Survey Analysis

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Overview

The following plots give a top-level overview over the responses to all questions, grouped by topics. They are also differentiated between questions that were about the extent of agreement with certain statements and questions that asked about the estimated frequency with which certain practices occur at the institution. The survey was conducted in three waves in three subsequent years, but all responses are combined for the overview plots.

Research

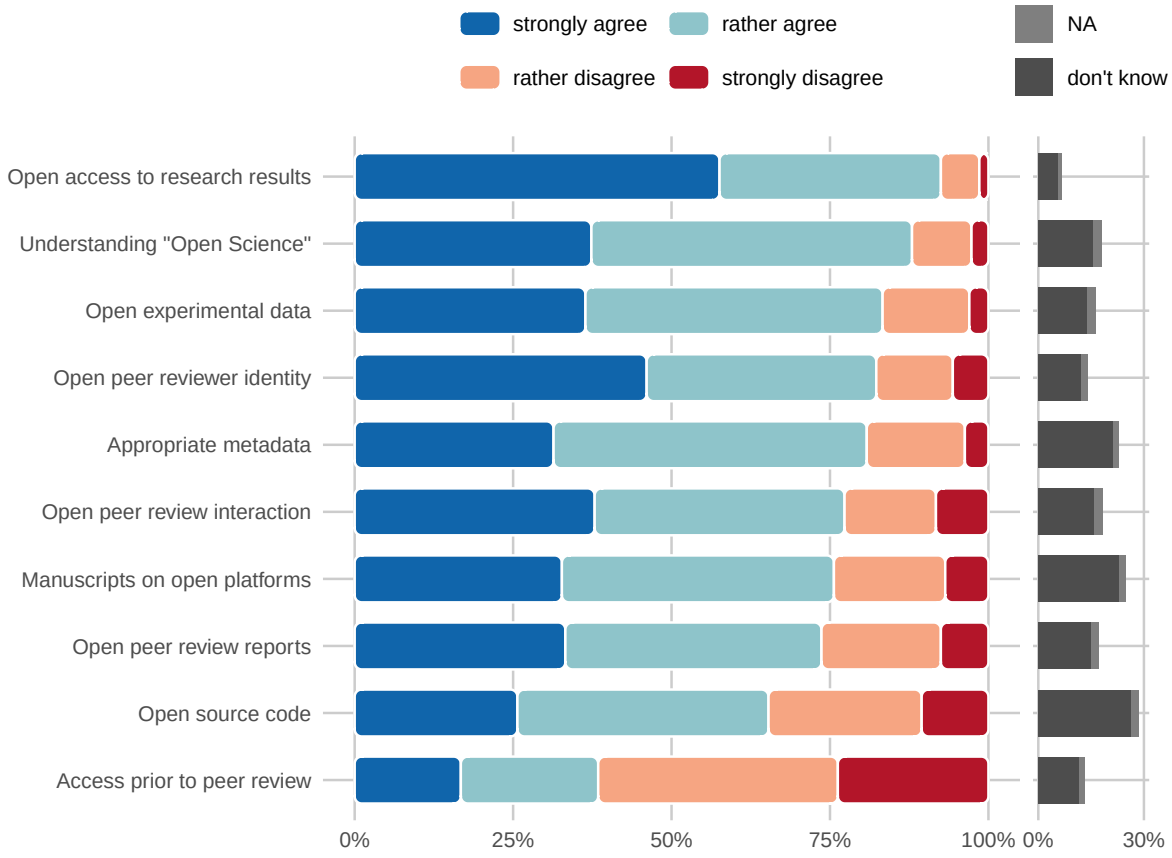
Open Science

Multiple questions within the survey inquired about how much participants agreed with certain statements related to different Open Science practices. The full statements in this group are presented in the table below.

var_id	var_full	var_short
X38	Research results should be in open access, i.e. freely available to the academic community and the general public.	Open access to research results
X39	Research papers should be openly available even before the official peer review process, i.e. before a thorough review of their content.	Access prior to peer review
X42	Researchers should publish author's versions of manuscripts on open online resources such as Zenodo, institutional repositories, etc.	Manuscripts on open platforms
X43	Researchers should invest time in describing their experimental data with appropriate metadata so that the data can be easily found and reused.	Appropriate metadata
X45	Experimental data should be published as openly as possible.	Open experimental data

var_id	var_full	var_short
X46	If software development is part of a research project, the source code should be published alongside the relevant scientific papers.	Open source code
X48	The names of peer reviewers of research papers should be made public, regardless of whether their conclusion is positive or negative.	Open peer reviewer identity
X49	The texts of positive and negative peer reviews of research papers should be published alongside these papers.	Open peer review reports
X50	Authors of research papers and peer reviewers should be able to communicate directly without intermediaries.	Open peer review interaction
X52	I can explain what "open science" is.	Understanding "Open Science"

In the following figure, responses are visualized to the Open Science questions. They are sorted by the amount of agreement with these statements. Proportions of the different answer categories were calculated after removing missing and "don't know" responses. These responses are plotted separately on the right hand side, indicating their percentage of the total responses.



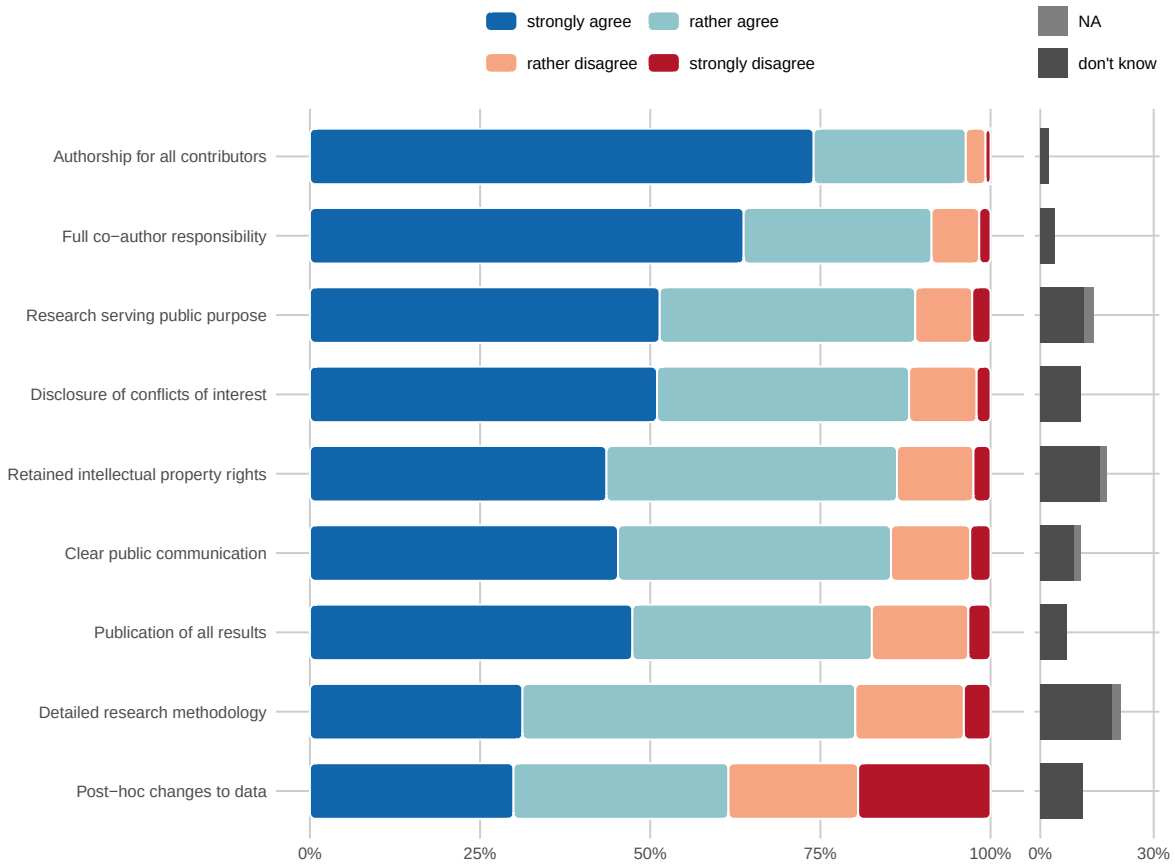
Reporting and Academic Integrity

Nine items inquire about the agreement with statements related to reporting and academic integrity. The full items are presented in the table below.

var_id	var_full	var_short
X17	Researchers should publish all research results (both positive and negative)	Publication of all results
X18	All co-authors are fully responsible for the content of the publication, regardless of the amount of their contribution	Full co-author responsibility
X19	Changes to experimental data after the end of the experiment are acceptable	Post-hoc changes to data
X20	It is necessary to indicate the authorship of all those who have contributed to the research without exception	Authorship for all contributors

var_id	var_full	var_short
X21	Researchers should report any conflicts of interest when publishing research results and applying for funding	Disclosure of conflicts of interest
X40	Authors should retain intellectual property rights to their published works, even at the cost of giving up some opportunities for free publication	Retained intellectual property rights
X41	Scholars should explain the results of their research to the general public in an understandable way.	Clear public communication
X44	Time should be invested in describing research methodology, tools, and experimental results in detail so that other researchers can reproduce them.	Detailed research methodology
X47	Researchers should always strive to ensure that their research serves a broad public purpose, regardless of the field of science in which they work.	Research serving public purpose

Caution: Question X19 ("Changes to the experimental data […] are acceptable") is the only statement phrased in the opposite direction. This needs to be considered when interpreting the responses.

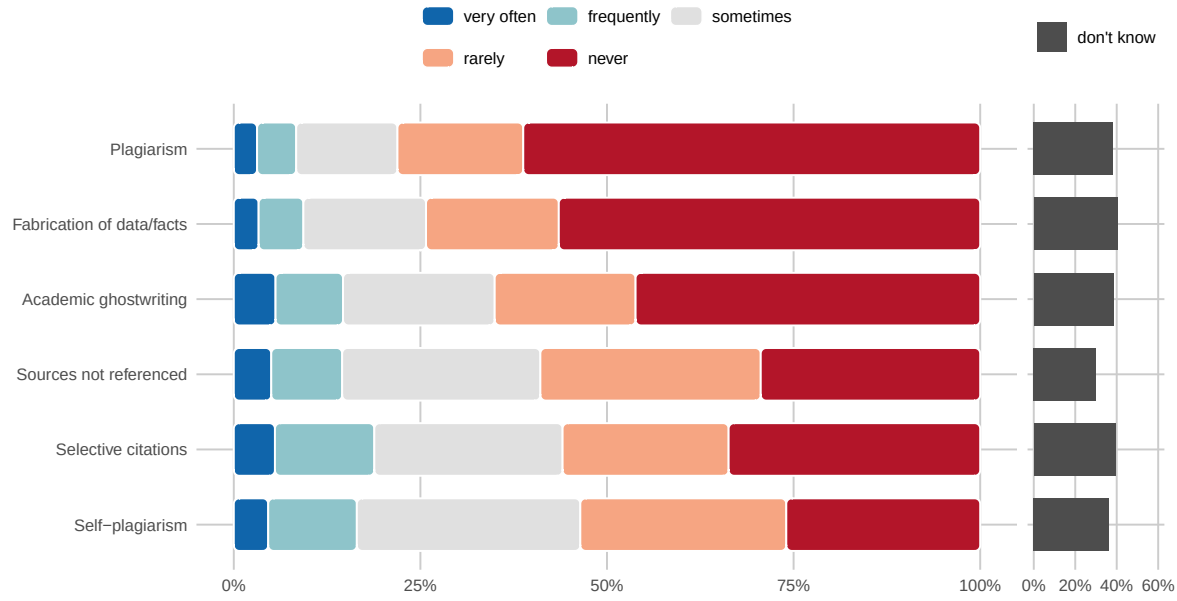


Six questions were about the frequency with which certain questionable research practices around reporting occur at the respondent's institution (see table below).

var_id	var_full	var_short
X24	Using other author's published papers and ideas without proper reference to the original source.	Sources not referenced
X25	The author uses his own previous publications as part of a new work without proper acknowledgment or citation of the original.	Self-plagiarism
X26	Making up data or facts about a scientific activity, for example, a research experiment.	Fabrication of data/facts
X27	Selective citations to support one's conclusions or to please editors, reviewers, colleagues, etc.	Selective citations
X28	The author passes off other people's academic achievements as his own.	Plagiarism

var_id	var_full	var_short
X29	A person attributes to himself or herself the authorship of a work (assignment, article, etc.) that he or she did not actually perform, but arranged for others to perform it for a fee or in another way.	Academic ghost-writing

The following overview plot is sorted by the proportion of "never" and "rarely" responses. These questions could not be skipped, therefore there are no missing answers.

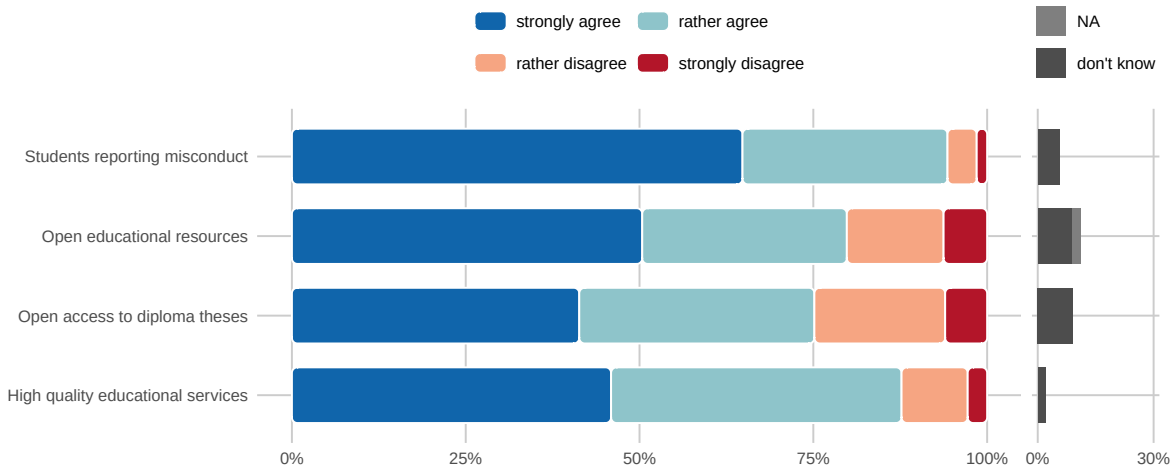


Education

While most questions referred to research, others focused more on education at the respective HEI. Respondents were inquired about their agreement with certain education-related statements (see table below), most of them also related to Open Science, but in an educational context.

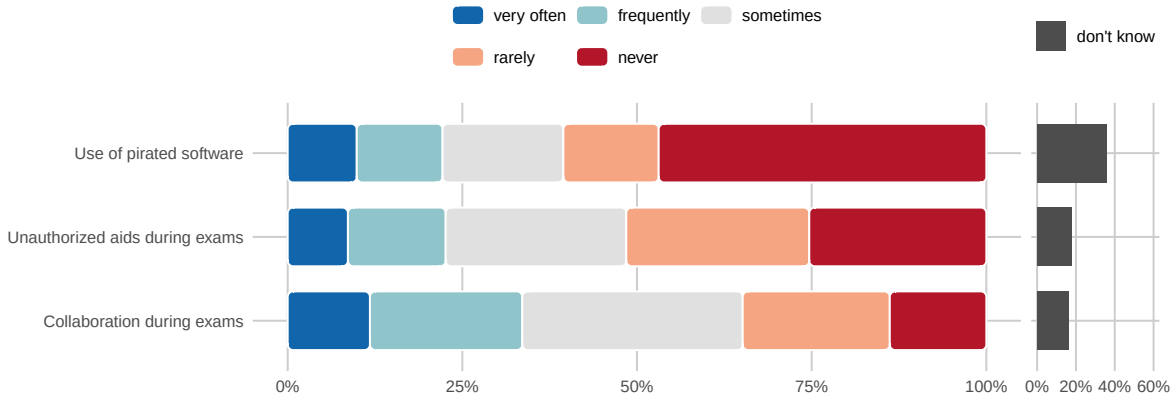
var_id	var_full	var_short
X16	The quality of educational services at my higher education institution is high	High quality educational services
X22	Students should openly publish the full texts of their diploma theses	Open access to diploma theses

var_id	var_full	var_short
X23	Students must understand what constitutes inappropriate academic behavior and report it to the appropriate authorities	Students reporting misconduct
X51	Higher education institutions should provide open access to their educational resources (textbooks, manuals, various digital tools, etc.) for everyone.	Open educational resources



The occurrence of three different types of student misconduct were also investigated within the survey (see table and figure below).

