Developing an Effective Tool for Assessing Research Integrity in Japanese Research Institutions

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Objectives

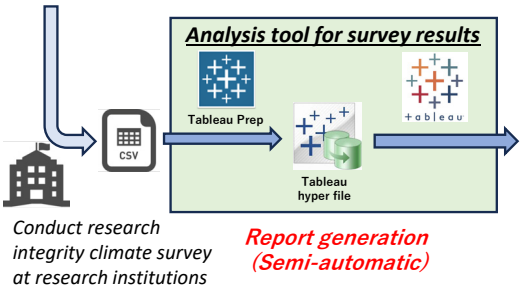
To effectively promote research integrity, it is crucial to gain a precise understanding of its current state. We believe ***it is essential for research institutions to conduct research integrity climate surveys on their initiatives and accurately understand its results****. This is important because* ***different institutions face distinct challenges****, and* ***research integrity is a sensitive issue that requires careful handling of survey results****. Therefore, we have undertaken* ***the development of a research integrity questionnaire and an analysis tool for its results to be used by the Japanese research institutions****.*

Outline of the Questionnaire and Analysis Tool for Assessing the Research Integrity Climate

Outline of the Questionnaire

Q1. Respondents' Profile
Q2. Education and training received related to research integrity
Q3. Daily research activities at the laboratory
Q4. Laboratory research climate
Q5. Attitudes toward /perception regarding research integrity in daily research practices
Q6. Perception on institution's initiatives regarding research integrity

The dataset used is from a preliminary survey conducted in 2021. The outline of the preliminary survey is as follows.
Period：10/2021-11/2021
Cooperating institutes：7 universities
Total number of responses: 1,198



Conduct research integrity climate survey at research institutions

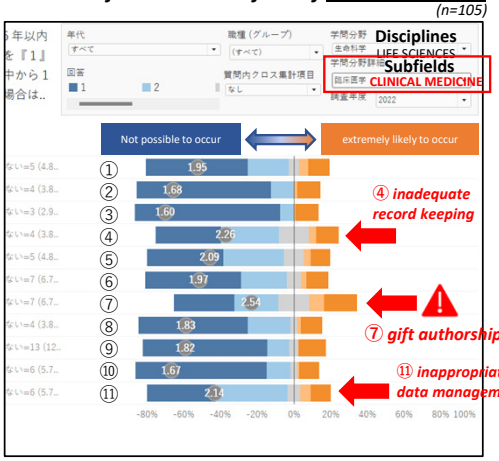
Report generation (Semi-automatic)

Q5-1(3) Do you think the following behaviors could occur during the next five years in relation to the research you are involved in? Select a number from 1 to 5, with **1 indicating "not possible to occur"** and **5 indicating "extremely likely to occur."** If you are not sure or prefer not to answer the question, select "Don't know/Prefer not to say."

① Excluding specific data from the analysis results without clearly explaining why
② Inappropriately changing research data or primary sources
③ Creating fictitious research data or materials to match your own theory or research plan
④ **Inadequate record keeping** in laboratory or research notes and other research records
⑤ Inappropriate citations of other researchers' ideas and research results in presentations
⑥ Presenting research results for which reproducibility has not been sufficiently confirmed without specifying this
⑦ Including someone who is not directly involved in the research as an author when presenting results
⑧ Omitting an author who ought to be included as a co-author when presenting results
⑨ Submitting a manuscript to a journal and then submitting a considerably similar manuscript to a different journal while the first manuscript is under review
⑩ Translating an article that has already been published in Japanese into English and submitting it to a journal overseas without indicating its translation/publication history
⑪ **Inappropriate storage/management of research data** or materials

Filtering by target attributes

The results focused on the field of clinical medicine *(n=105)*



Our analysis tool currently in development ***aims to enable research institution staff to easily visualize the results of research integrity surveys****. Additionally, it aims to clearly* ***identify the differences in challenges across various research fields and positions****. Comparisons between survey years are also possible, allowing us to understand* ***how the situation has changed over time****.*

Challenges

- *Initially, our goal was to develop an analytical tool that could be used only within a research institution. However, through interviews with staff at several universities, we found that* ***they strongly preferred to compare their data with nationwide data from across Japan****, which would also help us understand the situation on a national level. Based on the institutions' requests,* ***we plan to develop a system that can aggregate data nationwide****. With this requirement in mind, we have been developing the tool. However,* ***achieving this requires a continuous funding and a minimal infrastructure****.*
- *While we aim to develop a tool that can be used as affordably as possible, utilizing it exclusively within research institutions would require a license fee of 900 euros per license.* ***Establishing the national data aggregation and processing system would minimize the burden on individual institutions.***

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