journals announcing data sharing policies had increased to 27.7%. However, it is difficult to definitively state that this is an increase, as the survey was not randomized. To obtain accurate information, it would be necessary to collect complete data by visiting each journal’s website. Among the reasons for not implementing data sharing policies, the increased workload for editorial staff was cited as the primary concern in this study.

A new US federal regulation mandates data sharing by 2023, regardless of the type of data involved [8]. Mozersky et al. [9] conducted a survey of US qualitative researchers, with a sample size of 425, to gain insight into the challenges and incentives associated with sharing sensitive or health-related qualitative research data. The majority of researchers (96%) reported that they had never deposited qualitative data in a repository. Their primary concerns were the lack of participant consent for data sharing, the sensitive nature of the data, and the potential breach of trust. The concerns of medical researchers differ from those of the respondents in this study. According to a 2020 survey [10], among 78 noncommercial funders, 30 (38%) had implemented a data sharing policy. Of these, 18 (60%) required data sharing, while 12 (40%) merely encouraged it. Additionally, 41 out of 100 commercial funders (41%) had established a data sharing policy. In Korea, no funders currently require a data sharing policy. However, if funders, including governments, were to request researchers to share their research data, the adoption of data sharing policies could be expedited. In 2018, of the 21,793 articles published by PLOS, 93.7% included data availability statements. Similarly, 88.2% of the 31,956 articles published by BMC included such statements. These data availability statements typically provided a link to the data in a repository [11].
In Korea, there has been no prior study conducted on the attitudes towards data papers in a journal. The only related research was a qualitative study on the process of writing data papers. Of the 224 researchers surveyed from five Korean government research institutes, 180 (80.4%) reported having experience with collecting or creating research data. Of these 180 researchers, 32 stated that they had never shared their research data, leaving 148 respondents who had shared at least some of their data, as per the survey conducted in June 2022 [12]. In the present study, four journals were found to accept data papers. However, a comprehensive review of all journals that accept data papers is necessary for a more accurate understanding of the situation. Fu et al. [13] provided evidence in 2023 that research articles accompanied by a corresponding data paper garnered more citations than other papers published in the same issue of the same journal. These results can incentivize editors and researchers to share their research data.

Limitations and generalizability
A survey on editors’ perceptions of data sharing was previously conducted in Korea [4]. This time, however, the survey focused on the content of data papers, with a larger and more complex set of questions. Therefore, a simple comparison with the results from four years ago is not feasible. Furthermore, both surveys were primarily conducted among organizations affiliated with scientific, technological, engineering, and medical journals. This makes it impossible to garner a broad spectrum of responses from journals in the humanities and social sciences. The study also did not employ random sampling, which complicates the generalization of the results. There is a likelihood that editors with a particular interest in this content may have responded selectively, suggesting that the actual situation could be less prevalent than these results indicate. Also, the low rate of responses to the survey may reflect low recognition of the data sharing policy and the data paper in Korean editors.

Conclusion
Some Korean journals have implemented data sharing policies. However, the experience of editors and publishers with data articles remains limited. Despite this, editors and publishers are cognizant of the advantages of data sharing in ensuring the reproducibility of research. The most effective approach would be for funding bodies, including the Korean government, to enforce mandatory data sharing policies, similar to those of the US government. For this to occur, a national or societal consensus on data sharing is necessary. Additionally, regulations concerning data protection in the medical field would need to be considered in the context of data sharing. Without such external impetus, the development of data sharing policies in Korean journals will likely continue at a slow pace. Furthermore, well-organized training programs on data sharing and data paper publishing for editors should be developed together with establishing mandatory policies for wide acceptance from the community.

Conflict of Interest
No potential conflict of interest relevant to this article was reported.

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Data Availability
Dataset file is available from the Harvard Dataverse at https://doi.org/10.7910/DVN/C4JOGX.

Supplementary Materials
Supplementary materials are available from https://doi.org/10.7910/DVN/C4JOGX.

Suppl. 1. Survey questionnaire on the opinions of Korean scholarly journal editors and publishers regarding journal data sharing policies and data papers in 2023 in Korean.
Suppl. 2. Survey questionnaire on the opinions of Korean scholarly journal editors and publishers regarding journal data sharing policies and data papers in 2023, translated into English.
Suppl. 3. Reliability analysis of four groups of items: shortness (seven items) and merits (five items) of data sharing policy, and shortness (five items) and merits (four items) of data paper publishing.
Suppl. 4. Statistical results for comparison of seven items on the disadvantages of data sharing policies.
Suppl. 5. Statistical results for comparison of five items on the benefits of data sharing policies.
Suppl. 6. Statistical results for comparison of items on disadvantages and benefits according to the characteristics of the journals and respondents.
Suppl. 7. Statistical results for comparison of attitudes towards items on the disadvantages (five items) and benefits (four items) of publishing data papers.
Suppl. 8. Statistical results for comparison of attitudes towards the disadvantages (five items) and advantages (four items) of publishing data papers according to the characteristics of the journals and respondents.

References