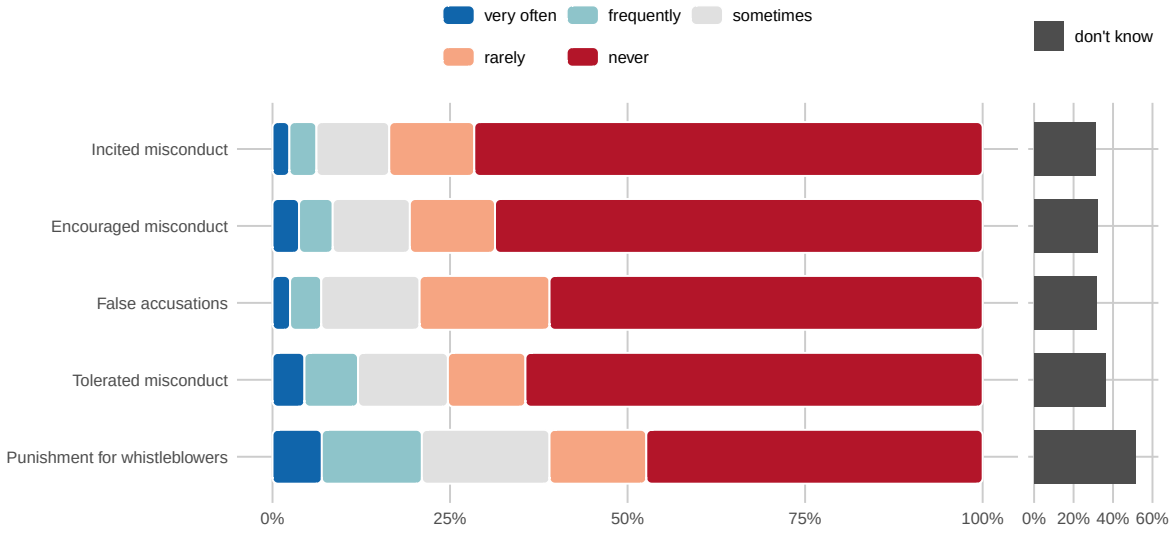
var_id	var_full	var_short
X30	Students help each other during exams or tests.	Collaboration during exams
X31	Students use cheat sheets, smartphones, or other means of cheating during exams or tests.	Unauthorized aids during exams
X32	Students and teachers use unauthorized software (so-called “pirated software”).	Use of pirated software



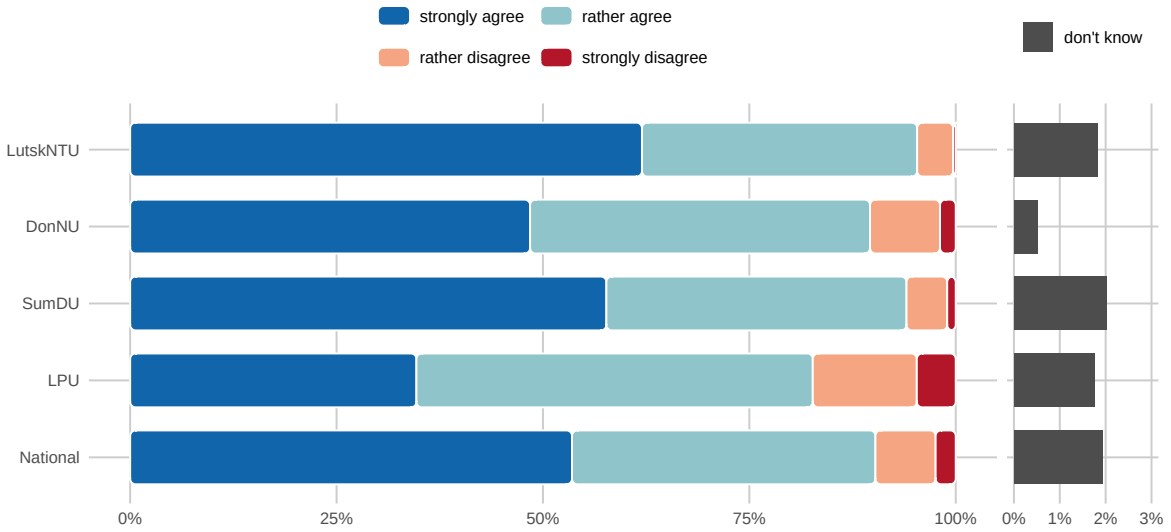
Institution/Administration

The survey contained five questions on how misconduct is handled at the respondent's respective institution. Respondents indicated the frequency with which certain practices occurred at their institution.

var_id	var_full	var_short
X33	Incitement to violate academic integrity.	Incited misconduct
X34	The administration of the institution tolerates cases of academic dishonesty.	Tolerated misconduct
X35	Falsely accusing a student or employee of misconduct or other violations.	False accusations
X36	Abuse of official position or authority to encourage academic dishonesty.	Encouraged misconduct
X37	The university administration accuses and punishes whistleblowers of academic integrity violations.	Punishment for whistleblowers



One general item also inquired about the following statement: "Overall, the processes at my higher education institution are organised in a clear and transparent manner". The agreement is visualized by the different institutional vs. the national survey.

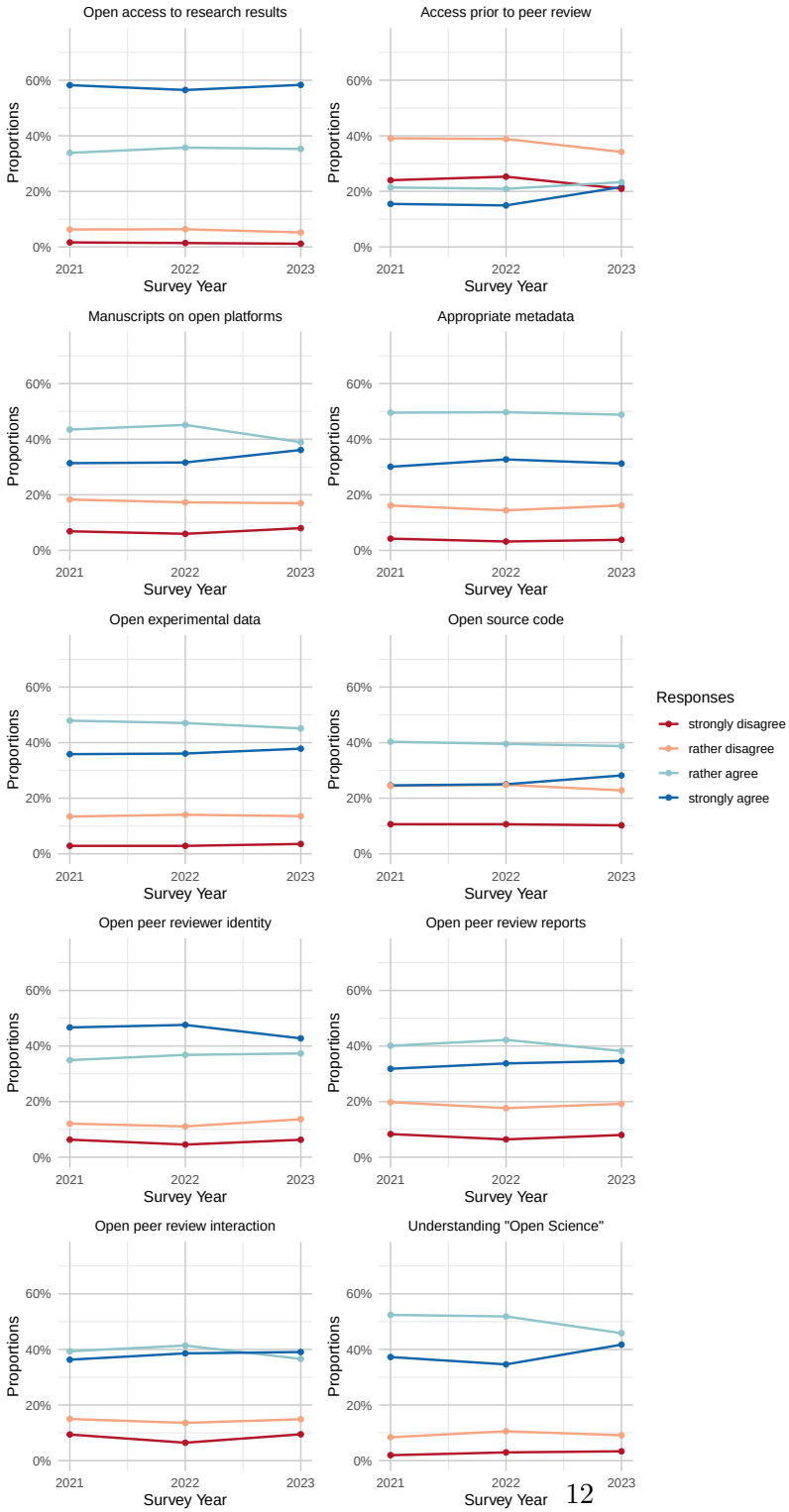


Development over Time

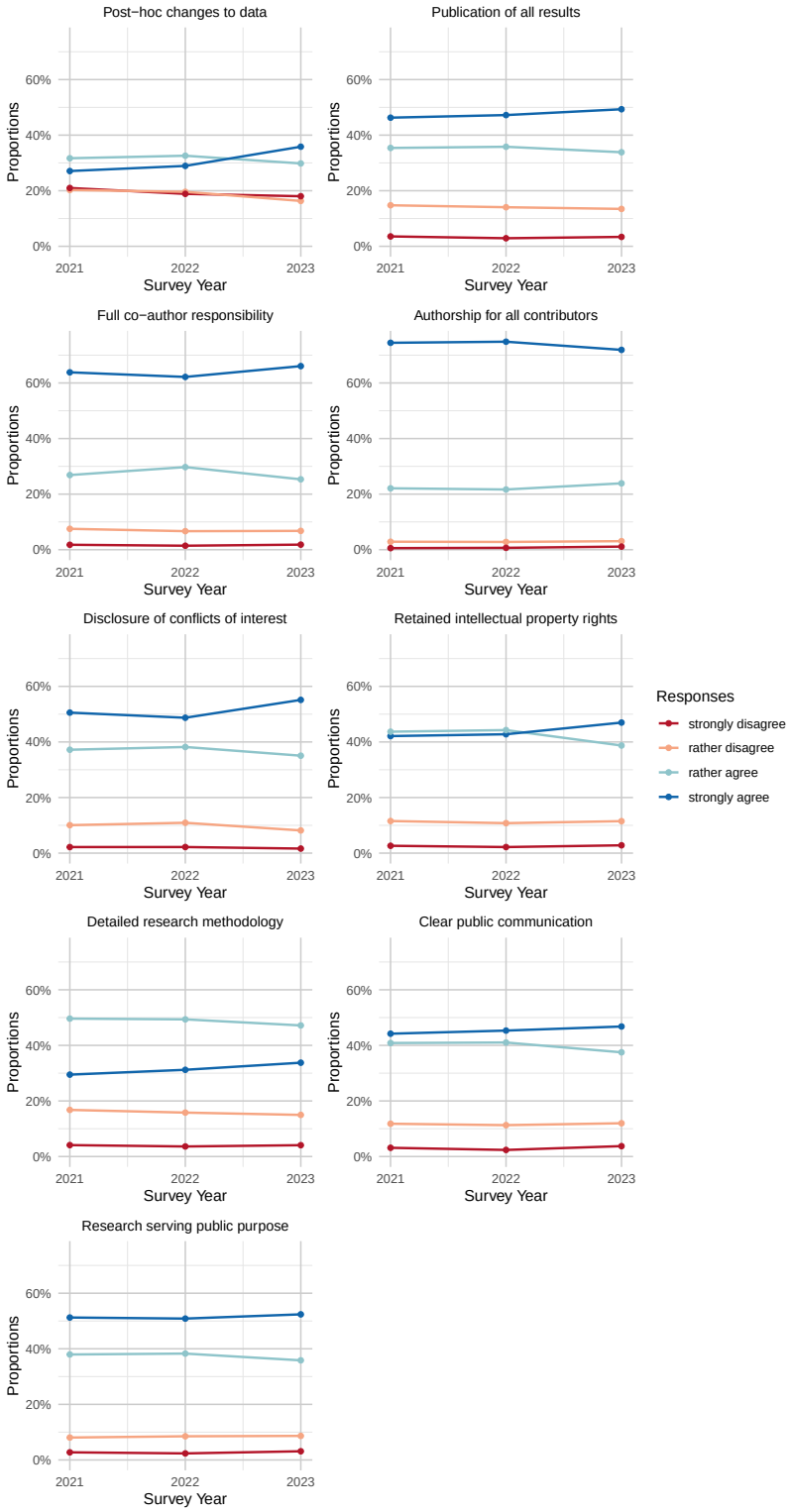
Since the survey was conducted in three separate waves (2021, 2022, 2023), responses are also compared between those years. Similar to the overview plots where "don't know" and missing responses were separated out before calculating proportions of certain response categories, these are also filtered out here. Percentages therefore refer to all respondents that chose one of the response categories presented in the figure.

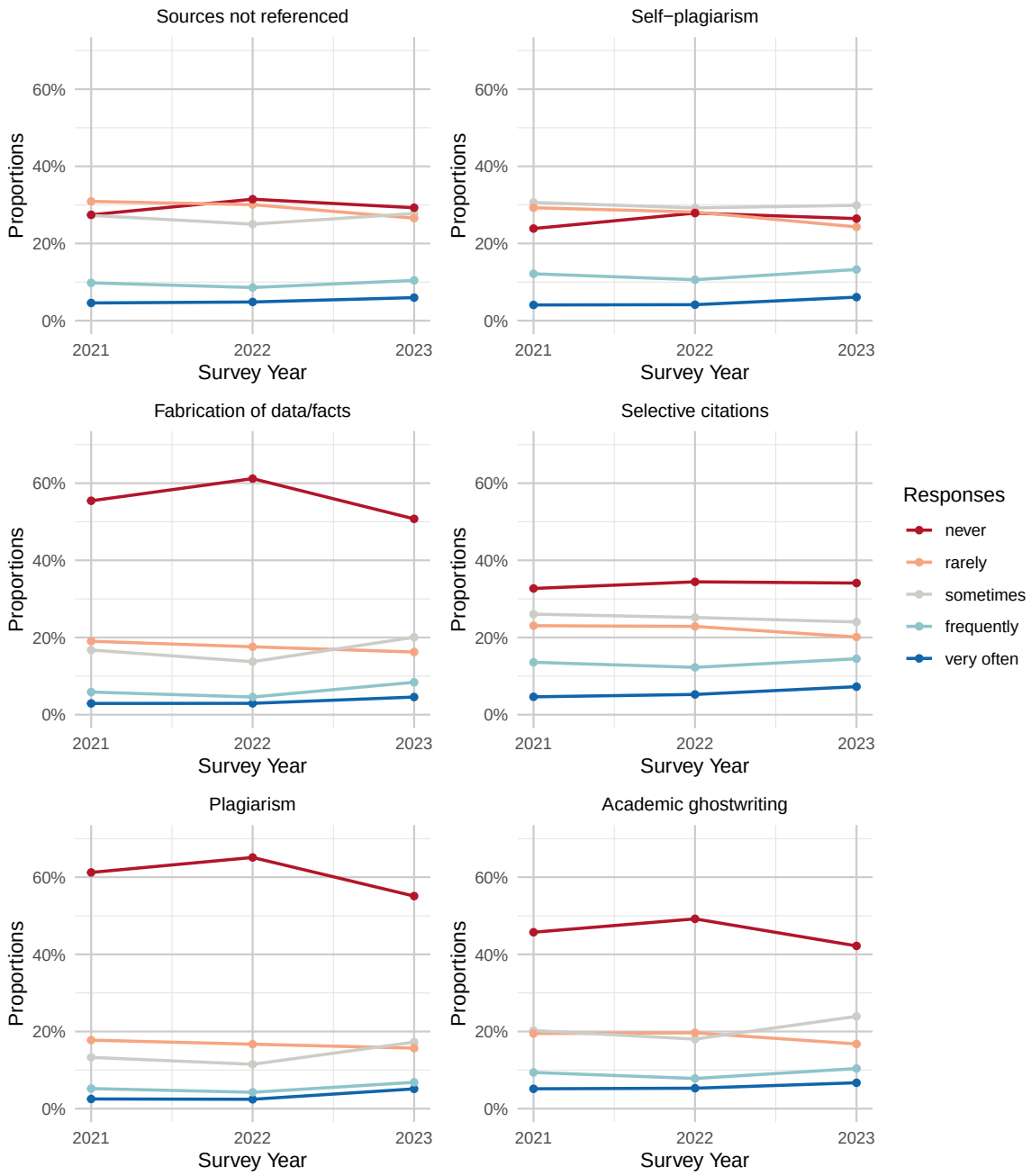
Research

Open Science

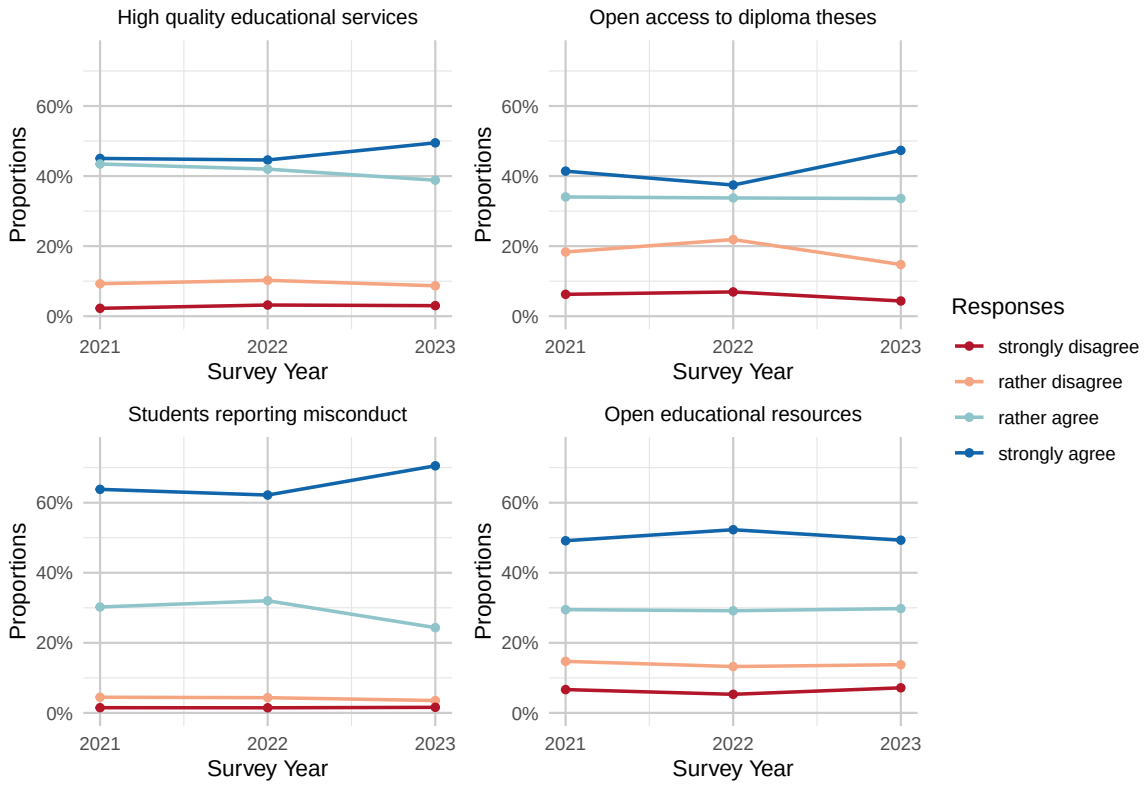


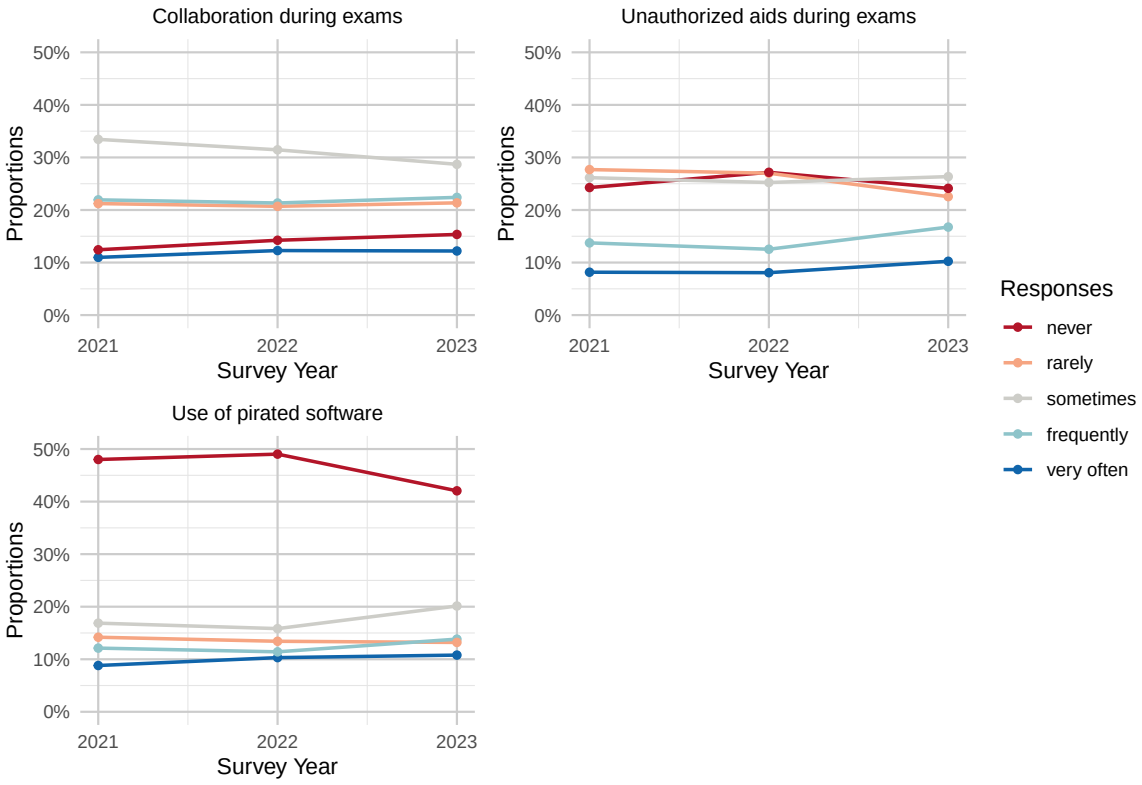
Reporting and Academic Integrity



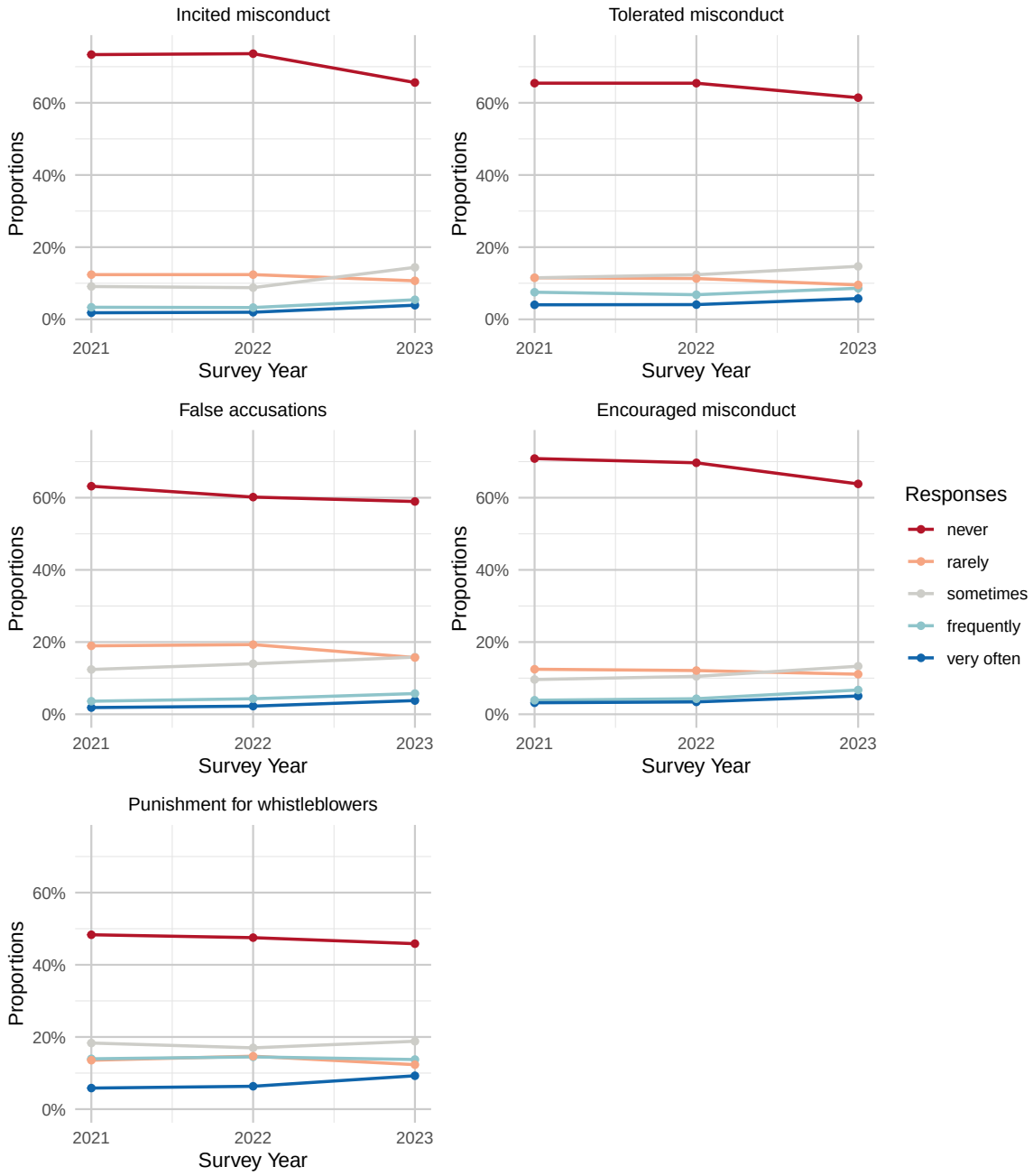

Sources not referenced
Self−plagiarism
Fabrication of data/facts
Selective citations
Plagiarism
Academic ghostwriting
Proportions
60%
40%
20%
0%
2021
2022
2023
Survey Year
Responses
never
rarely
sometimes
frequently
very often

Education

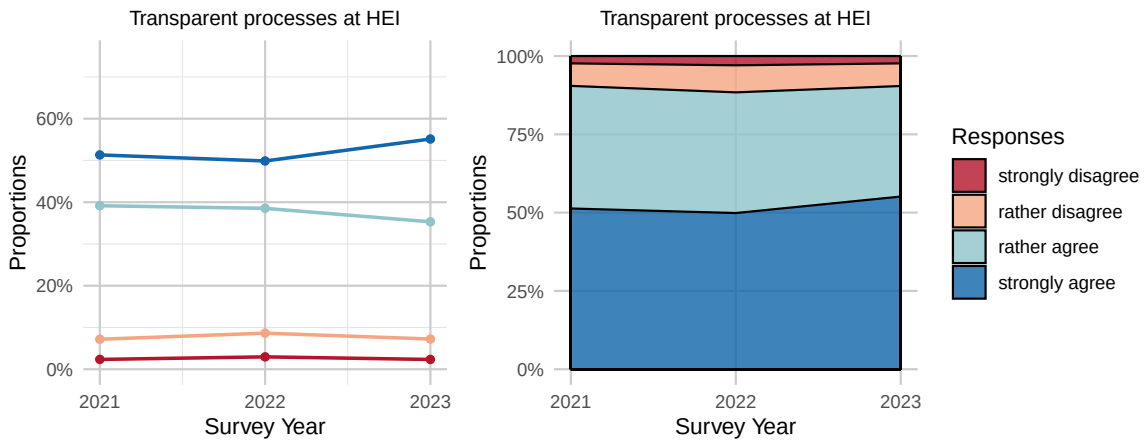

High quality educational services
Open access to diploma theses
Students reporting misconduct
Open educational resources
Proportions
0%
20%
40%
60%
2021
2022
2023
Survey Year
Responses
strongly disagree
rather disagree
rather agree
strongly agree


Collaboration during exams
Unauthorized aids during exams
Use of pirated software
Proportions
50%
40%
30%
20%
10%
0%
2021
2022
2023
Survey Year
Responses
never
rarely
sometimes
frequently
very often

Institution/Administration



An alternative plot type to the line plot is the area plot. For the following exemplary item (X15: "Overall, the processes at my higher education institution are organised in a clear and transparent manner") both plots are shown for comparison.



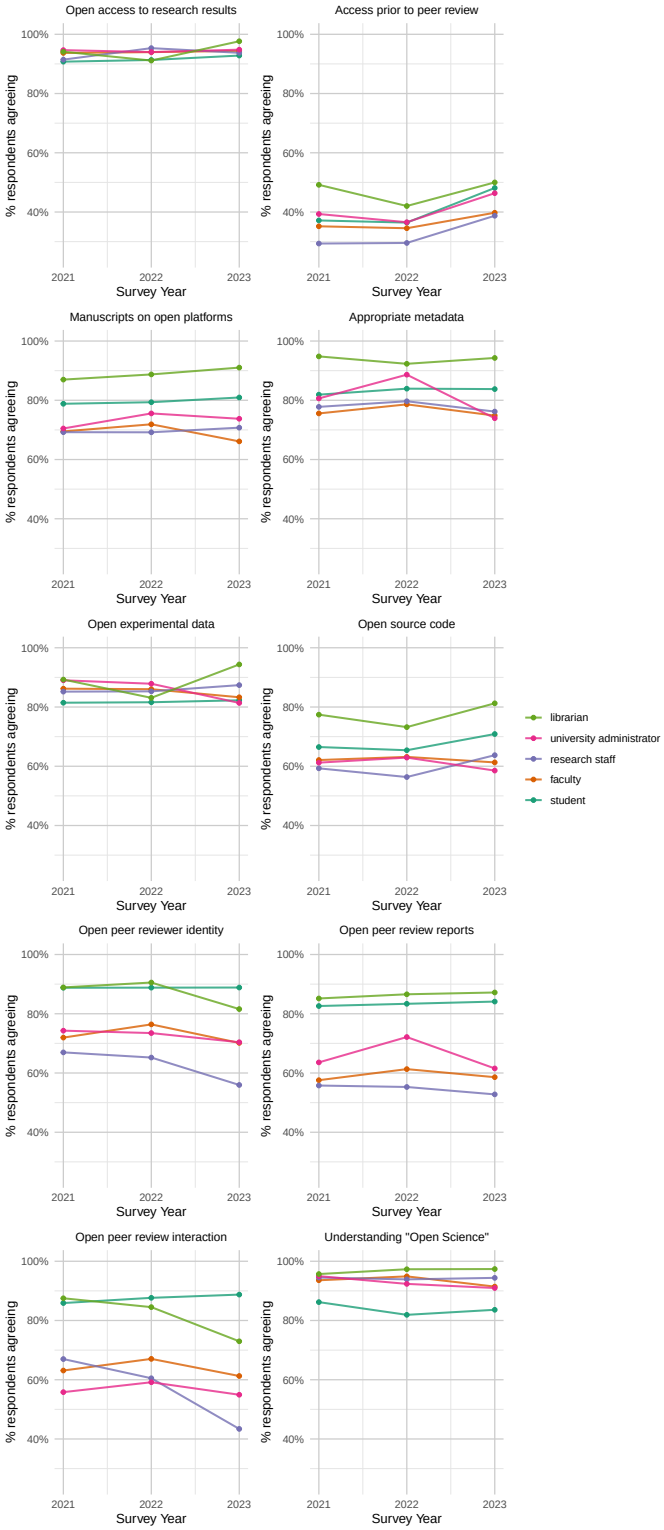
Comparison Between Groups

To compare agreement over time across groups, the responses were dichotomized into agreement ("rather agree", "strongly agree") and disagreement ("rather disagree", "strongly disagree"). This way the percentage of respondents agreeing with a certain statement can be compared across groups and over time. Frequency responses were recoded into "often" ("very often", "frequently") and "not often" ("sometimes", "rarely", "never"). Missing responses and "don't know" answers were removed before the percentages were calculated. As in the previous section, percentages refer to all respondents that chose one of the response categories presented (and not "don't know").

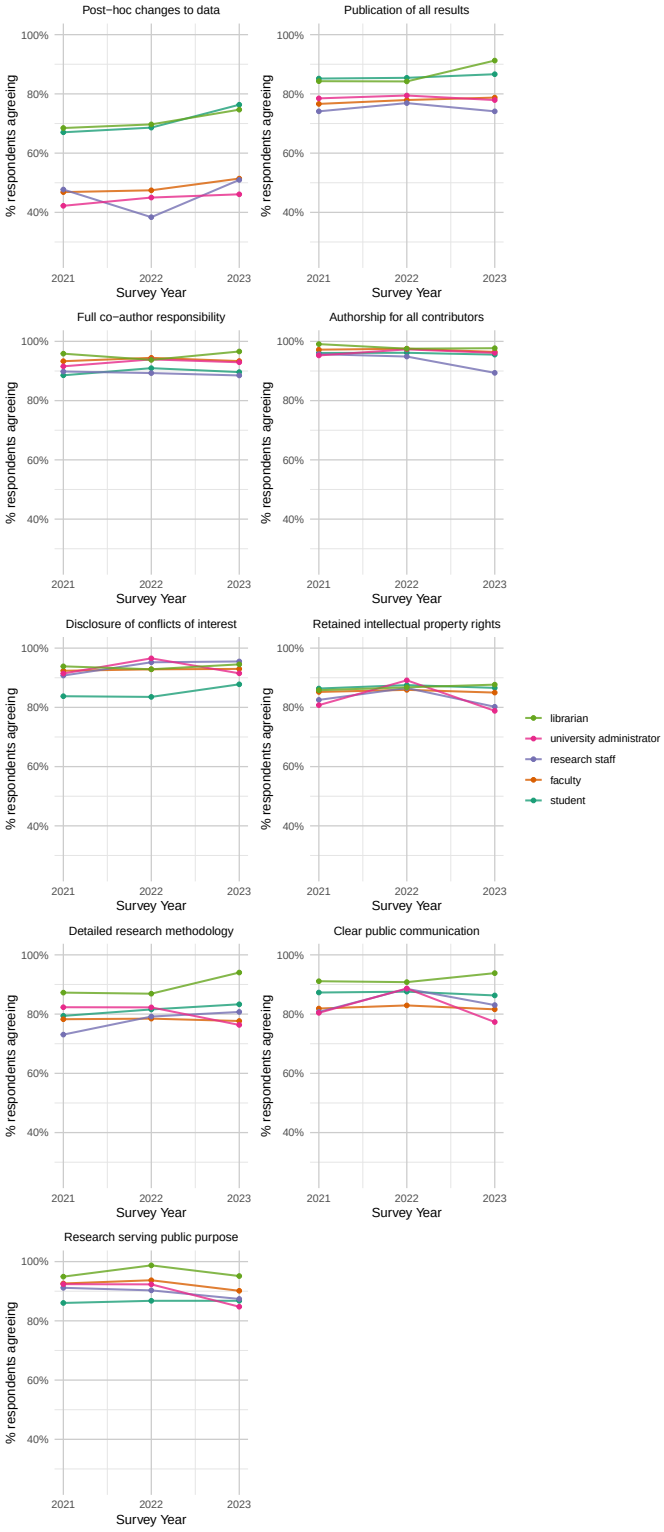
Academic Roles

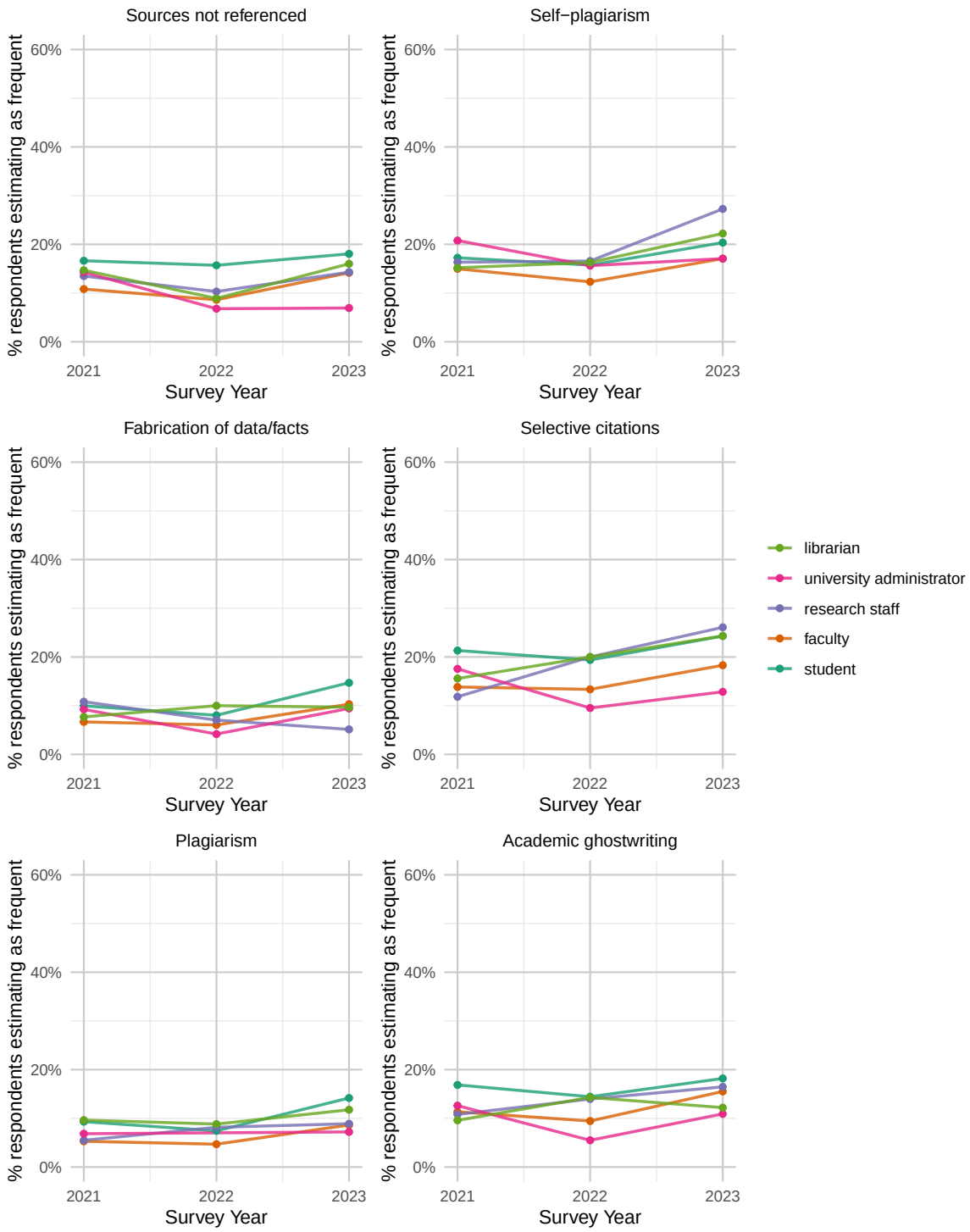
To compare respondents with different academic roles, students are first summarized for purposes of visualization (see below for differentiated visualizations for this group). The "other" category was additionally excluded, since it is quite small and difficult to characterize. Some groups differ quite substantially in their size (e.g., lot of faculty, only few librarians). This has to be taken into account for interpretation.

Open Science

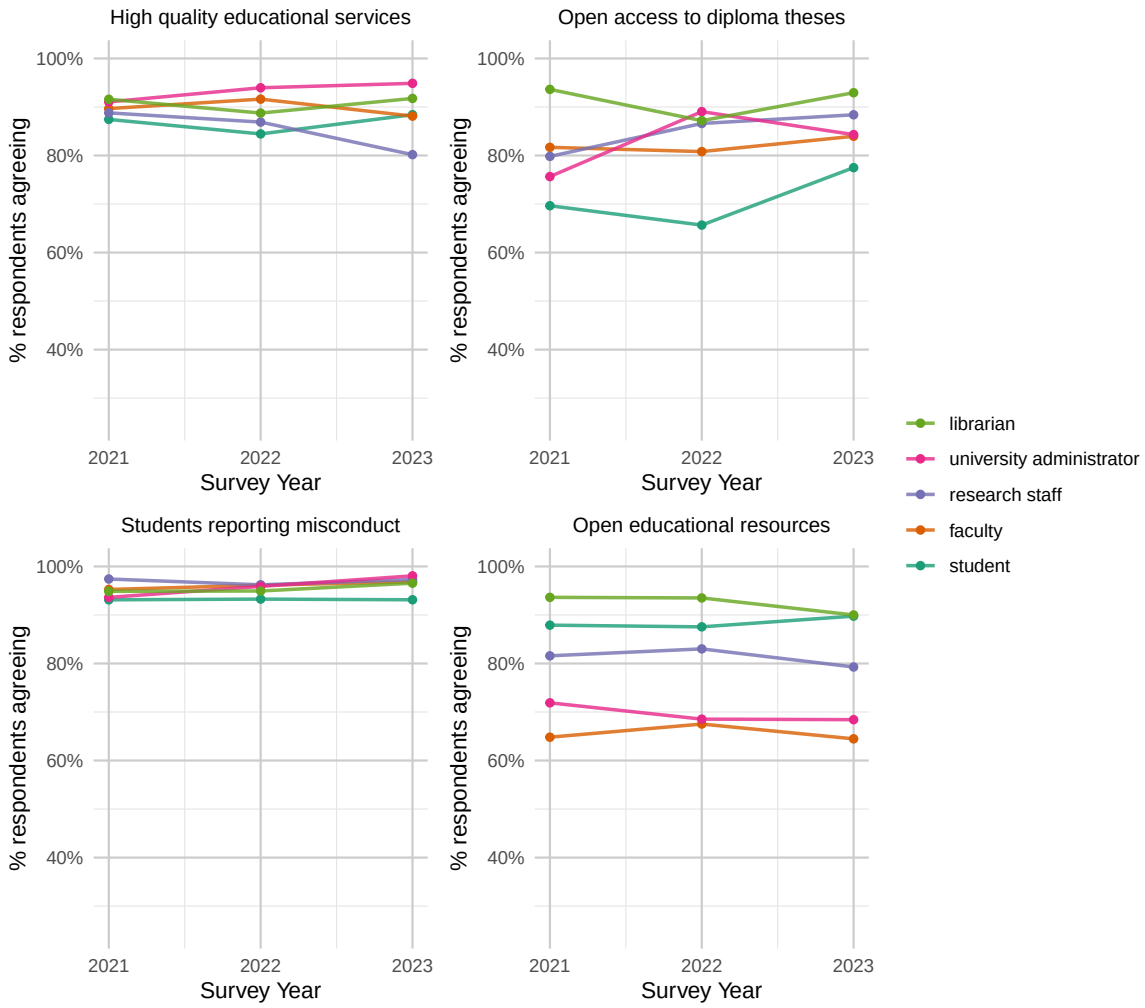


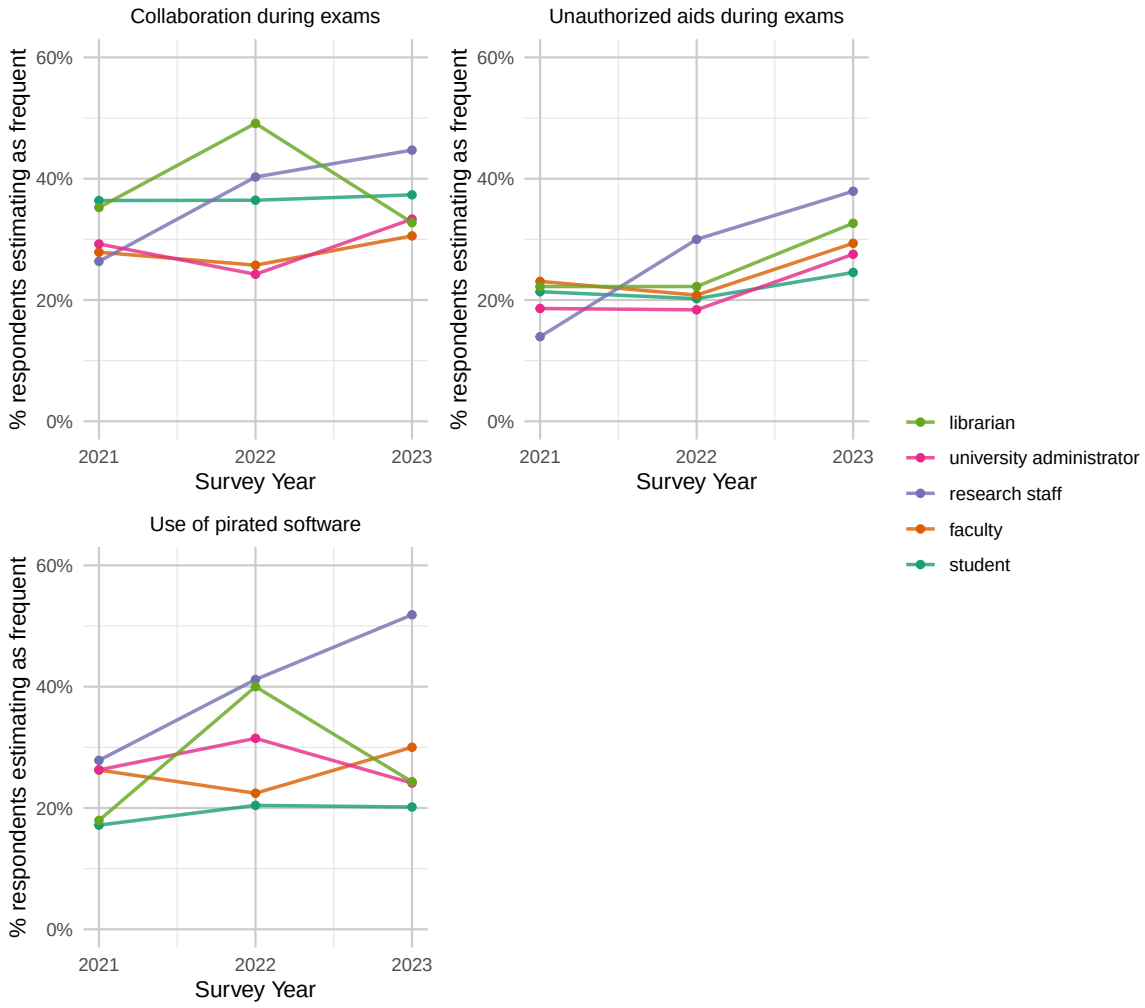
Reporting and Academic Integrity



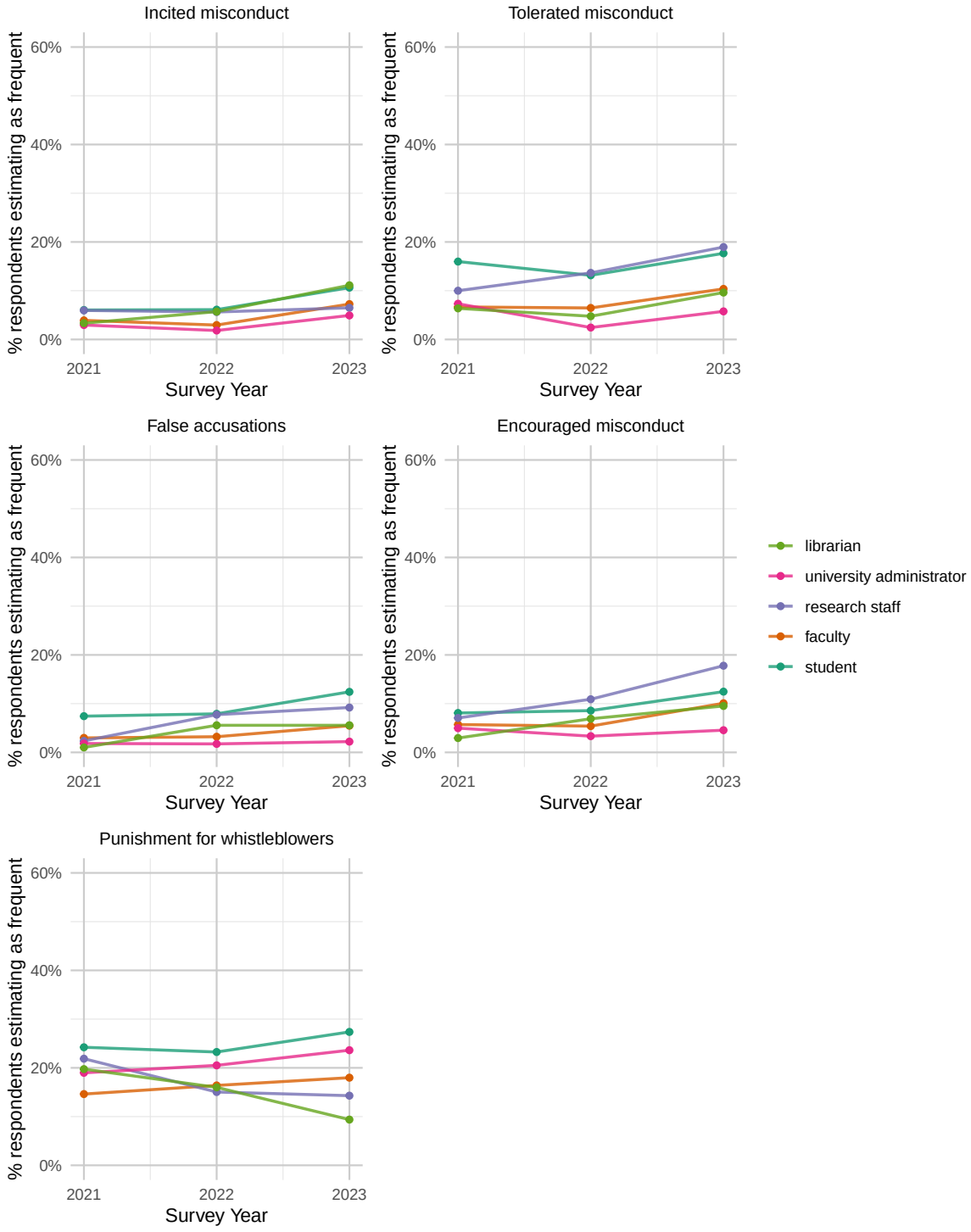

Sources not referenced
Self−plagiarism
Fabrication of data/facts
Selective citations
Plagiarism
Academic ghostwriting
% respondents estimating as frequent
60%
40%
20%
0%
2021
2022
2023
Survey Year
librarian
university administrator
research staff
faculty
student

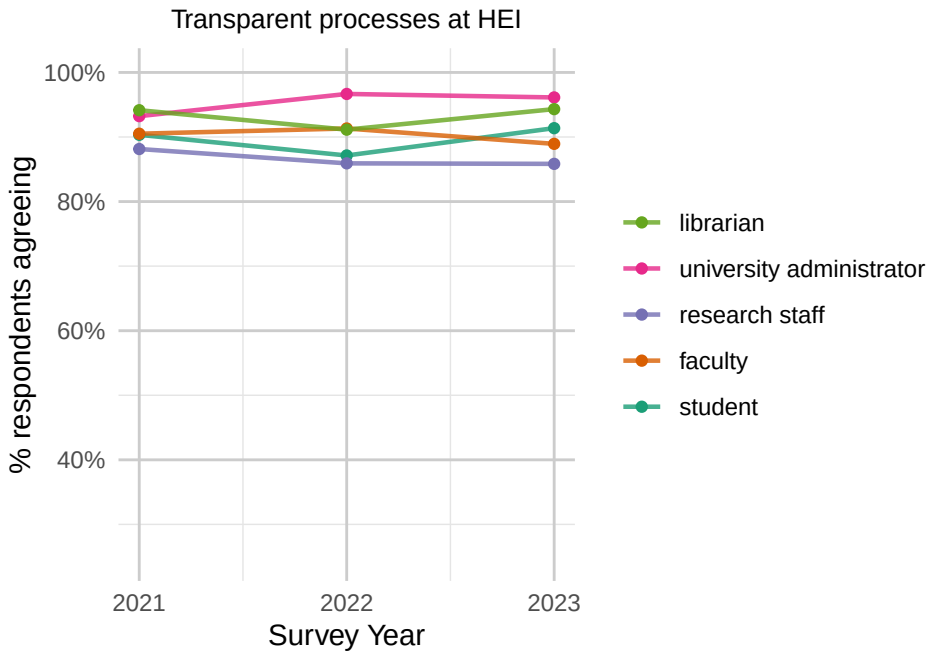
Education


High quality educational services
Open access to diploma theses
Students reporting misconduct
Open educational resources
% respondents agreeing
100%
80%
60%
40%
2021
2022
2023
Survey Year
librarian
university administrator
research staff
faculty
student


Collaboration during exams
Unauthorized aids during exams
Use of pirated software
% respondents estimating as frequent
60%
40%
20%
0%
2021
2022
2023
Survey Year
librarian
university administrator
research staff
faculty
student

Institution/Administration

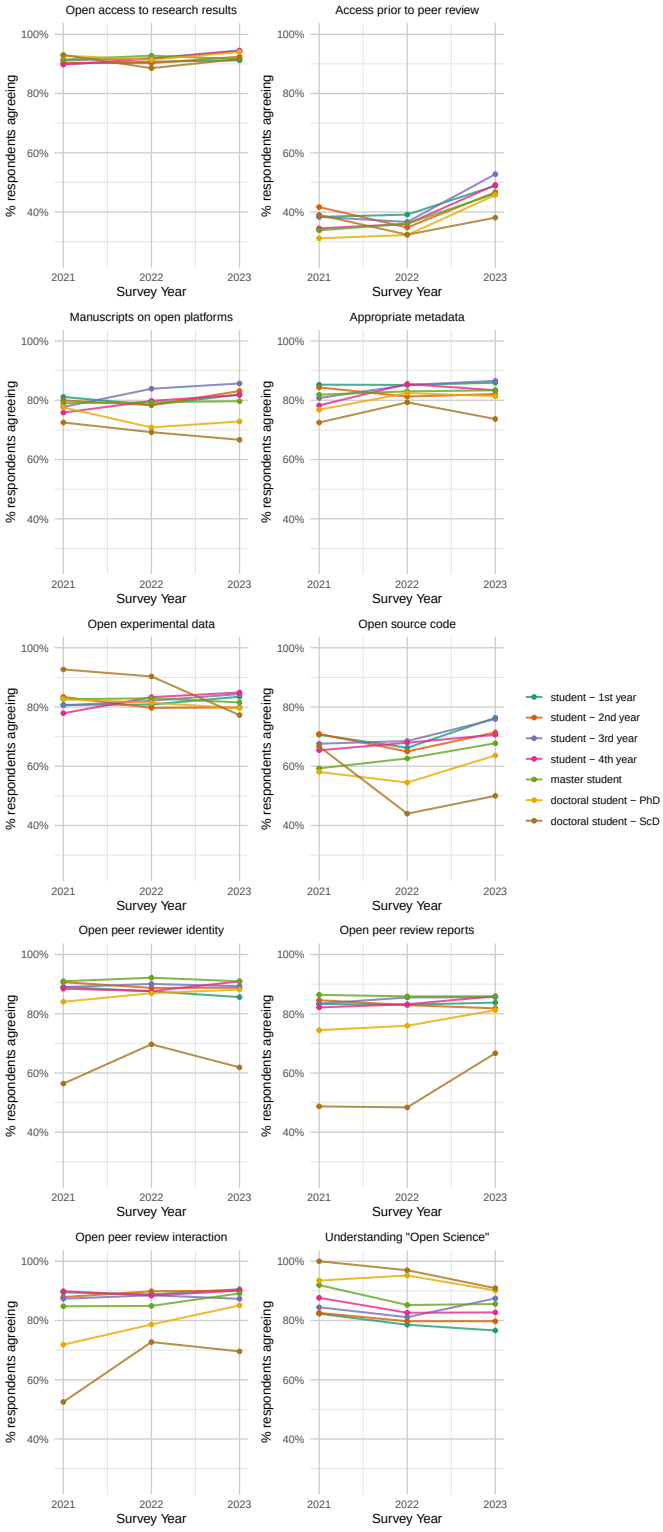




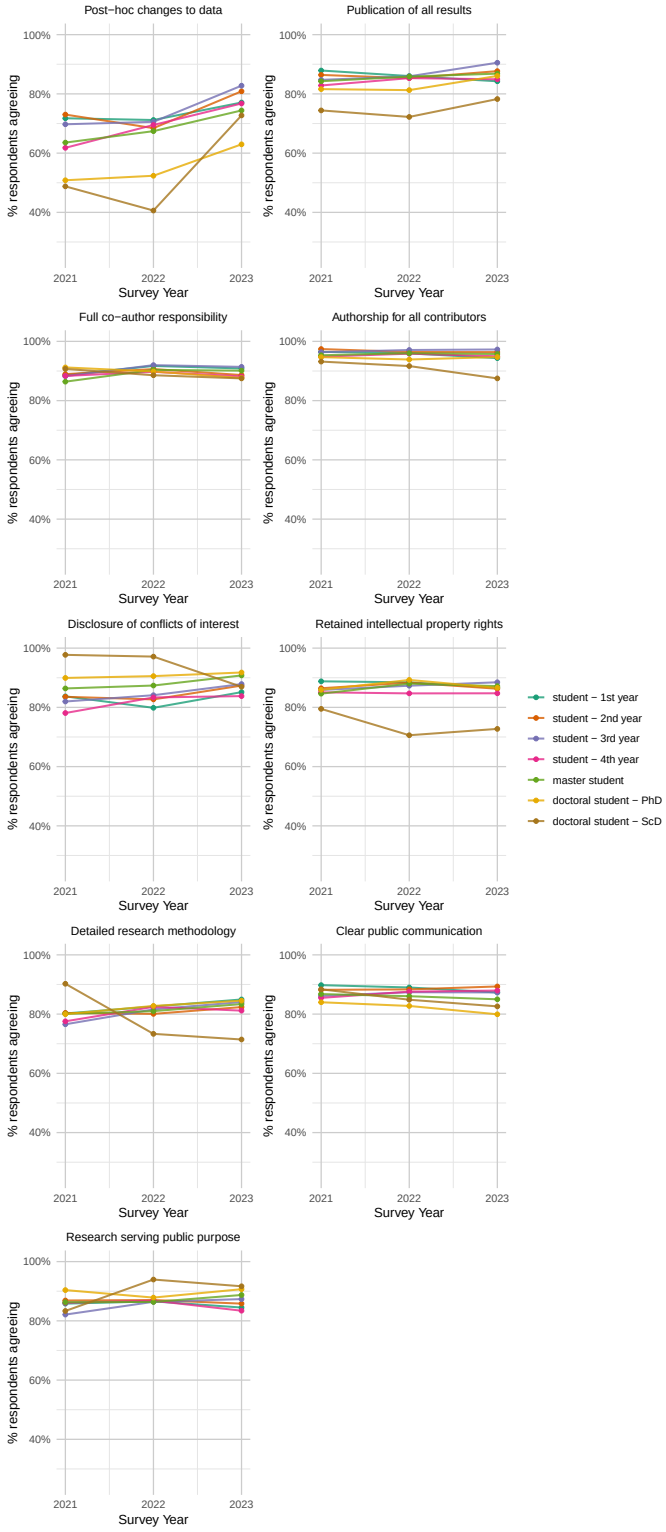
Students by Year

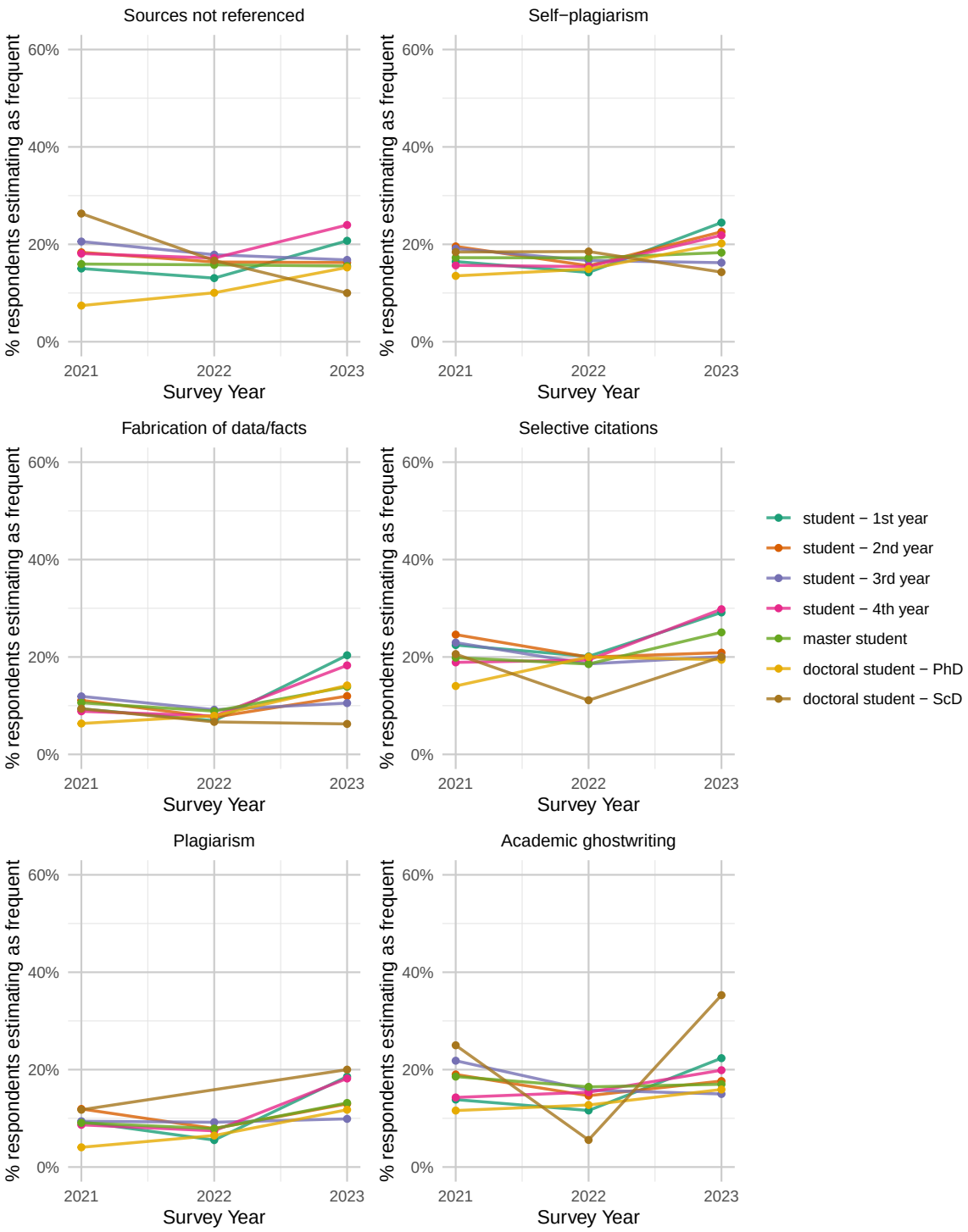
In the plots above, students were all grouped into one category. Since it is of interest how students' perceptions differ depending on the stage of their studies, they are compared more closely in the subsequent figures (these could maybe added to the appendix).

Open Science

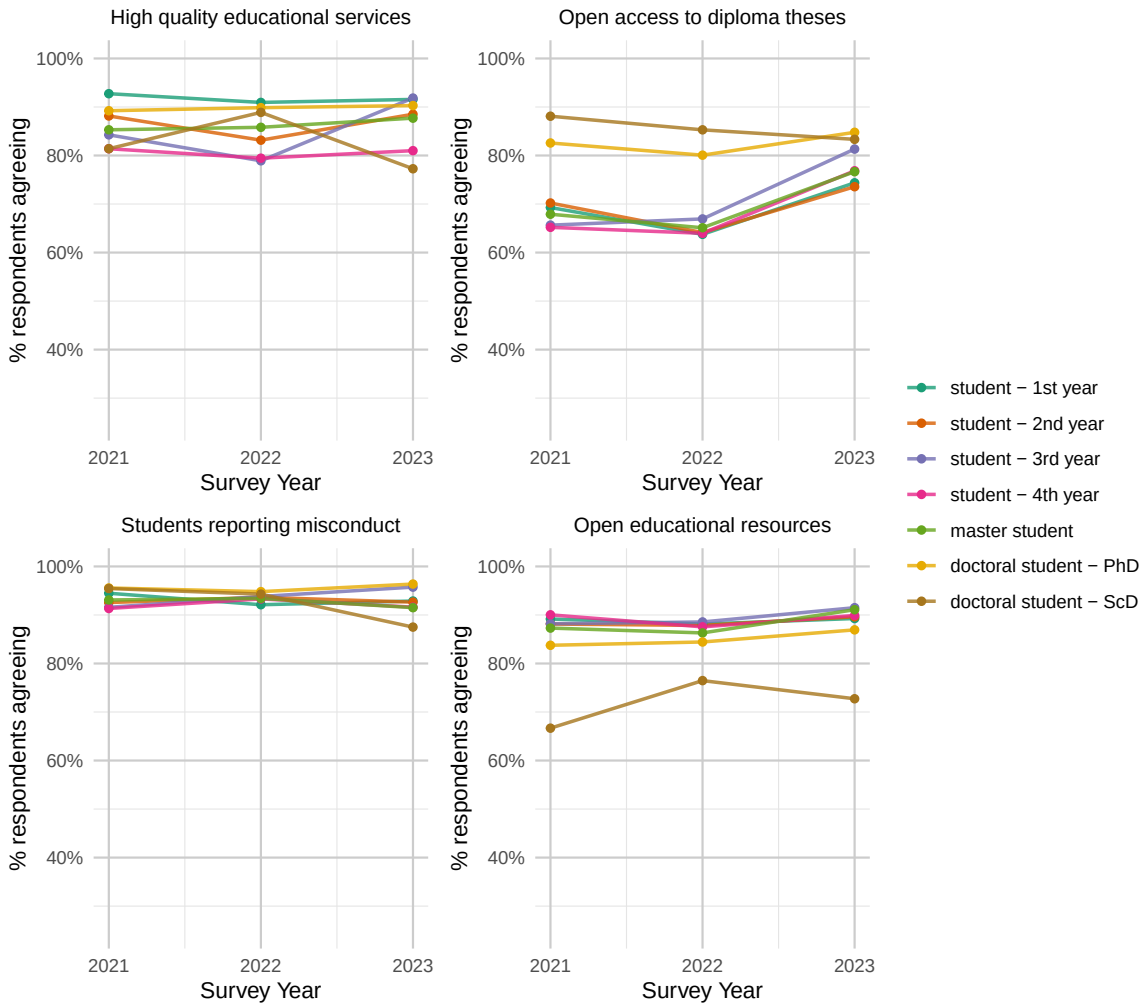


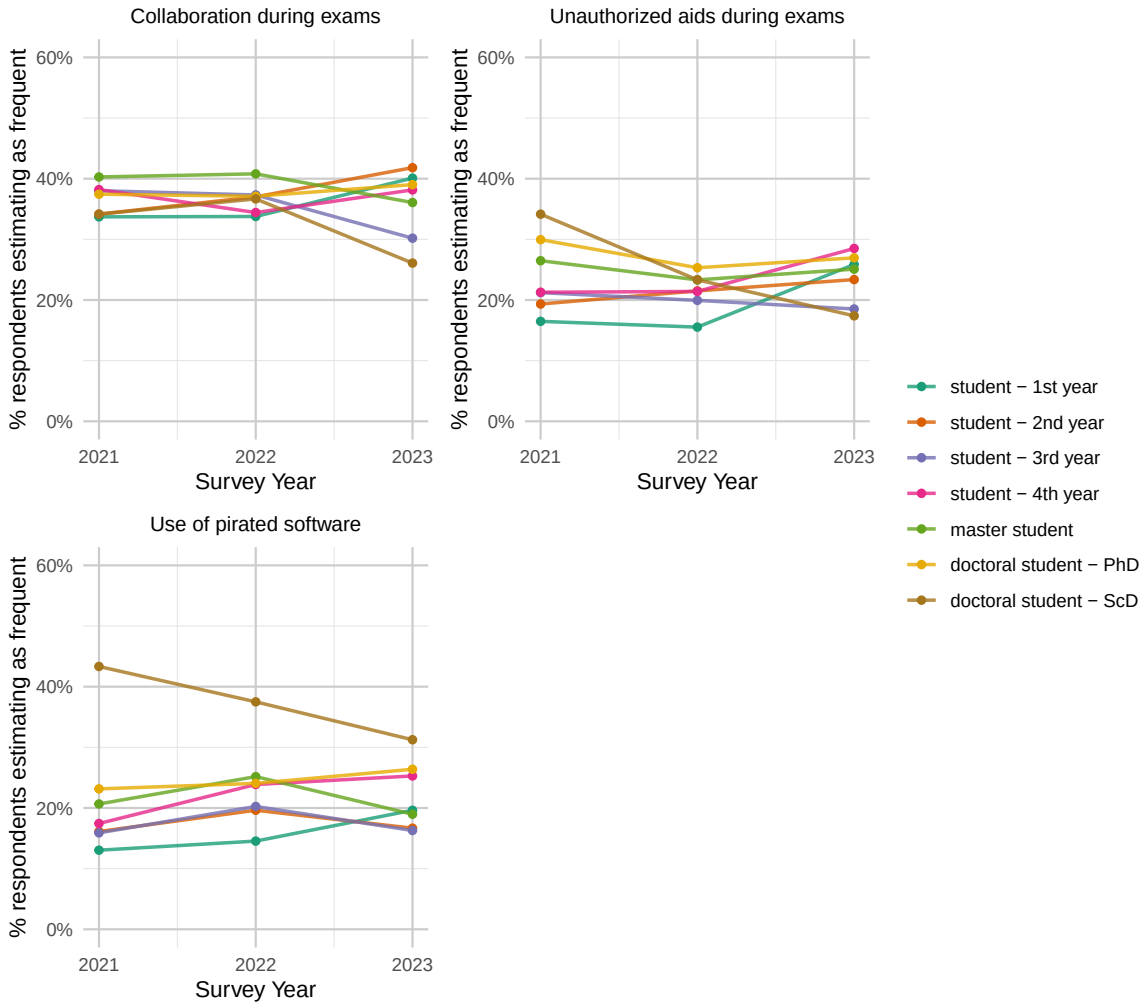
Reporting and Academic Integrity



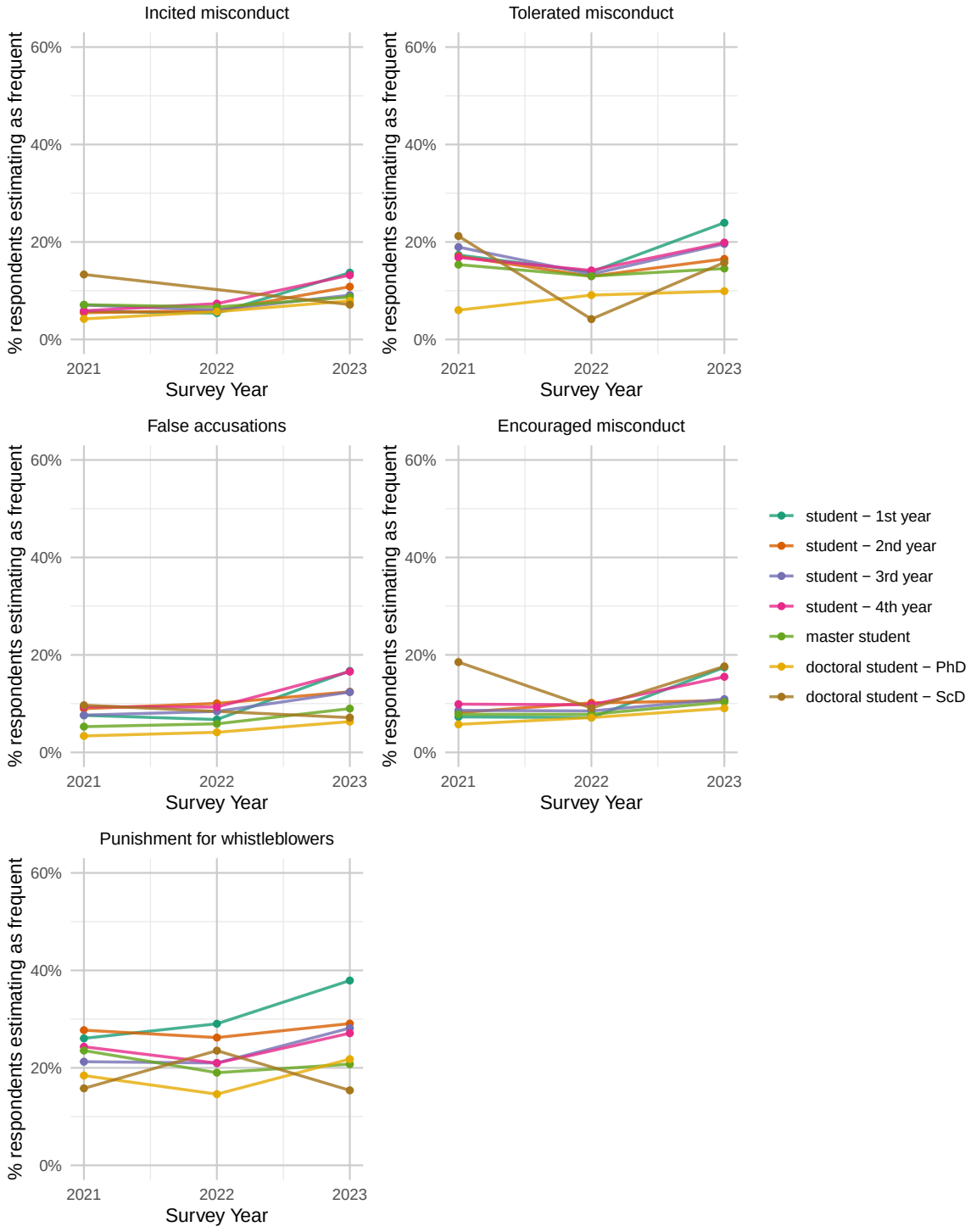

Sources not referenced
Self−plagiarism
Fabrication of data/facts
Selective citations
Plagiarism
Academic ghostwriting
% respondents estimating as frequent
0%
20%
40%
60%
2021
2022
2023
Survey Year
student − 1st year
student − 2nd year
student − 3rd year
student − 4th year
master student
doctoral student − PhD
doctoral student − ScD

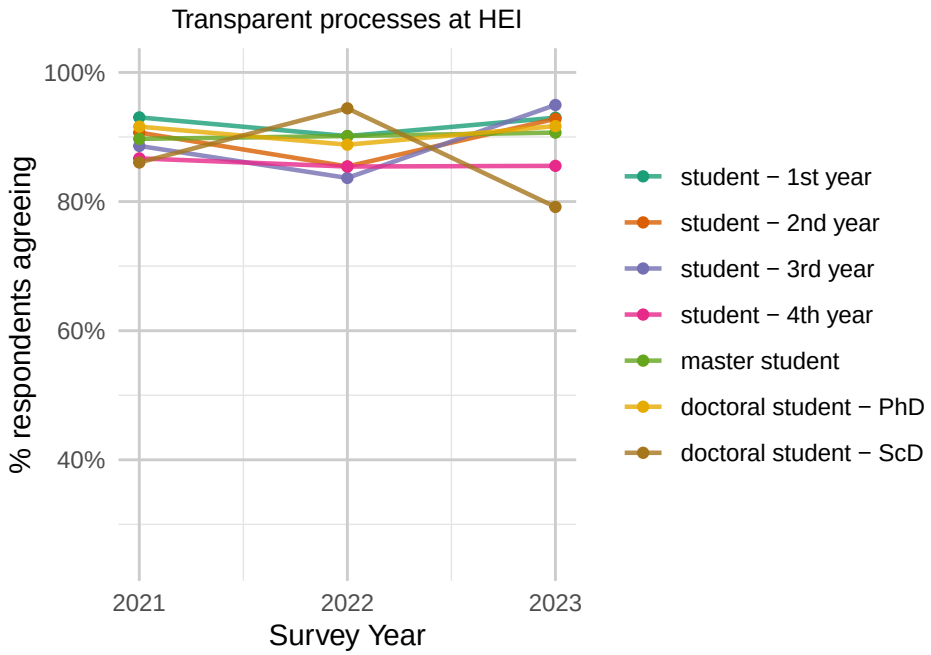
Education


High quality educational services
Open access to diploma theses
Students reporting misconduct
Open educational resources
% respondents agreeing
100%
80%
60%
40%
2021
2022
2023
Survey Year
student − 1st year
student − 2nd year
student − 3rd year
student − 4th year
master student
doctoral student − PhD
doctoral student − ScD


Collaboration during exams
Unauthorized aids during exams
Use of pirated software
% respondents estimating as frequent
60%
40%
20%
0%
2021
2022
2023
Survey Year
student − 1st year
student − 2nd year
student − 3rd year
student − 4th year
master student
doctoral student − PhD
doctoral student − ScD

Institution/Administration

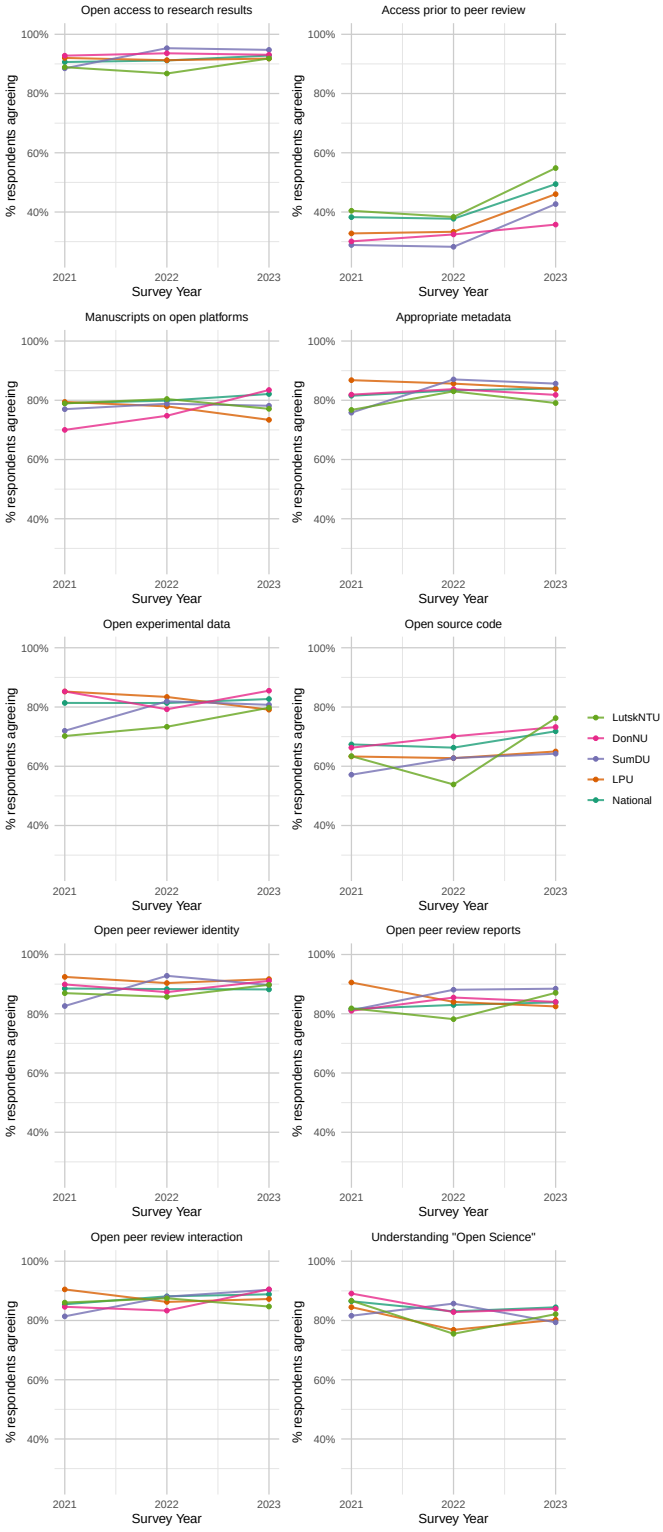




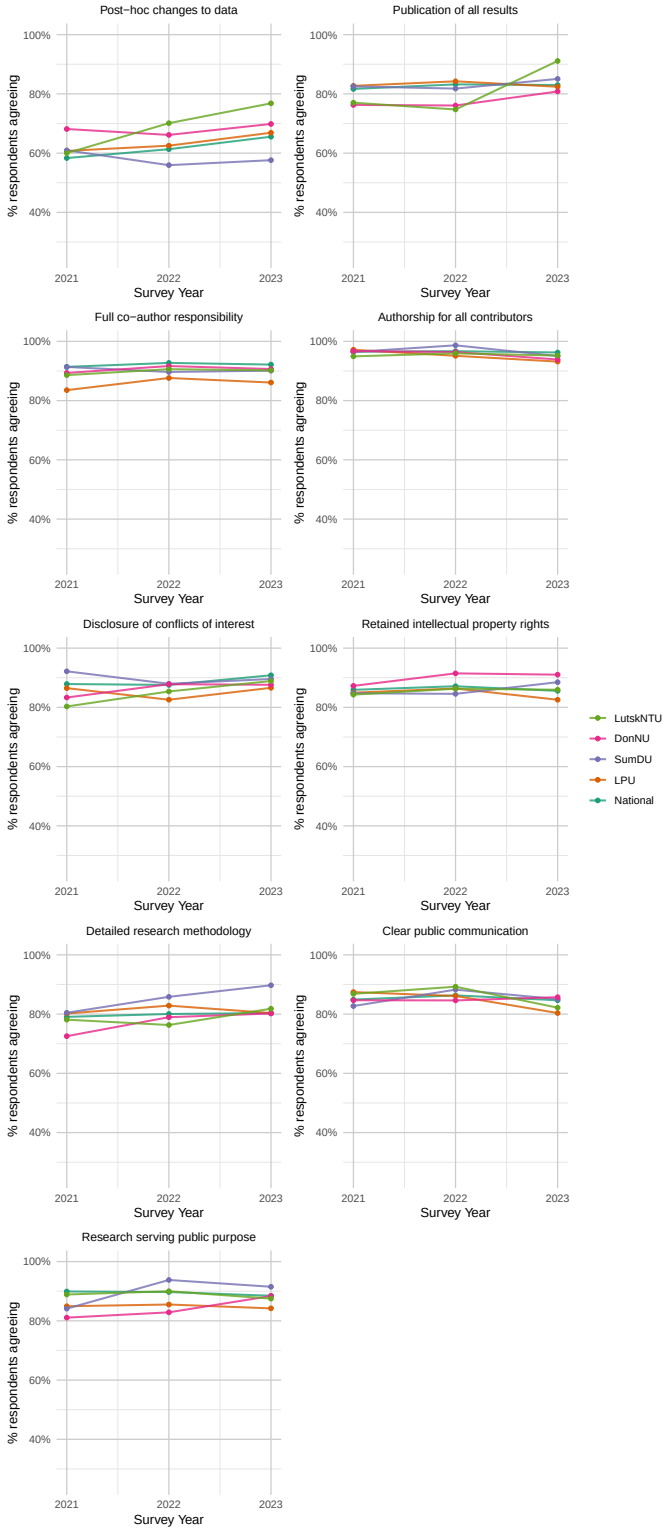
National and Institutional Surveys

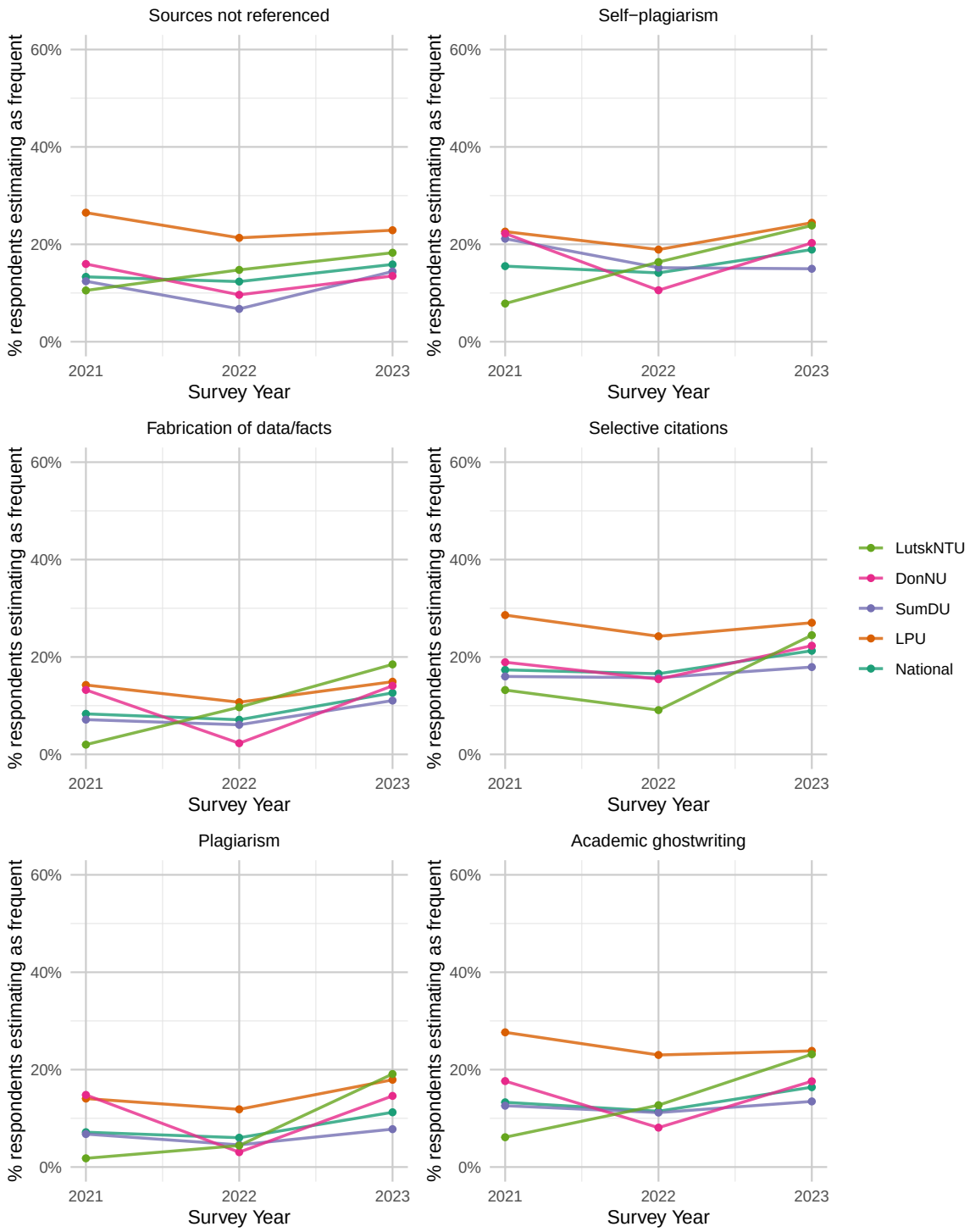
The survey was conducted both at a national level and separately within the OPTIMA partner HEIs. To compare developments over time between these surveys, following visualizations are created (again with dichotomized responses).

Open Science

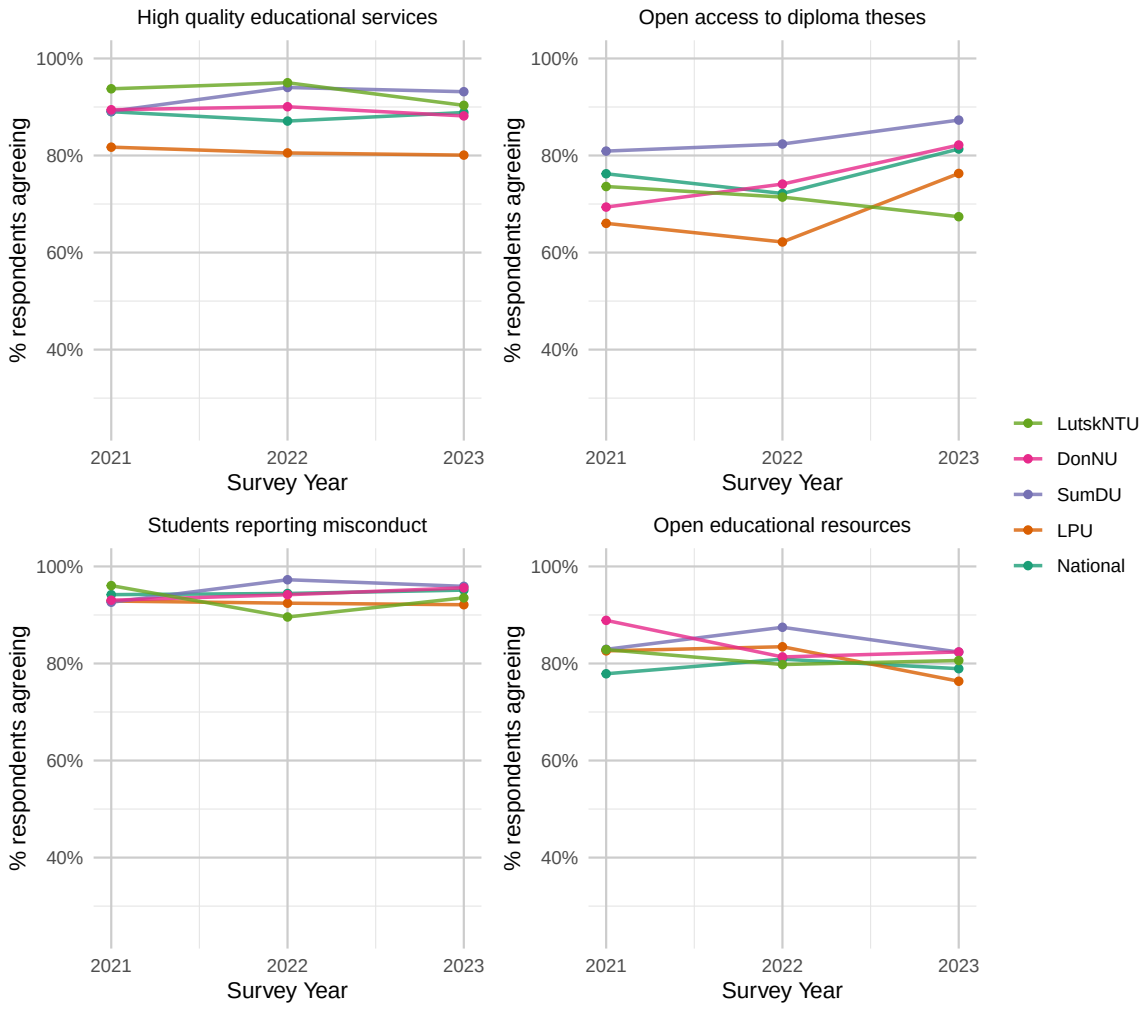


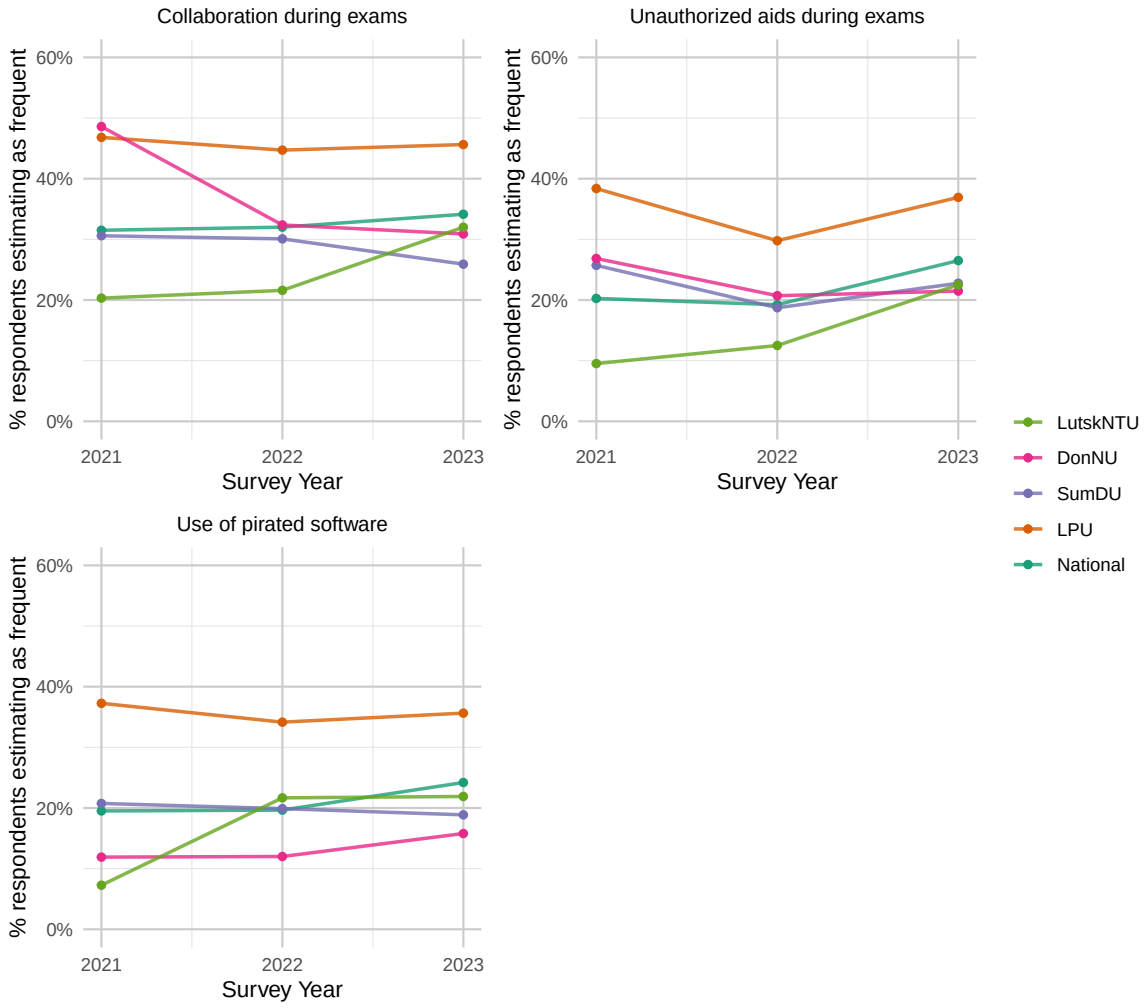
Reporting and Academic Integrity



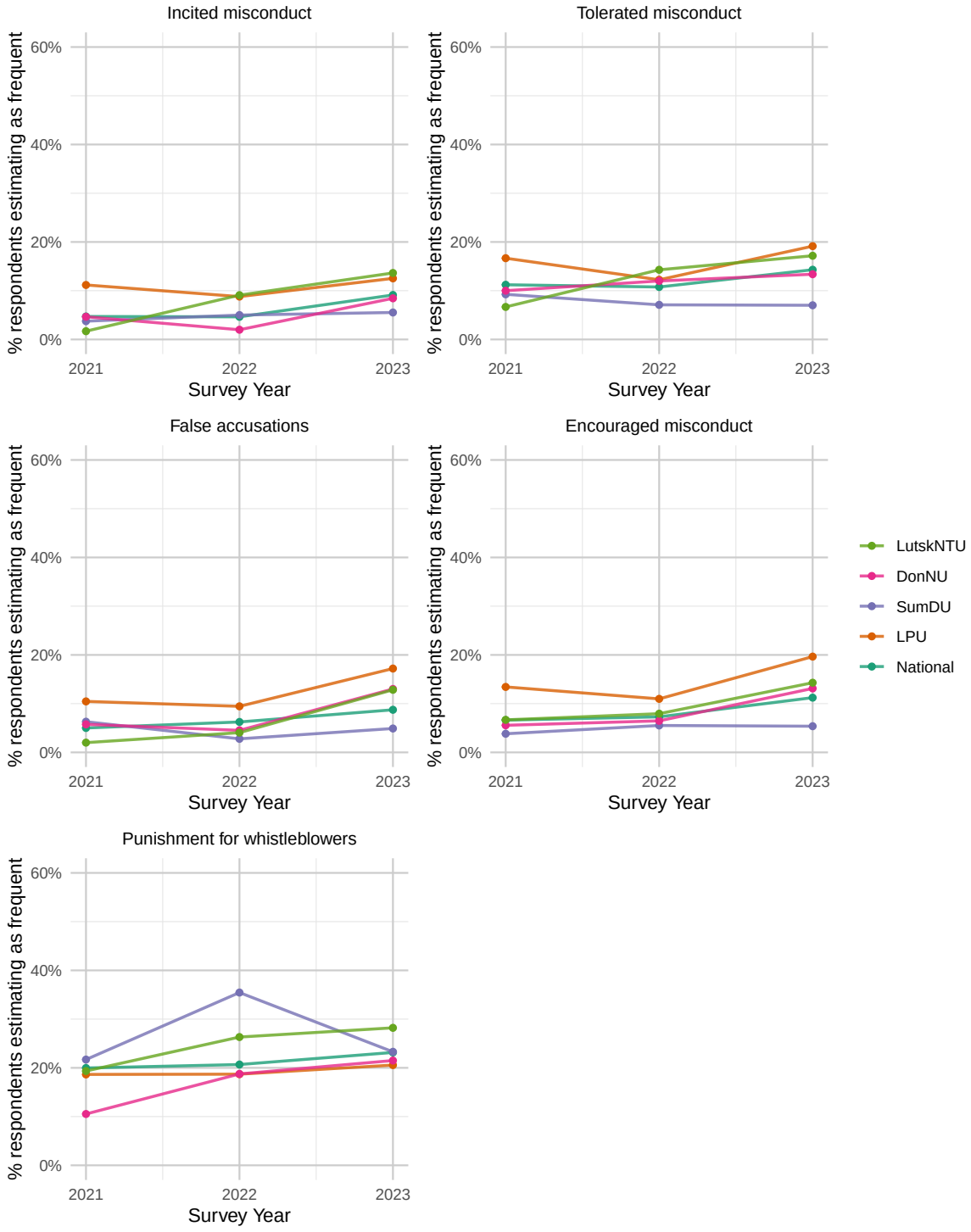

Sources not referenced
Self−plagiarism
Fabrication of data/facts
Selective citations
Plagiarism
Academic ghostwriting
% respondents estimating as frequent
60%
40%
20%
0%
2021
2022
2023
Survey Year
LutskNTU
DonNU
SumDU
LPU
National

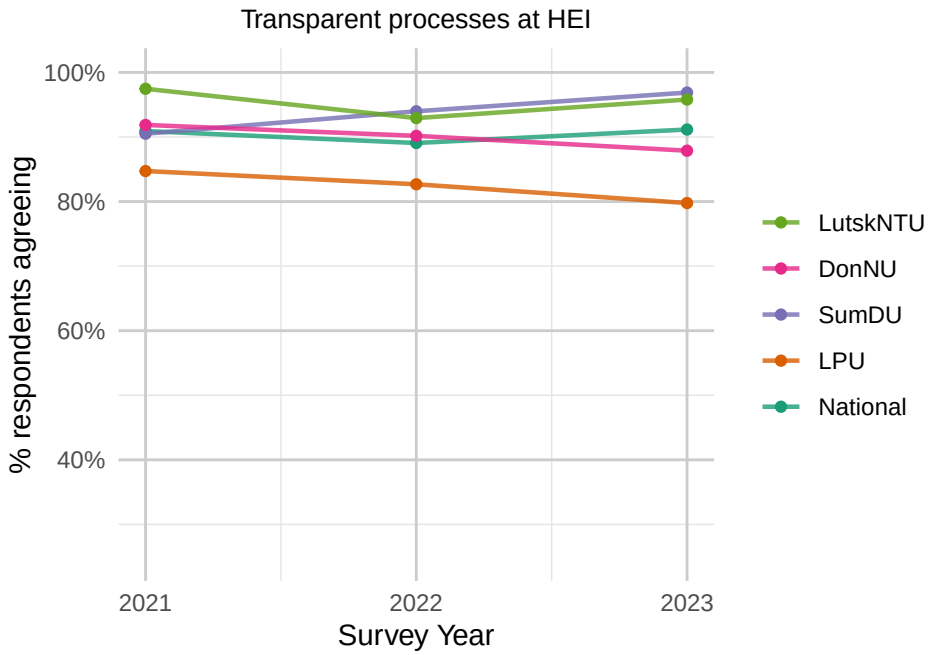
Education


High quality educational services
Open access to diploma theses
Students reporting misconduct
Open educational resources
% respondents agreeing
100%
80%
60%
40%
2021
2022
2023
Survey Year
LutskNTU
DonNU
SumDU
LPU
National


Collaboration during exams
Unauthorized aids during exams
Use of pirated software
% respondents estimating as frequent
60%
40%
20%
0%
2021
2022
2023
Survey Year
LutskNTU
DonNU
SumDU
LPU
National

Institution/Administration

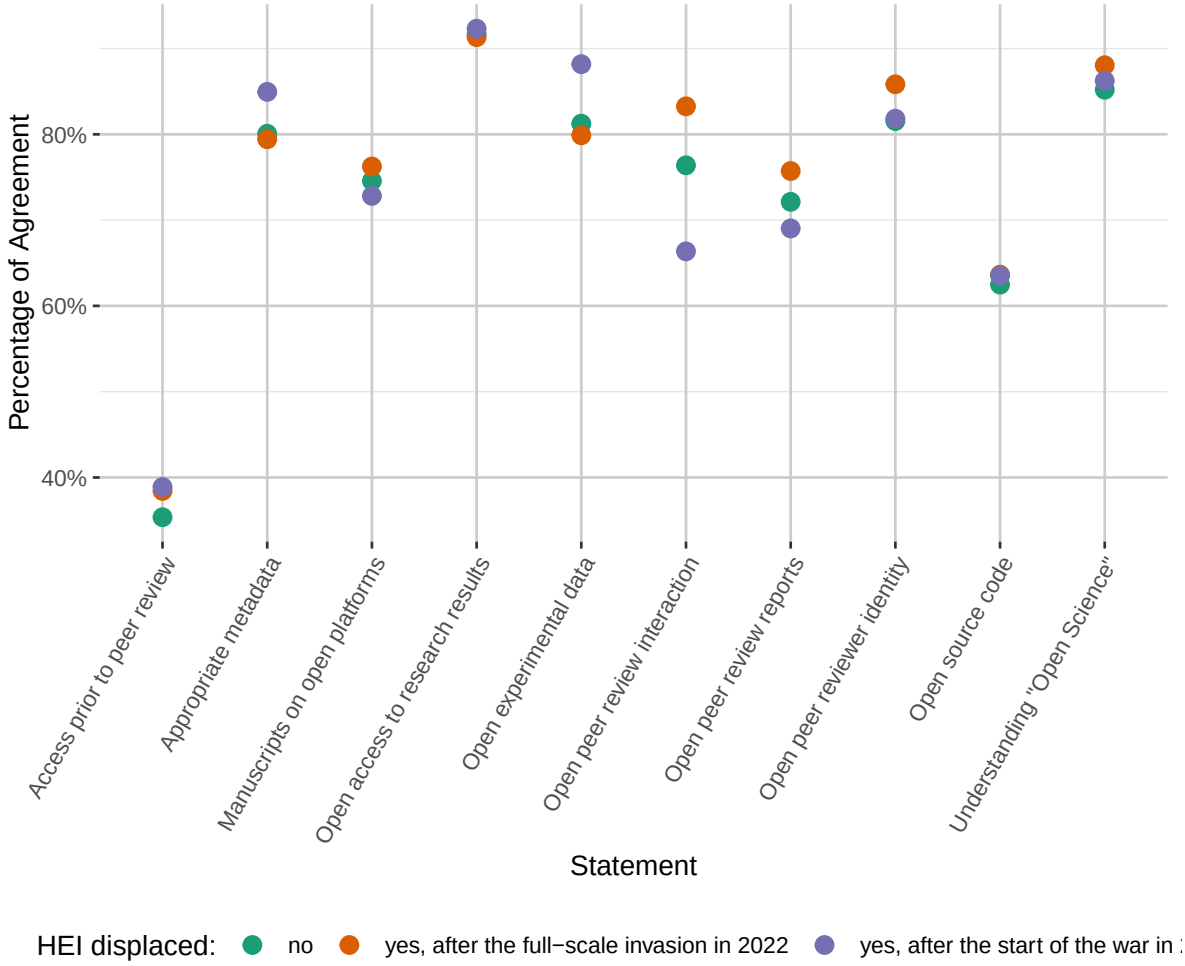




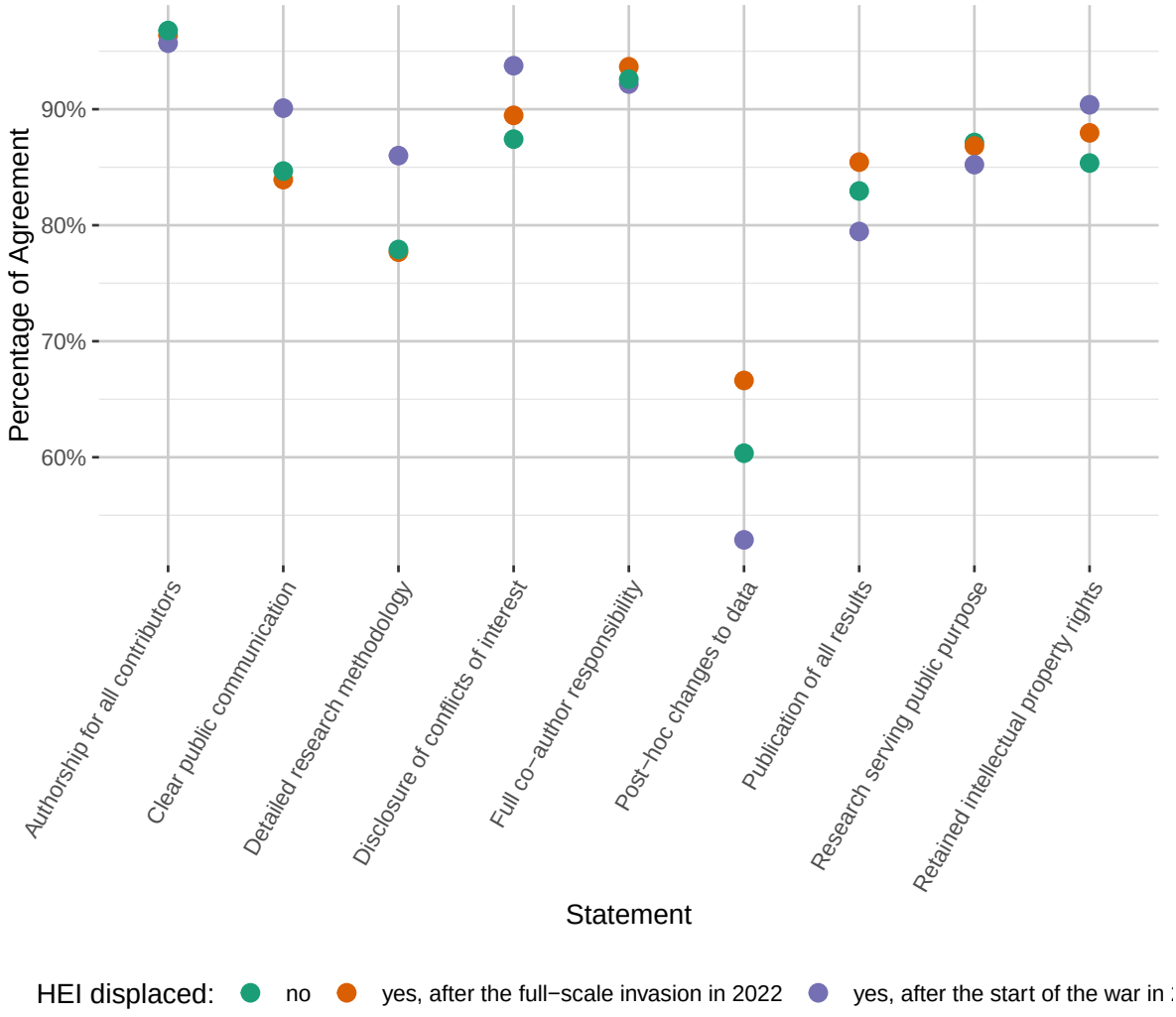
Displacement

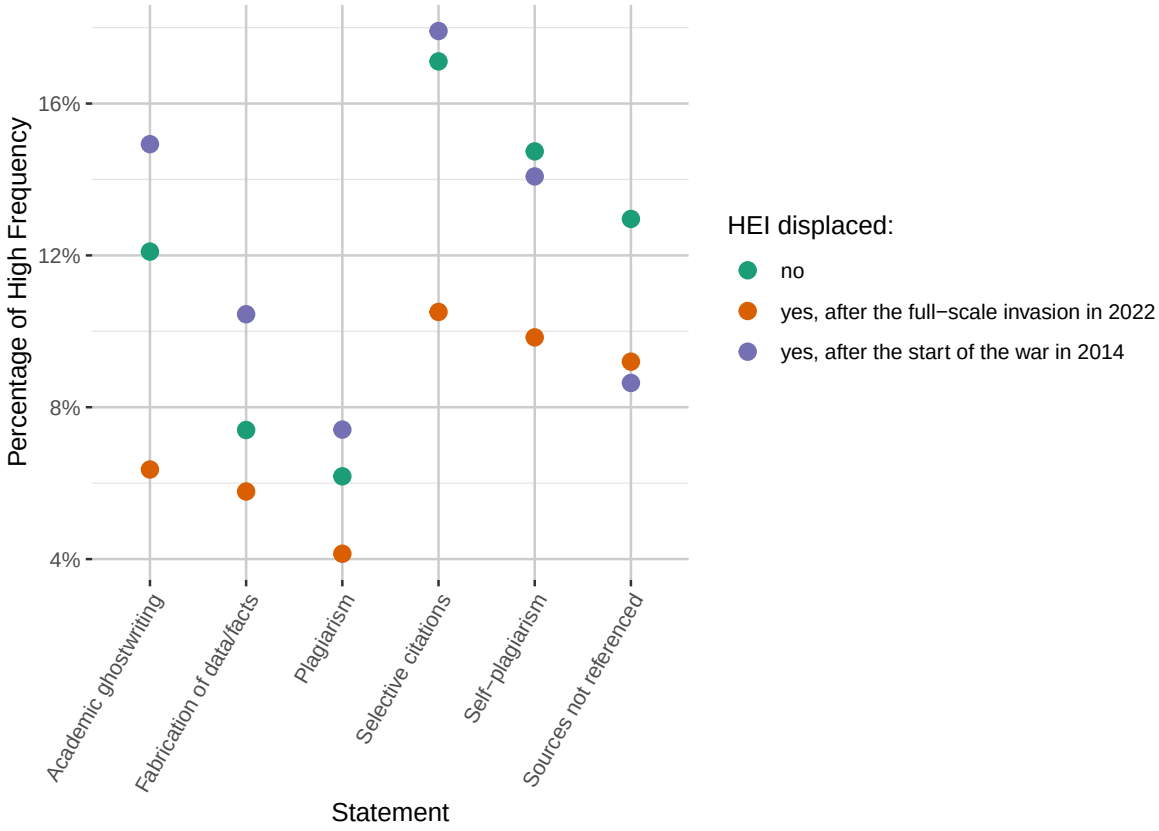
In 2022, respondents were additionally asked about whether their HEI had been displaced (in 2014, 2022, or not at all). The following figures show reponses to the items in comparison between displaced and non-displaced HEIs. Responses were again dichotomized to agreement/disagreement and high frequency/low frequency.

Open Science

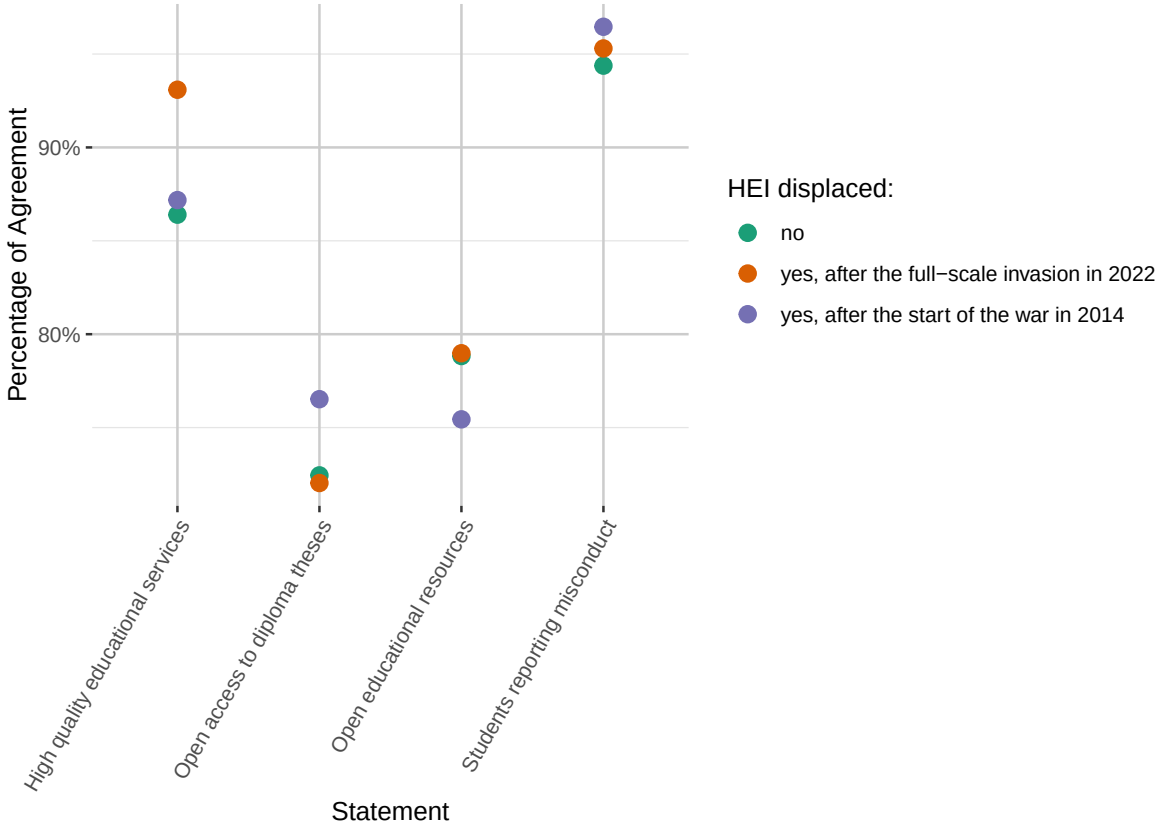


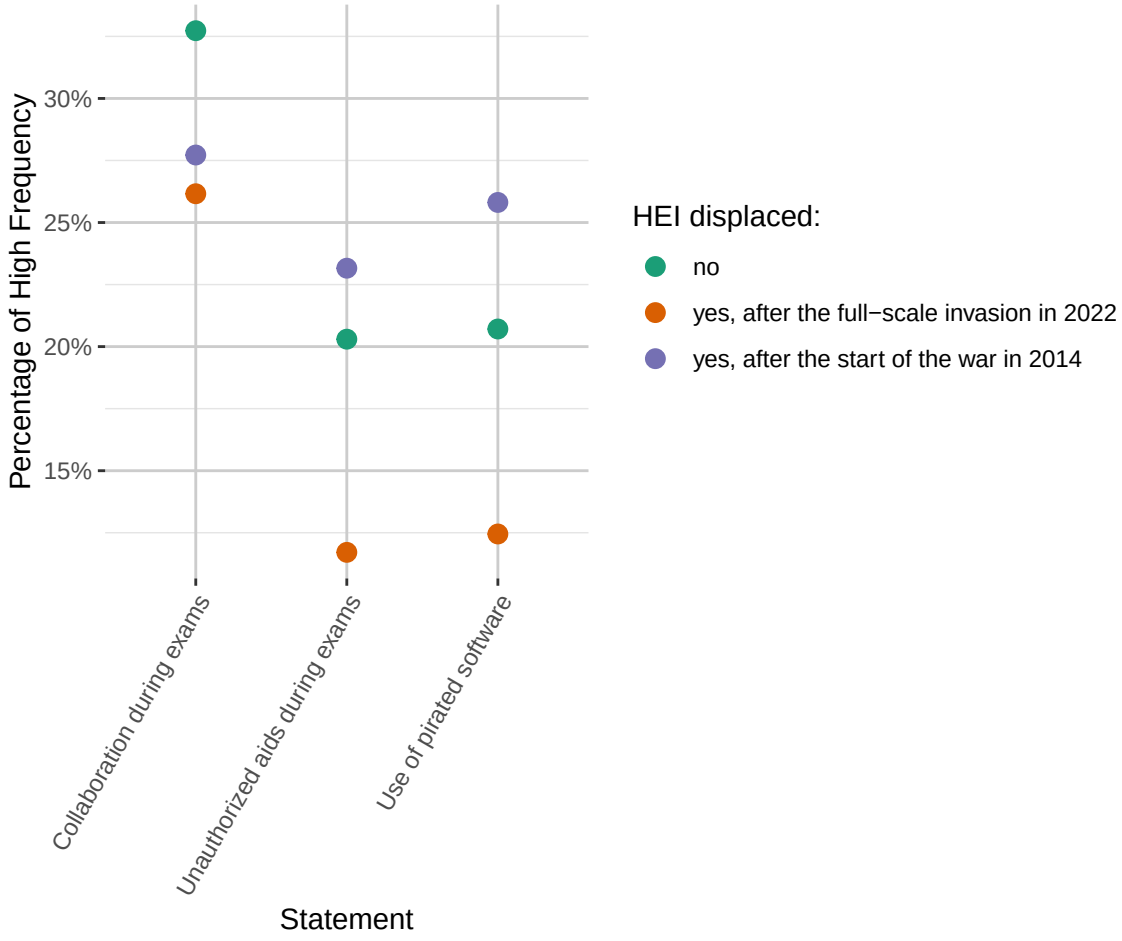
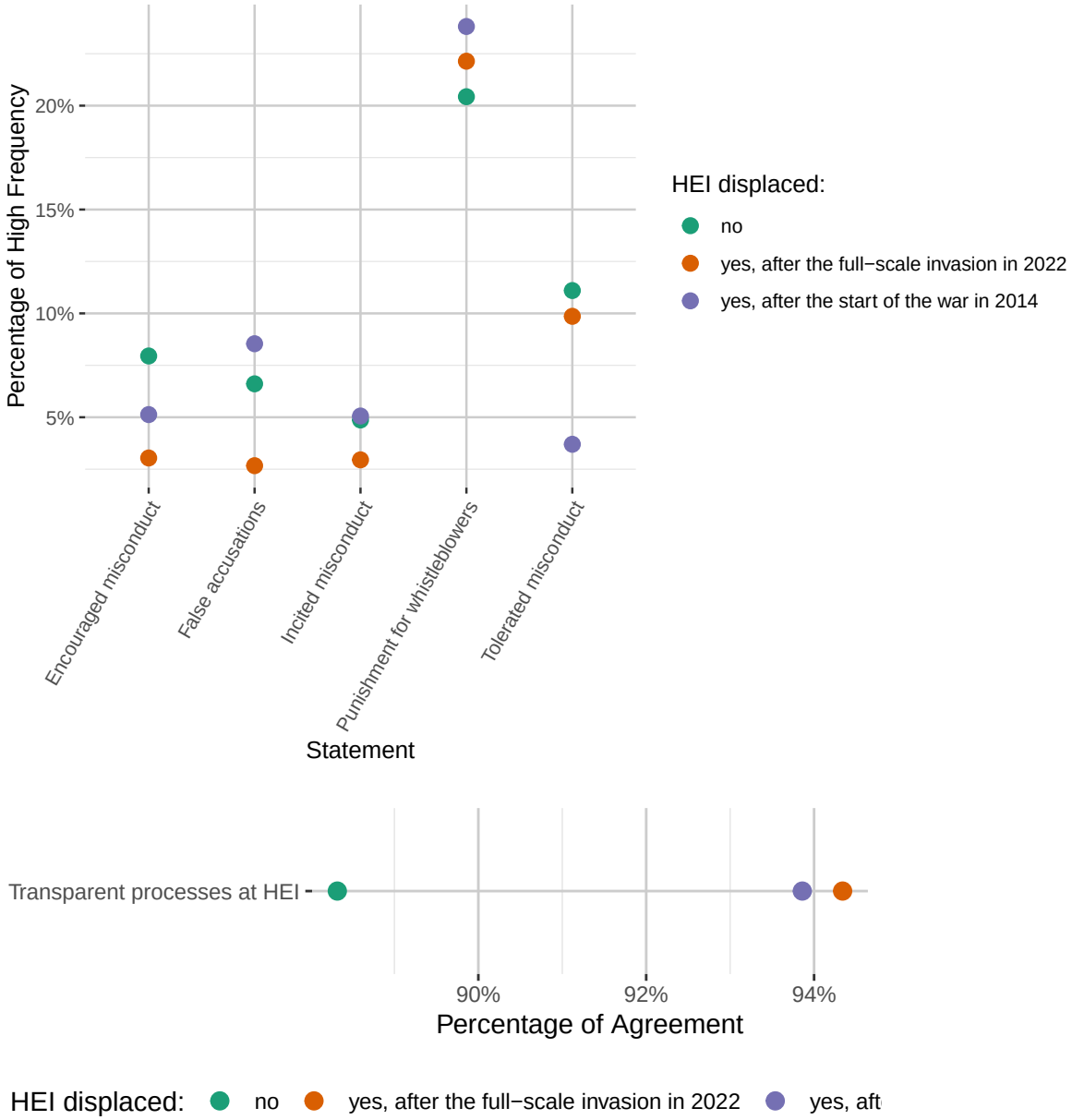
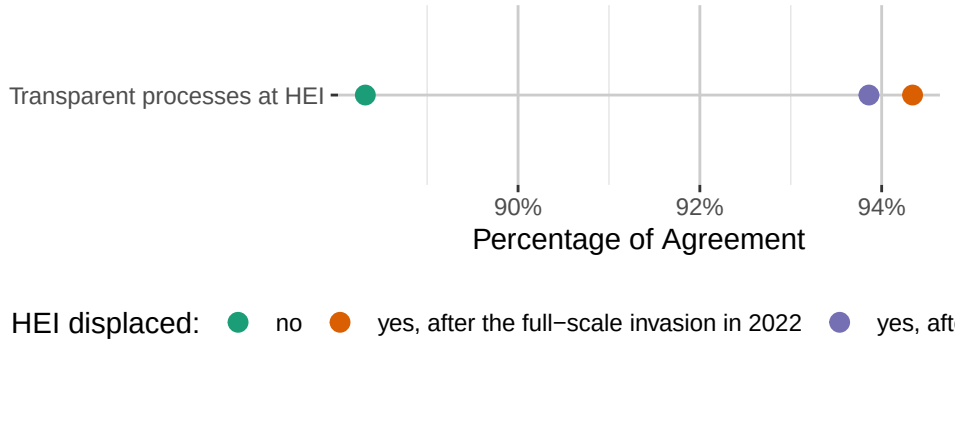
Reporting and Academic Integrity




Percentage of High Frequency
16%
12%
8%
4%
Academic ghostwriting
Fabrication of data/facts
Plagiarism
Selective citations
Self−plagiarism
Sources not referenced
Statement
HEI displaced:
no
yes, after the full−scale invasion in 2022
yes, after the start of the war in 2014

Education


Percentage of Agreement
90%
80%
High quality educational services
Open access to diploma theses
Open educational resources
Students reporting misconduct
Statement
HEI displaced:
no
yes, after the full−scale invasion in 2022
yes, after the start of the war in 2014


Percentage of High Frequency
30%
25%
20%
15%
Collaboration during exams
Unauthorized aids during exams
Use of pirated software
Statement
HEI displaced:
no
yes, after the full−scale invasion in 2022
yes, after the start of the war in 2014

Institution/Administration